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Submitted online via the web portal

The Secretary,
An Bord Pleanála,
64 Marlborough Street,
Dublin 1.

24 April 2026

Dear Sir/Madam,

Third Party Objection in respect of a proposed Strategic Infrastructure Development located in County Galway, An Coimisuin Pleanála ref. PA07.324113. The planning application proposes 10-year permission for the proposed development of a natural gas-fuelled electricity generation plant (named 'Cashla Peaker Plant') designed to provide flexible support to Ireland's power system. The plant will operate primarily on natural gas. The facility will be designed with dual-fuel capability, allowing the use of low sulphur diesel on a limited basis for emergency or back-up operation where required to ensure security of electricity supply, on lands at Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway.

We, BPS Planning & Development Consultants LTD, a firm of Irish Planning Institute accredited town planning consultants, have been retained by Athenry Peaker Plant Concern Group, c/o Chair, Oliver Freeney, Castlelambert, Athenry, Co. Galway, H65RX77 [hereafter "client" or "clients"] to prepare and to lodge to An Coimisuin Pleanála [hereafter "ACP" or "the Commission"] a Third Party objection in respect of planning application, reg. ref. PA07.324113. The planning application refers to the proposed development of a 11.54 hectare site, for use as a 'open-cycle gas turbine power plant' on the lands at Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway, including, inter alia:

> *The construction of a proposed power plant which will comprise an open-cycle gas turbine (OCGT) and generator with ancillary equipment including a 30m high stack and emissions monitoring unit, fuel storage and supply systems, cooling and air systems, compressed air and gas handling skids, a grid step-up transformer within a bund, an auxiliary transformer and an emergency diesel generator. The construction of ten buildings on-site including one single-storey administration building (approximately 390sqm), onesingle storey ESB Substation building (approximately 32.5sqm), one single-storey workshop building (approximately 750.5sqm), one single storey water treatment plant building (approximately 104sqm), one covered fuel forwarding and unloading area (approximately 104sqm), one single-storey electrical control building (approximately 243.5sqm), one single storey gas analyser kiosk (approximately 6.25sqm), one single-storey boiler house kiosk (approximately 37sqm) including ten boiler flues (approximately 5.67m above ground level), one single-storey ancillary pressure reduction kiosk (approximately 21.7sqm) including four vents (approximately 3.72m high) and a single-storey electrical and instrumentation kiosk (approximately 19sqm). The installation of five above-ground tanks including two bunded fuel tanks (approximately 11.1m high), one fire and service water tank (approximately 13m high), one demineralised water tank (approximately 15.4 high) and one demineralised waste tank (approximately 5m high).*

Please find our client's Planning Objection Report attached. Section 7.0 of this report sets out 'Grounds for Objection'. For the avoidance of doubt, this letter, the attached form, the attached Planning Objection Report, and its accompanying supporting submissions comprise the extent of this planning objection.

1.0 Validation

For the purpose of validation of this objection, we note how:

- This planning application was lodged to An Coimisuin Pleanala on the 27th February 2026. The final deadline for submissions of objections is Friday, 24th of April 2026. This objection is submitted on or prior to this deadline.
- Payment of the euro 50 statutory fee for a third-party objection will be paid online at the web portal.
- Grounds for Objection are set out in the attached Planning Objection Report. The following appendices are attached to the BPS Planning Objection Report:

  - ❖ The Athenry Peaker Plant Concern Group's accompanying submission.
  - ❖ A legal submission from Fred Logue of FP Logue LLP.

- A submission from Cillín Environmental – 'Considerations of Planning Application 324113 to An Coimisiun Pleanála for the Development of an Open Cycle Peaker Plant & 220 kV Sub-Station at Rathmorrissy Athenry, Co. Galway & Connection to 220kV Sub-Station at Cashla by Bord Gáis Energy.'

2.0 Oral hearing request

Our client is requesting an oral hearing.

3.0 Finally

We trust that everything is in order, and we look forward to receiving a refusal decision from An Coimisiún Pleanála in due course.

Please revert if you require any further information.

Best wishes,

Brendan Buck

Brendan Buck MIPI
Managing Director
BPS Planning & Development Consultants LTD

Third Party Strategic Infrastructure Development Planning Objection Check List

1. Name and address of the Objector(s): Athenry Peaker Plant Concern Group, c/o Chair, Oliver Freeney, Castlelambert, Athenry, Co. Galway, H65RX77.

2. If an agent is involved, state the name of the agent: Brendan Buck MIPI.

3. Address of the agent: BPS Planning Consultants LTD., PO BOX 13658, Dublin 14.

4. State the Subject Matter of the Objection: Third Party Objection in respect of a planning application for a Strategic Infrastructure Development in County Galway. An Coimisuin Pleanála ref. PA07.324113. The planning application proposes the construction of a Strategic Infrastructure Development for a natural gas-fuelled electricity generation plant ('Cashla Peaker Plant') designed to support Irelands power system. The plant will operate primarily on natural gas. The facility will be designed with dual-fuel capability, allowing the use of low sulphur diesel on a limited basis for emergency or back-up operation where required to ensure security of electricity supply.

5. Location of development:'In the lands at Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway.

6. Local authority area: Galway County Council.

7. Planning authority: An Coimisuin Pleanala.

8. Planning authority register reference number: An Coimisuin Pleanála ref. PA07.324113.

9. Attach, in full, the grounds for appeal objection and the reasons, considerations and arguments on which they are based. Please find a Planning Objection Report and cover letter attached setting out the Grounds for Objection and the reasons, considerations and arguments on which they are based.

10. Enclose/Pay the correct fee for the **third** party Objection: €50.

11. Oral hearing: An oral hearing is requested.

12. Ensure that the OBJECTION is received by An Coimisuin Pleanála in the **correct manner** and in **time**. This planning application was lodged to An Coimisiún Pleanála on the 27th February 2026. The final deadline for submissions of objections is Friday, 24th of April 2026. This appeal is submitted on or prior to this deadline.

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Third Party Planning Objection vs. an SID for a Peaker Plant in Galway

Third Party objection in respect of planning application for a proposed Strategic Infrastructure Development in County Galway An Coimisuin Pleanála ref. PA07.324113. The planning application proposes 10-year permission for the proposed development of a natural gas-fuelled electricity generation plant (named 'Cashla Peaker Plant') designed to provide flexible support to Ireland's power system. The plant will operate primarily on natural gas. The facility will be designed with dual-fuel capability, allowing the use of low sulphur diesel on a limited basis for emergency or back-up operation where required to ensure security of electricity supply, on lands at Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway.

This Planning Objection Report has been produced by BPS Planning & Development Consultants LTD for and on behalf of Athenry Peaker Plant Concern Group, c/o Chair, Oliver Freeney, Castlelambert, Athenry, Co. Galway, H65RX77.

Document Control Sheet

Project	Third Party objection in respect of planning application, An Coimisuin Pleanála ref. PA07.324113.
Project No.	2026–179.
Document title	Planning Objection Report.

Contents	No. of pages
Cover page	1
Control sheet	1
Table of contents	3
Text	150
Total No. of Pages	155 (excluding appendices)

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Date: 24 April 2026.

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Appendices:

- The Athenry Peaker Plant Concern Group's accompanying submission.
- Legal submission from Fred Logue of FP Logue LLP.
- Cillín Environmental – 'Considerations of Planning Application 324113 to An Coimisiun Pleanála for the Development of an Open Cycle Peaker Plant & 220 kV Sub-Station at Rathmorrissy Athenry, Co. Galway & Connection to 220kV Sub-Station at Cashla by Bord Gáis Energy'.

1.0 Introduction

BPS Planning & Development Consultants LTD, a firm of Irish Planning Institute[1] accredited town planning consultants, have been appointed by Athenry Peaker Plant Concern Group, c/o Chair, Oliver Freeney, Castlelambert, Athenry, Co. Galway, H65RX77 [hereafter "client" or "clients"] to prepare and to lodge to An Coimisiún Pleanála [hereafter "ACP"] a planning objection in respect of planning application, ACP ref. PA07.324113[2]. The planning application proposes the construction of an 'open-cycle gas turbine power plant, at a 11.54 hectare site on lands at Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway.

The full description of development, as per the statutory notices is as follows:

"The proposed development will consist of:

a) The construction of a proposed power plant which will comprise an open-cycle gas turbine (OCGT) and generator with ancillary equipment including a 30m high stack and emissions monitoring unit, fuel storage and supply systems, cooling and air systems, compressed air and gas handling skids, a grid step-up transformer within a bund, an auxiliary transformer and an emergency diesel generator. The construction of ten buildings on-site including one single-storey administration building (approximately 390sqm), onesingle [Sic] storey ESB Substation building (approximately 32.5sqm), one single-storey workshop building (approximately 750.5sqm), one single storey water treatment plant building (approximately 104sqm), one covered fuel forwarding and unloading area (approximately 104sqm), one single-storey electrical control building (approximately 243.5sqm), one single storey gas analyser kiosk (approximately 6.25sqm), one single-storey boiler house kiosk (approximately 37sqm) including ten boiler flues (approximately 5.67m above ground level), one single-storey ancillary pressure reduction kiosk (approximately 21.7sqm) including four vents (approximately 3.72m high) and a single-storey electrical and instrumentation kiosk (approximately 19sqm). The installation of five above-ground tanks including two bunded fuel tanks (approximately 11.1m high), one fire and service water tank (approximately 13m high), one demineralised water tank (approximately 15.4 high [Sic]) and one demineralised waste tank (approximately 5m high).

b) Ancillary works including the provision of a new gated vehicular entrance from the L3103, the construction of an access road from the proposed Cashla Peaker Plant site entrance to the proposed new entrance on the L3103, the demolition of one farm outbuildinggearoidd, construction of internal circulation routes, hardstanding, security fencing (2.4m high), CCTV and gates, provision of a wastewater treatment system and associated underground wastewater storage tanks, drainage (foul and storm), soakaway retention pond, propane tank, underground firewater retention tanks, parking (12 no. spaces including mobility and EV Parking) and laydown area, 20 no. cycle parking spaces, landscaping and all ancillary on-site development works.

c) The construction of a Gas Networks Ireland (GNI) above ground pressure regulating installation, known as an Above Ground Installation (AGI). The AGI (named Rathmorrissy AGI) will connect to the mains transmission gas network which exists within the site. The AGI infrastructure will occupy an enclosed area of approximately 2,500 sq.m. It encompasses five single-storey buildings: a gas analyser kiosk (approximanone tely 6.25 sqm) [Sic], a boiler house kiosk (approximately 37 sqm) including ten boiler flues approximately 5.67m above ground level and emergency generator, two pressure reduction kiosks – main kiosk (approximately 72 sqm) including nine vents (approximately 5.24m high), and ancillary kiosk (approximately 21.7 sqm) including four vents (approximately 3.72m high) and an electrical and instrumentation kiosk (approximately 19 sqm). Ancillary infrastructure will include a gas meter, filters, heat exchangers, and above-ground pipework. The compound will include lighting, 3 no. parking spaces, internal circulation routes, concrete bases to support the infrastructure, and stone-chipped surfacing. It will be secured by an approximately 2.4 m high fence with an access gate.

An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS) have been prepared in respect of the proposed development and accompany this planning application.

In addition to the above outlined proposed development, the "project", subject of the EIAR and NIS, includes the above proposed development and the construction of a 220kV substation compound within the Cashla Peaker Plant site and the construction an underground grid connection route from the proposed ESB Substation in the Cashla Peaker Plant Site to the Cashla 220kV Substation located across the townlands of Rathmorrissy, Pollnagroagh, Moanbaun, Castlelambert, Knocknacreeva, Caraunduff, Caherbriskaun, Lisheenkyle East, Barrettspark, Cashla, Athenry, Co. Galway. The grid connection route traverses approximately 8.1km including along the L7109, L71093, L7108 and L3103 roads. The substation and grid connection will be subject to a separate Strategic Infrastructure Development planning application submitted to An Coimisiún Pleanála. It is noted that the project, subject of the EIAR and NIS,

[1] https://ipi.ie/
[2] https://www.pleanala.ie/en-ie/case/324113

also includes the connection to the existing mains gas network (Mayo–Galway pipeline (BGE/85)) which will be undertaken via a new transmission pipeline (named GNI146) located within the townland of Rathmorrissy, Athenry, Co. Galway. A separate application to obtain approval for the GNI146 gas pipeline will be submitted under section 39A of the Gas 14 February 2026 | Planning Statement Act 1976, as amended. It is anticipated that the substation, grid connection, AGI and gas connection will remain part of the national infrastructure and are not subject to the 2050 operational life end proposed for the Cashla Peaker Plant."

This planning application was lodged to An Coimisiún Pleanála on the 27th February 2026. The final deadline for submissions of objections is **Friday, 24th of April 2026**. This objection is submitted on or prior to this deadline.

For the convenience of ACP, we have commented on both technical, planning law, and planning history issues prior to setting out our clients' Grounds for Objection.

Having regard to the scale and complexity of the proposed development, and the significant deficiencies identified in the EIAR, it is respectfully requested, on behalf of the Athenry Peaker Plant Concern Group, that an oral hearing be convened to facilitate a full and proper examination of the issues arising.

The deficiencies identified in this submission are further substantiated by the enclosed legal opinion prepared by FP Logue Solicitors, which concludes that the EIAR does not comply with the requirements of the EIA Directive or with the State's statutory climate obligations.

We highlight the recent decision of the Supreme Court in respect of the Balz[3] judgement wherein it was clarified that "It is a basic element of any decision making affecting the public that relevant submissions should be addressed [by the Planning Authority] and an explanation given why they are not accepted, if indeed that is the case. This is fundamental not just to the law, but also to the trust which members of the public are required to have in decision making institutions if the individuals concerned, and the public more generally, are to be expected to accept decisions with which, in some cases, they may profoundly disagree, and with whose consequences they may have to live". We trust that the Planning Authority will give full attention to each of the issues raised within this submission.

[3] Balz and Heubach-v- An Bord Pleanála and Cork County Council, Cleanrath Windfarms Ltd. [2019] IESC 90 Balz.

2.0 Rationale and Summary of this Objection

This objection is submitted on behalf of Athenry Peaker Plant Concern Group, representing local residents chairperson Gearoid Harty, Castlelambert, Athenry, Co. Galway, H65 FD77 [hereafter "client"], in response to the current planning application to An Coimisiún Pleanála for the proposed Cashla Peaker Plant, comprising a natural gas-fuelled open-cycle gas turbine power plant and associated infrastructure on lands at Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway. The objectors reside in close proximity to the proposed development and possess detailed local knowledge of the environmental, landscape, residential, and infrastructural sensitivities that characterise this part of County Galway. The application relates to a site of approximately 11.54 hectares, while the wider project assessed in the EIAR also includes a 220kV substation, an approximately 8.1 km underground grid connection route, and a separate gas connection to the existing transmission pipeline.

The proposed development is of significant scale and complexity, involving the construction of a large combustion-based electricity generation facility including an open-cycle gas turbine, a 30m high stack, diesel storage tanks, water and waste tanks, a new vehicular entrance from the L3103, a new internal access road, a Gas Networks Ireland Above Ground Installation (AGI), extensive hardstanding, lighting, fencing, drainage and associated ancillary infrastructure. Although the current application relates to the peaker plant and AGI, the applicant's own documentation confirms that the overall project also depends upon the separate delivery of the substation, underground grid connection and gas pipeline infrastructure. The proposed plant is intended to operate primarily on natural gas, with dual-fuel capability allowing the use of low sulphur diesel on a limited basis, and with an operational life proposed up to 31 December 2050.

The subject site is located within an open rural landscape approximately 2 km west of Athenry and approximately 17–18 km east/northeast of Galway City, in an area characterised by agricultural land use, dispersed rural housing, and local road infrastructure. While the applicant places reliance on the site's proximity to existing strategic infrastructure, including the Mayo–Galway gas pipeline and the Cashla 220kV Substation, the receiving environment remains predominantly rural in character and contains a range of nearby residential and other sensitive receptors. The site is bounded to the west by the M18 motorway, with the M6 motorway to the south, and agricultural lands to the north and east. The objection contends that the introduction of a major industrial energy development into this setting would represent an inappropriate and harmful intensification of use, fundamentally altering the character of the area.

This objection is based on a detailed review of the applicant's submitted documentation, including the Planning Statement, EIAR, Natura Impact Statement, and associated technical reports. That documentation itself demonstrates that the proposed development is affected by serious issues relating to site suitability, landscape and visual impact, traffic safety, hydrological vulnerability, biodiversity and ecological risk, major accident hazard, alternatives assessment, and the fragmentation of the wider project across multiple consent processes. The pre-application consultation history is particularly important in this regard, as it confirms that An Coimisiún Pleanála, Galway County Council, the Galway County Council Roads Department, and the Health and Safety Authority all identified substantive concerns regarding technology selection, karst geology, road and haul route capacity, visual impact, hydrological sensitivity, major accident hazards, modelling assumptions, receptor separation, and the deferral of the grid connection to a separate application.

It is contended by our client that planning permission should be refused for the following reasons:

- The failure to demonstrate that the principle of the development is acceptable at this particular rural location, having regard to the character of the receiving environment, the density of nearby sensitive receptors, and the qualifying provisions of the Galway County Development Plan 2022–2028.
- The failure to adequately assess and address the likely adverse impacts on residential amenity, including visual intrusion, industrialisation of the rural landscape, noise, traffic disturbance, loss of tranquillity, and the cumulative burden imposed on nearby dwellings and community receptors.
- The failure to provide a robust and precautionary assessment of hydrological and hydrogeological risk, particularly having regard to the karst nature of the area, the potential for groundwater and surface water pathways, and the identified concern of statutory consultees regarding ecological and water-related sensitivity.
- The wholly inadequate demonstration that the surrounding road network and haul routes are suitable to accommodate the construction and operational traffic associated with the development, including exceptional abnormal loads, thereby giving rise to serious concerns for public safety, route feasibility, bridge capacity, and third-party approvals.
- The failure to adequately assess the implications of the proposed development in terms of major accident hazards, fire and explosion risk, off-site consequences, land-use planning compatibility, and appropriate separation distances from nearby receptors, notwithstanding the concerns raised by the Health and Safety Authority.
- The failure to properly assess reasonable alternatives, including alternative technology choices, alternative routing, alternative layouts, and the wider strategic justification for selecting this site, as identified during pre-application consultation.

- The reliance on a fragmented consent strategy whereby the peaker plant, grid connection and gas connection are advanced through separate statutory processes, notwithstanding that the applicant's EIAR assesses the overall proposal as a single combined project, thereby giving rise to serious concerns regarding project splitting, cumulative assessment, and transparency in environmental assessment.

This objection is further supported by the applicant's own pre-application consultation record, which demonstrates that the principal planning and environmental concerns now raised by the objectors were also identified by the relevant authorities before the application was lodged. These include concerns regarding the rationale for choosing OCGT rather than alternatives, the adequacy of the karst investigation, the capacity of haul routes to carry turbine delivery loads, the consistency of the operational lifespan with climate policy, the omission of the grid connection from the current application, the need for more robust visual assessment, and the requirement for stronger evaluation of hydrological and ecological pathways. These matters go directly to the planning merits of the proposal and significantly weaken the applicant's case that the site has been shown to be suitable or the environmental effects fully assessed.

In summary, the proposed Cashla Peaker Plant constitutes a serious departure from the principles of proper planning and sustainable development. It would introduce a large-scale industrial, combustion-based energy facility into an open rural landscape containing established residential receptors and sensitive environmental constraints. The development gives rise to substantial unresolved concerns in relation to site suitability, residential amenity, traffic safety, hydrological risk, ecological pathways, major accident risk, and the integrity of the environmental assessment process. It is further characterised by a fragmented project structure, with essential components deferred to separate consenting procedures despite their acknowledged interdependence.

In these circumstances, the proposal has not been shown to be acceptable in principle or in practice, and it is respectfully submitted that planning permission should be refused.

3.0 Location and Description of the Subject Site

The subject site is located in County Galway, approximately 2 km west of Athenry and circa 17 km northeast of Galway City (refer to Fig. 1). The site lies within a rural agricultural landscape characterised by dispersed one-off housing and a network of local roads.

The context of the area surrounding the subject site is illustrated below in Fig. 1.

Fig. 1: Site Context Map with Subject Site Indicatively Labelled by Red Dot (Source: Applicant's Planning Statement Fig 3.1, annotated by BPS, 2026)

The proposed development site extends to approximately 11.54 hectares and comprises predominantly greenfield agricultural lands currently in use for farming. The lands are divided into fields enclosed by traditional stone walls and hedgerows, consistent with the prevailing rural landscape character of the area. There are no existing structures within the site.

The site is bounded to the west by the M18 motorway, with the M6 motorway located to the south. Agricultural lands adjoin the site to the north and east. While the receiving environment is rural in character, it is notably interspersed with existing strategic infrastructure, including the nearby Cashla 220kV Substation (located approximately 3.4 km to the west) and the Mayo–Galway gas transmission pipeline, which traverses the southern portion of the site.

Residential receptors are located in proximity to the site. The nearest dwelling is approximately 530 metres to the north[4], with a number of additional dwellings located within a 1 km radius. Residential properties to the west, although within 1 km, are separated from the site by the M17 motorway.

The site is located within the Oranmore and Athenry Strategic Economic Corridor, as identified in the Galway County Development Plan 2022–2028. The surrounding landscape is classified as a Central Galway Complex Landscape Character Type, described as a working rural landscape comprising a mix of agricultural land uses, settlement, and infrastructure.

The nearest recorded monument (a ringfort) lies approximately 100 metres to the west of the M17 motorway and is physically separated from the subject site by this infrastructure.

A satellite image of the subject site is provided below in Fig. 2.

Fig. 2: Map showing applicant's overall landholding (Indicative Only) (Source: Bingmaps annotated by BPS, 2026)

3.1 Identified Constraints of the Subject Site

Notwithstanding its strategic designation, the subject site exhibits a number of inherent constraints arising from its rural setting, proximity to sensitive receptors, and existing pattern of development in the area.

The site is located within an open rural landscape characterised by agricultural use and dispersed residential development. The proximity of residential dwellings in the surrounding area gives rise to potential amenity conflicts, particularly having regard to the scale and nature of the proposed development.

While the area contains elements of strategic infrastructure, including national road corridors and energy infrastructure, these are largely linear or spatially contained in nature. The proposed development would represent a substantial intensification of built form and activity on a greenfield site, introducing a form and scale of development that is not characteristic of the immediate receiving environment.

[4] Receptors Eircode is H65HX43.

The absence of any existing development on the site, combined with its open and exposed nature, increases its sensitivity to visual change. This gives rise to potential impacts on the character of the rural landscape and the perception of the area.

The site's location outside of any defined settlement boundary further reinforces its rural context. In this regard, the introduction of large-scale industrial energy infrastructure at this location must be carefully assessed against the need to protect rural character and residential amenity.

In addition, the presence of existing strategic infrastructure in the wider area raises potential concerns regarding the cumulative concentration of infrastructure within this rural landscape.

Having regard to the above, the site is considered to be constrained in its capacity to accommodate the proposed development without giving rise to adverse impacts on residential amenity and rural landscape character.

4.0 Planning & Enforcement History

This section aims to provide an overview of the sites planning and enforcement history pertaining to the subject site. A comprehensive review of both the National Planning Application Database, Galway County Council's online planning application viewer and An Coimisiún Pleanála's case search tool has been conducted in this regard.

4.1 Details of Pre-Planning Consultation in Respect of the Subject Application

The applicant undertook a series of pre-application consultations with An Coimisiún Pleanála, Galway County Council, the Health and Safety Authority, and other stakeholders prior to lodging the application. These consultations identified a range of substantive environmental, infrastructural, and planning concerns which are directly relevant to the assessment of the proposed development.
The key consultations and issues arising are set out below.

4.1.1 An Coimisiún Pleanála – Section 37B Consultations (20 January 2025 & 28 May 2025)

Two pre-application meetings were held with An Coimisiún Pleanála under Section 37B (Ref. ABP-320975-24). As stated by the applicant, the purpose of these consultations was to address "whether or not the proposed development constitutes strategic infrastructure for the purposes of the PDA 2000" and to "clarify the scope and information requirements of the application".

Notwithstanding this procedural purpose, the consultations also served to **identify a number of substantive and site-specific concerns** which go directly to the acceptability of the proposed development.

The principal issues raised by the Commission are summarised in Table 1 below.

Issue Raised by Commission	Nature of Concern	Applicant Response	BPS Response
Technology selection (OCGT vs CCGT)	The Commission "sought clarification on the rationale for the open-cycle technology chosen" including alternatives	Applicant states open-cycle is required due to "much quicker response time… to meet rapid changes in the transmission grid"	The applicant's justification for selecting open-cycle gas turbine (OCGT) technology is limited to operational flexibility and faster response times, without presenting a robust or transparent assessment of reasonable alternatives. There is no comparative analysis of alternative technologies, including combined cycle gas turbine (CCGT), battery storage, or demand-side solutions, as required under EIA Directive obligations. The absence of a structured alternatives assessment undermines the credibility of the site selection and design process and fails to demonstrate that the proposed development represents the most appropriate or sustainable solution.
Karst geology	The Commission explicitly noted "the area is karst limestone" and advised that "a full investigation of potential karst	Applicant relies on EIAR Chapter 11 investigations	The applicant's reliance on the EIAR Chapter 11 assessment does not adequately address the specific concerns raised by the Commission regarding karst geology and associated risk pathways. The investigation appears limited in scope and does not provide sufficient evidence of comprehensive site characterisation, including

	features including caves would be required"		the identification of subsurface voids, conduits, or potential groundwater flow pathways. Given the inherent sensitivity of karst environments, the absence of detailed hydrogeological modelling and risk assessment represents a significant deficiency, particularly in relation to contamination pathways and structural stability.
Traffic & haul routes	The Commission required confirmation that haul routes "have the capacity for the weight of the delivery loads" and clarity on routing	Applicant identifies preferred haul route and structural assessments	The applicant's identification of a preferred haul route, supported by structural assessment, does not adequately demonstrate that the receiving road network has the capacity to safely accommodate the scale and nature of proposed loads. The assessment fails to fully consider the constraints of local rural roads, including limited width, poor alignment, and junction capacity. Furthermore, there is insufficient evaluation of residual risks associated with abnormal loads, construction traffic, and cumulative impacts. As such, the EIAR does not provide a reliable basis to conclude that traffic and transport impacts can be mitigated to an acceptable level.
Operational lifespan	The Commission stated that the duration must be "consistent with the current Climate Action Plan having regard to the involvement of fossil fuels"	Applicant proposes operation up to 31 December 2050	The proposed operational lifespan of the development to 2050 raises significant concerns in the context of national climate policy and decarbonisation objectives. While the applicant references alignment with the Climate Action Plan, there is no meaningful assessment of the long-term implications of continued fossil fuel reliance or the risk of carbon lock-in. The EIAR fails to demonstrate how the development would remain compatible with evolving policy targets, including reductions in greenhouse gas emissions and the transition to renewable energy systems.
Grid connection	The Commission queried whether a "direct route… along the M6 had been considered"	Grid connection deferred to separate application	The deferral of the grid connection to a separate planning application represents a clear example of project splitting and undermines the integrity of the environmental assessment. The grid connection is an integral component of the proposed development and its omission from the current application prevents a comprehensive assessment of cumulative impacts, including landscape, ecological, and land-use effects along the route. This approach is inconsistent with the requirements of the EIA Directive and fails to provide the decision-maker with a complete understanding of the likely environmental effects of the project as a whole.

Table 1: ACP Pre-Planning Consultation Summary Table

These matters demonstrate that the Commission identified **fundamental issues relating to site suitability, environmental risk, infrastructure capacity, and strategic justification**, all of which go to the core of the planning merits of the proposal.

4.1.2 Galway County Council – Pre-Application Consultation (13 February 2025)

A formal pre-application consultation meeting was held with Galway County Council (GCC) on 13th February 2025 to introduce the proposed development and to identify key planning and environmental considerations.

The minutes of this meeting, together with subsequent summary provided by the applicant, confirm that the Planning Authority raised a number of substantive and detailed concerns relating to the proposed development, particularly in respect of community engagement, visual impact, traffic, and environmental sensitivity.

Importantly, the tone of the consultation reflects a requirement for robust, high-quality supporting assessment and clear justification, rather than acceptance of the principle of development at this location.

The principal issues raised are summarised in Table 2 below.

Issue Raised by GCC	Nature of Concern	Applicant Response	BPS Response
Community engagement	GCC "highlighted the importance of robust community consultation" and specifically recommended "in-person drop-in sessions, recorded engagement and other interactive methods" to meaningfully involve the community . The minutes further emphasise the need for timely engagement with elected representatives and the wider community.	Applicant refers to public events, website, and outreach	The applicant's reliance on passive consultation measures such as public events and website publication falls materially short of the robust, proactive engagement explicitly sought by Galway County Council. There is no evidence of meaningful, structured engagement with local residents, elected representatives, or potentially affected stakeholders. In particular, the absence of targeted, in-person consultation in a rural area with dispersed receptors represents a significant deficiency. The approach adopted does not ensure accessibility, inclusivity, or timely dissemination of information, and therefore fails to meet best practice or the clear expectations set out at pre-planning stage.
Traffic and road access	CC advised that engagement with TII and the GCC Roads Section should be undertaken, and that alternative access options (including via the Coffey Depot entrance) should be explored. This reflects concern regarding the suitability and capacity of the receiving road network.	Applicant states engagement with Roads Department and TII undertaken	The applicant's response does not adequately address the substantive concerns raised by Galway County Council in relation to the suitability and capacity of the local road network. While engagement with TII and the Roads Department is noted, no meaningful assessment is provided of the inherent constraints of the narrow, substandard rural roads serving the site. The EIAR fails to demonstrate that these routes can safely accommodate construction traffic, abnormal loads, and operational HGV movements without giving rise to significant risks to road safety, residential amenity, and emergency access. The absence of a robust alternatives assessment further compounds this deficiency.
Visual impact	GCC emphasised the need for "detailed visual representations and mitigation strategies", including photomontages, site sections, and views from multiple perspectives (including from the opposite side of the motorway), to "provide a clear understanding of the overall scale" . A wider study area (5km) with particular focus within 2km of receptors was recommended.	Applicant provides LVIA with 3.5 km study area	The applicant's reliance on a 3.5km study area represents a clear departure from the recommendations of Galway County Council and results in a constrained and incomplete assessment of visual effects. The omission of a wider 5km study area, and the lack of comprehensive photomontages from key viewpoints—including elevated locations and sensitive receptors—undermines the credibility of the assessment. As a result, the EIAR fails to fully capture the scale, prominence, and industrial character of the proposed development within the wider rural landscape, leading to a likely underestimation of significant adverse visual effects.
Environmental sensitivities	GCC explicitly noted the karst landscape, the need for robust wastewater treatment proposals, and the requirement for Appropriate Assessment Screening, having regard to proximity to the Lough Corrib SAC . These comments reflect concerns regarding	Applicant states AA Screening and NIS undertaken	While the applicant states that Appropriate Assessment Screening and a Natura Impact Statement have been undertaken, the EIAR fails to adequately address the specific concerns raised by Galway County Council regarding hydrological pathways and ecological connectivity. In particular, there is insufficient assessment of potential pathways linking the site to sensitive European sites, including via groundwater and surface water systems. The lack of a robust, precautionary analysis of these pathways, together with limited consideration of cumulative and

	hydrological pathways and ecological risk.		indirect effects, represents a significant deficiency in the assessment of ecological risk.

Table 2: Galway County Council Pre-Planning Consultation Summary Table

The issues raised by the Planning Authority highlight **site-specific environmental sensitivity and the need for robust assessment**, particularly in relation to landscape, ecology, and infrastructure.

4.1.3 Galway County Council Roads Department – Technical Engagement (April–September 2025)

A series of technical engagement meetings were held between the applicant and Galway County Council Roads Department on 1st April, 28th April, 5th June, 2nd July, and 10th September 2025 in advance of the planning application.
These engagements focused on the transportation of turbine and generator components, including Exceptional Abnormal Loads (EALs), and the capacity of the receiving road network and associated infrastructure.

The consultation process confirms that the Roads Authority identified a number of significant technical constraints and requirements, particularly in relation to haul route feasibility, structural capacity, and third-party infrastructure.

The principal issues raised are summarised in Table 3 below.

Issue Raised	Nature of Concern	Applicant Response	BPS Response
Exceptional Abnormal Loads (EAL)	The Roads Authority required detailed consideration of abnormal load movements associated with turbine and generator delivery, including the need to assess feasibility and minimise impacts. The consultation process emphasised the scale and complexity of transporting such loads through the receiving road network.	Applicant undertook an EAL assessment and identified a preferred haul route from the Port of Galway	The applicant's identification of a preferred haul route does not constitute a robust assessment of the feasibility of transporting exceptional abnormal loads of this scale through the receiving road network. The EIAR fails to demonstrate, through detailed swept path analysis, structural verification, and real-world constraints, that such loads can be accommodated without extensive disruption, road modification, or safety risks. The scale and complexity of the proposed abnormal loads—particularly given the rural nature of the route—raise serious concerns that have not been adequately addressed or resolved.
Bridge capacity	It was identified that bridges and structures along the haul route must be demonstrated to safely accommodate the proposed loads, with particular emphasis on structural assessment and load-bearing capacity. The Roads Authority highlighted the need for engineering verification and approvals.	Applicant indicates that structural assessments will be undertaken and that appropriate assurances/indemnities will be provided	The applicant's reliance on future structural assessments and the provision of assurances or indemnities does not provide the level of certainty required at planning stage. There is no clear demonstration that existing bridges and structures along the route can safely accommodate the proposed loads without significant intervention. The deferral of critical structural verification to a later stage represents a fundamental flaw in the assessment, as it fails to establish whether the development can be delivered in practice without substantial infrastructural upgrades or associated environmental impacts.
Route constraints	The consultation highlighted the need to assess the suitability of regional and local roads, including geometric constraints, junction capacity, and safety considerations	Applicant identifies a preferred route via national and regional roads	The identification of a preferred route via national and regional roads fails to adequately consider the constraints of the local road network, which forms an integral part of the access strategy. The EIAR does not sufficiently assess geometric limitations, junction capacities, or the interaction between large abnormal loads and existing traffic conditions, particularly within narrow rural sections. As a result, the assessment underestimates the

	associated with abnormal loads.		potential for significant disruption, safety hazards, and adverse impacts on local communities.
Stakeholder coordination	The Roads Authority emphasised the requirement to engage with Transport Infrastructure Ireland (TII), Irish Rail, PPP operators, and other stakeholders, and to obtain all necessary statutory consents and approvals for route usage.	Applicant states that engagement has been undertaken and that permitting pathways are identified	While the applicant indicates that engagement with relevant stakeholders has been undertaken, there is no evidence that all necessary consents, agreements, or technical approvals have been secured. The delivery of the proposed abnormal load route is contingent on multiple third-party consents, including from Transport Infrastructure Ireland, Irish Rail, and other infrastructure operators. The absence of confirmed approvals introduces a significant level of uncertainty and risk, which has not been adequately assessed within the EIAR and undermines the deliverability of the proposed development.

Table 3: Galway County Council Roads Department Pre-Planning Consultation Summary Table

The Roads Authority clearly identified **significant infrastructural constraints and uncertainties**, particularly in relation to abnormal load transport and structural capacity of existing infrastructure

4.1.4 Health and Safety Authority (HSA) Consultation

Consultation was undertaken with the Health and Safety Authority (HSA), including a meeting held on 15th September 2025 as part of the pre-application process. The consultation focused on the major accident potential associated with the proposed development, having regard to the storage and handling of hazardous substances and the proximity of surrounding receptors.

The HSA identified a number of critical safety and land-use planning concerns, particularly in relation to accident scenarios, modelling methodology, and off-site risk implications. The principal issues raised are summarised in Table 4 below.

Issue Raised by HSA	Nature of Concern	Applicant Response	BPS Response
Major accident risk	The HSA raised concerns regarding the potential for catastrophic failure scenarios, including fuel storage incidents, and the associated risk to off-site receptors. The consultation emphasised the need to fully assess "major accident hazards and their consequences" in the context of surrounding land uses.	Applicant refers to EIAR Chapter 15 (Major Accidents and Disasters) and COMAH classification	The applicant's reliance on the EIAR Chapter 15 assessment and COMAH classification does not adequately address the concerns raised by the HSA in relation to major accident hazards and off-site consequences. The assessment is predominantly qualitative in nature and lacks robust quantitative analysis of credible worst-case scenarios, including gas explosions and associated thermal and overpressure effects. There is no meaningful evaluation of the potential extent of off-site impacts on nearby receptors. As such, the EIAR fails to demonstrate that the risks to human health and surrounding land uses have been properly characterised or are acceptable.
Fire/explosion scenarios	The HSA queried the methodology used to assess fire and explosion events, including pool fire scenarios and hazard zone modelling, and the assumptions underpinning such assessments. This reflects concern regarding whether worst-case scenarios have been adequately considered.	Applicant states that modelling has been undertaken within the EIAR	While the applicant states that modelling has been undertaken, the EIAR does not provide sufficient transparency regarding the assumptions underpinning this modelling, including the selection of input parameters, failure scenarios, and meteorological conditions. In particular, there is no clear evidence that credible worst-case or reasonably foreseeable scenarios have been assessed. The absence of detailed hazard zone mapping and sensitivity analysis undermines confidence in the conclusions reached and suggests that the potential severity of fire and explosion events may be underestimated.

Land-use planning implications	The HSA highlighted the importance of a robust land-use planning (LUP) assessment, having regard to the presence of hazardous substances and the proximity of sensitive receptors. The need to clearly demonstrate appropriate separation distances and risk acceptability was emphasised.	Applicant relies on EIAR assessment and classification as a lower-tier COMAH establishment	The applicant's reliance on COMAH classification as a lower-tier establishment does not negate the requirement to assess land-use planning implications in accordance with the Seveso III Directive and national guidance. The EIAR fails to clearly demonstrate that appropriate separation distances between hazardous installations and sensitive receptors have been achieved. Furthermore, there is no transparent assessment of receptor sensitivity or compatibility with surrounding land uses. This represents a significant omission, particularly given the proximity of residential properties and the potential for serious off-site consequences in the event of a major accident.

Table 4: HSA Consultation Summary Table

These issues highlight **potential significant risk considerations**, particularly given the proximity of residential receptors.

4.2 Planning History of the Subject Site

A comprehensive review of the planning history for the subject site, has been undertaken using Galway County Council's online planning search tools and acknowledged in the Planning Application. There is **no recorded planning history associated with the subject site itself** (with the exception of the subject application).

4.3 Planning History in the Vicinity of the Subject Site

The planning history of the immediate environs of the proposed development site are identified in Fig. 3 below.

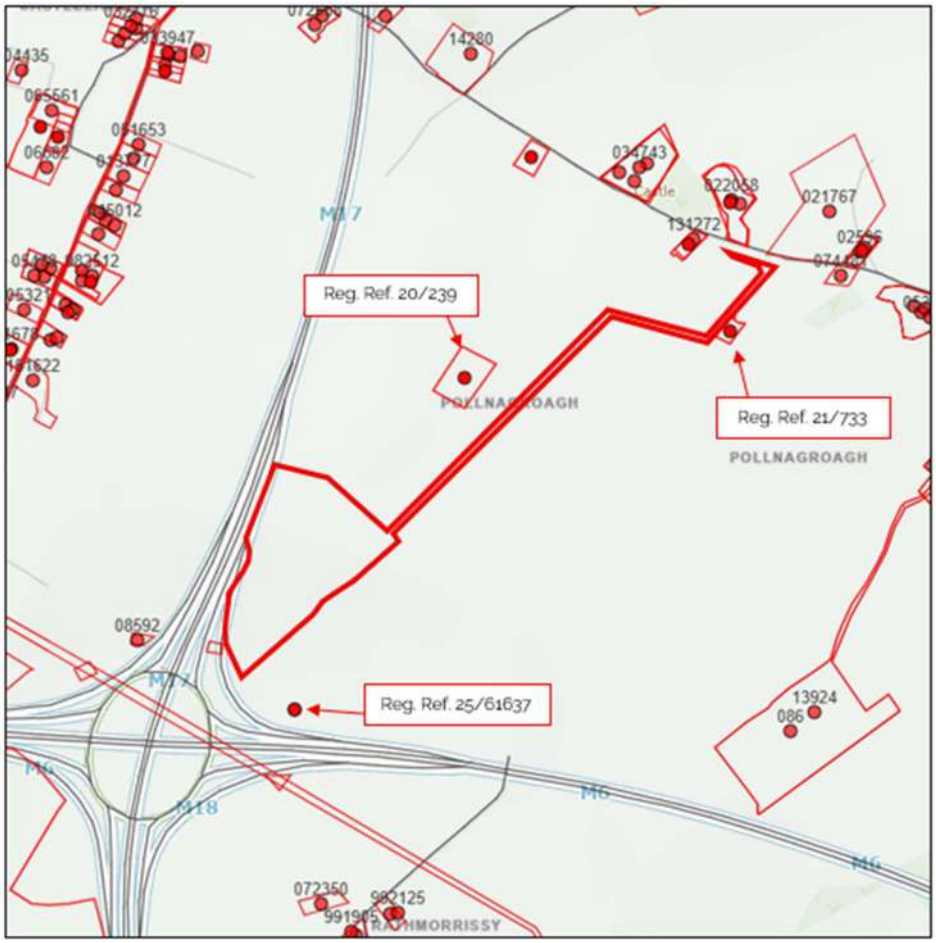


Fig. 3: Planning History Adjacent to the Subject Site) (Source: Cork ePlan Viewer, annotated by BPS, 2026)

The planning applications in the immediate environs of the subject site are summarised in the table.

Reg. Ref.	Details of Development	GCC Decision	Decision Date
95/2361	Permission to construct a dwellinghouse and septic tank	Grant Permission	20/05/1996
99/3007	to construct dwellinghouse with septic tank/percolation area and domestic garage	Grant Permission	30/11/2000
01/1545	for the construction of a dwellinghouse, garage and septic tank	Refuse Permission	09/08/2001
01/637	for the construction of a dwellinghouse, garage, septic tank and percolation area	Grant Permission	05/04/2001
02/4042	for the construction of a dwelling house domestic garage and associated services	Grant Permission	13/01/2003
02/1767	for the construction of a dormer dwellinghouse, septic tank and associated site works	Grant Permission	01/10/2002
02/596	for the construction of a dwellinghouse, domestic garage and associated services	Grant Permission	22/07/2002
03/7241	for demolition of existing dwelling and construction of replacement 2-storey dwelling, septic tank and associated site works (gross floor space of building proposed: 405 m.sq.)	Refuse Permission	13/02/2004
03/4743	for extension to office area, garage and yard	Grant Permission	03/03/2004
03/5323	for the construction of a new conservatory and extension to existing dwelling house	Grant Permission	08/12/2003
04/4909	for the construction of a revised front elevation to offices (gross floor area of building 175m.sq)	Grant Permission	21/02/2005
04/5279	for construction of a dwelling house, septic tank and domestic garage (gross floor area 208m)	Grant Permission	21/03/2005
05/2606	for change of house plan than that which was previously granted under planning ref. no. 04/5279	Grant Permission	10/10/2005
05/4711	for change of plans for construction of a revised front elevation to offices, previously granted under planning reference 04/4909	Grant Permission	20/03/2006
07/4481	to construct dwellinghouse, domestic garage and associated services. (Gross floor area 239sqm)	Grant Permission	17/03/2008
08/6	for sports training facility to consist of a 400 metre 8 lane athletic track field events area 2 No. 100m x 65m playing pitches, 3 No. 65m x 45 pitches, clubhouse facilities and changing rooms, storage building, playground area, site perimeter walkway with seating and low level lighting, floodlighting to pitches and track and field area, signage to Southwest end of site, associated car and bus parking areas, proprietary treatment plant and soil polishing filter area and all associated services, permission to upgrade existing access roadway. (Gross floor area Dressing Rooms 585.88sqm Storage 146.16sqm)	Grant Permission	03/11/2008
13/924	Extension of duration of previous planning reference 08/6.	Grant Extension of Duration	21/10/2013
13/1272	to demolish an existing sub-standard dwelling house and for the construction of a replacement dwelling house domestic garage and associated effluent treatment system and percolation filter (gross floor space 185sqm house; 50.8sqm garage; demolition 56.5sqm)	Grant Permission	05/05/2014
14/280	of alterations/extension to dwelling house (gross floor space 35.52sqm to be retained)	Grant Permission	11/08/2014
18/1280	of minor variations to a dwelling previously approved under pl. ref. 13/1272, on a site with revised site boundaries and for the retention of a domestic shed serving same. Gross floor space of work to be retained: dwelling - 181.8sqm, shed - 58.8sqm.	Grant Permission	10/12/2018
19/1065	for the construction of new dwelling along with garage, treatment septic tank system and all associated site works.	Grant Permission	14/10/2019

	Gross floor space of proposed works: 264.5 sqm (House - 224 sqm, Garage - 40.5 sqm)		
19/1801	to retain an existing dwelling house, domestic garage, and septic tank with percolation area including all associated works and services on revised site boundaries. Permission is also sought to remove the constraints of condition No. 12 of the previous grant of planning permission Ref No. 02/4042 which restricted the sale of the dwelling.	Grant Permission	02/03/2020
20/239	to construct i) Milking parlour building incorporating holding yard with crush/drafting yard, Office, storage rooms and plant rooms and eternal bulk tank, water tank and meal bin, ii) Cubicle shed with slatted tank iii) Calf shed, iv) Silage pits and all assorted site works; Gross floor space of proposed works 2,171sqm	Grant Permission	17/08/2020
21/733	to construct a 4 bay slatted shed with a calf creep. Gross floor space of proposed works: 292.56 sqm	Grant Permission	23/08/2021
25/61637	to erect a 30m high telecommunications lattice structure together with antennas, dishes and associated telecommunications equipment all enclosed by security fencing	Grant Permission	17/02/2026

Table 5: Planning History Table – Immediate Environs of the Subject Site

4.3.1 Negative cumulative implications arising from the planning history in the vicinity

The planning history of the immediate environs of the subject site clearly demonstrates that the established pattern of development in the area is overwhelmingly rural, characterised by low-density residential dwellings, agricultural structures, and small-scale local facilities. The permissions identified are typical of a functioning rural landscape, comprising one-off housing, farm buildings, and modest community or recreational uses.

This established pattern is materially important in assessing the cumulative impact of the proposed development.

Firstly, the consistent grant of permission for dwellinghouses and agricultural development reflects the longstanding recognition of the area as a rural residential and farming landscape. The introduction of a large-scale, industrial gas-fired power plant within this context would represent a fundamental and abrupt departure from the established land use pattern. This gives rise to significant land-use conflict, particularly in terms of residential amenity, visual character, noise environment, and perceived safety.

Secondly, the proximity of multiple permitted and existing residential properties—evidenced by the extent of permissions for dwellinghouses in the vicinity—indicates a relatively high sensitivity of the receiving environment. The cumulative presence of these receptors increases the significance of potential impacts arising from the proposed development, including noise, air emissions, traffic, and major accident risk. Notably, there is no evidence within the EIAR of a robust cumulative assessment that fully considers the interaction between the proposed development and this established pattern of dispersed residential occupancy.

Thirdly, the planning history highlights the continued intensification of agricultural activity in the area, including significant farm buildings and associated infrastructure. The coexistence of such uses with a major industrial energy facility raises concerns regarding compatibility, particularly in relation to biosecurity, air quality (including deposition effects), and potential constraints on future agricultural operations.

Furthermore, the recent permission for a telecommunications structure (Reg. Ref. 25/61637) indicates an emerging layering of infrastructure within the area. While individually modest, such developments contribute incrementally to the changing character of the landscape. The addition of a large-scale peaker plant would significantly accelerate this transition, contributing to the gradual industrialisation of a traditionally rural area. Importantly, there is no precedent within the identified planning history for development of a comparable industrial scale, intensity, or risk profile. The proposed development would therefore represent a step-change in land use, rather than a continuation or logical extension of existing development trends.

In this context, the cumulative impact of the proposed development must be considered not only in terms of additive environmental effects, but also in terms of its transformative impact on the character, function, and amenity of the area. The EIAR fails to adequately assess this dimension of cumulative impact.

Accordingly, it is submitted that the proposed development would give rise to significant negative cumulative effects, materially altering the established rural character of the area, undermining residential amenity, and introducing an incompatible and intrusive form of development into a sensitive receiving environment.

5.0 Proposed Development

The proposed development comprises the construction of a natural gas-fired electricity generation facility (the "Cashla Peaker Plant") on a site of approximately 11.54 hectares at Pollnagroagh and Rathmorrissy, Athenry, Co. Galway. The development is designed to operate as a "peaking plant", providing electricity during periods of high demand and reduced renewable generation, with an anticipated operational duration of up to 31st December 2050.

The facility will operate primarily on natural gas, with dual-fuel capability allowing for the use of low sulphur diesel as a back-up fuel source in certain circumstances. The development constitutes a COMAH establishment and requires an Industrial Emissions Licence.

The proposed development consists of the following principal elements:

- **Construction of 1 no. open-cycle gas turbine (OCGT) and generator unit** (with an electrical output of c. 325–334MW), including an air intake filtration system, compressor, combustion system and turbine, together with a **30m high exhaust stack** and emissions monitoring equipment.
- **Provision of fuel storage and supply infrastructure**, including **2 no. above-ground diesel storage tanks** (each c. 11.1m in height) for secondary back-up fuel, together with fuel forwarding, unloading and associated fuel handling systems, and propane storage for turbine start-up.
- **Installation of electrical infrastructure**, including a **step-up transformer within a bund**, a unit auxiliary transformer, and associated switchgear and control equipment, to facilitate connection to the national grid.
- **Construction of c. 10 no. buildings and ancillary structures**, including:
    - 1 no. single-storey administration building (c. 390 sq.m),
    - 1 no. workshop building (c. 750.5 sq.m),
    - 1 no. electrical control building (c. 243.5 sq.m),
    - 1 no. water treatment plant building (c. 104 sq.m),
    - 1 no. ESB substation building (c. 32.5 sq.m),
    - 1 no. covered fuel unloading/forwarding area (c. 104 sq.m),
    - 1 no. boiler house kiosk (including flues c. 5.67m in height),
    - 1 no. gas analyser kiosk (c. 6.25 sq.m),
    - 1 no. pressure reduction kiosk (including vents c. 3.72m in height),
    - 1 no. electrical and instrumentation kiosk (c. 19 sq.m).
- **Installation of 5 no. above-ground tanks**, including:
    - fire and service water tank (c. 13m in height),
    - demineralised water tank (c. 15.4m in height),
    - demineralised waste tank (c. 5m in height),
    - and associated fuel storage tanks as described above.
- **Construction of gas handling and above-ground installation (AGI) infrastructure** to facilitate connection to the national gas network, including pressure reduction and gas control equipment.
- **Provision of auxiliary plant and systems**, including cooling systems, compressed air systems, gas handling skids, and emissions monitoring systems.
- **Construction of internal site infrastructure**, including access roads, circulation areas, hardstanding, and plant service areas.
- **Provision of site services and infrastructure**, including drainage systems, surface water attenuation, water treatment systems, lighting, fencing, boundary treatments, and landscaping works.
- **Construction of site access arrangements**, including a new vehicular entrance and internal road network.
- **All associated and ancillary works**, including utility connections, security infrastructure, and site preparation works.

- **It is noted that the overall project also includes a 220kV substation, underground grid connection, and gas transmission pipeline**, which are not part of this application and will be subject to **separate consenting processes**, notwithstanding that they form part of the overall project assessed in the EIAR.

Fig. 6: 3D View of the Proposed Development (Source: Application files, EIAR Volume 3 Appendix 6.1)

6.0 Technical, Administrative & Planning Law Concerns with the Application

This section identifies a number of technical, administrative and planning law concerns arising from the manner in which the application has been framed, described and assessed. These concerns are distinct from, but closely related to, the substantive environmental and planning objections set out elsewhere in this objection.

The documentation confirms that the overall Cashla project comprises four interdependent elements: the peaker plant, the GNI above-ground installation and gas pipeline, the ESB substation, and the underground grid connection. However, these elements are not being consented through a single unified application. Instead, the peaker plant and AGI are to proceed under a section 37E SID application, the electricity transmission infrastructure under a separate section 182B application, and the gas pipeline under a separate section 39A Gas Act process, notwithstanding the fact that the EIAR assesses the project as a single combined project. The EIAR further states that the project site extends to approximately 19.17 hectares, of which 11.54 hectares relates to the peaker plant site and 7.63 hectares relates to the grid connection and substation, with the grid route extending approximately 8.1 km along the L7109, L71093, L7108 and L3103 roads.

In these circumstances, it is submitted that the application gives rise to serious questions as to whether the development has been presented to the public and to An Coimisiún Pleanála in a sufficiently coherent, transparent and legally robust manner.

6.1 Fragmented consenting strategy and project splitting concerns

A central administrative concern with the present application is that the project is expressly acknowledged by the applicant and in the EIAR to be a single integrated project, yet it is being advanced through multiple separate statutory processes. The EIAR states that, for the purposes of environmental assessment, the Proposed Project has been assessed as a single, combined project, and that a single EIAR has been prepared accordingly. At the same time, it also states that the substation and underground grid connection will be the subject of a separate section 182B application, while the gas pipeline will be subject to a separate section 39A consent process.

That position gives rise to an inherent tension. On the one hand, the applicant relies on the integrated nature of the development in order to justify assessment of the overall project. On the other hand, the actual statutory application before the Commission does not encompass all of the infrastructure necessary to make the overall project operational. The peaker plant cannot function as intended without the associated gas connection and electricity transmission infrastructure. The fact that these elements are technically or legally interdependent is expressly acknowledged in the EIAR itself.

This creates a real risk that the Commission is being asked to determine one part of a wider project in circumstances where other essential elements remain outside the present application, subject to separate procedures, separate timelines and potentially separate conditions. While the applicant contends that this arises from the structure of the Planning and Development Act and the Gas Act, that does not remove the underlying planning concern: namely, that the public-facing statutory application does not correspond neatly with the project as environmentally assessed. The result is procedural complexity, reduced transparency, and a material risk of fragmented decision-making.

This fragmented approach also prevents a lawful and comprehensive assessment of cumulative greenhouse gas emissions arising from the interdependent elements of the project. As set out in the enclosed FP Logue Solicitors legal note supporting this appeal, the EIAR fails to provide sufficient information to enable the competent authority to assess compliance with Section 15(1) of the Climate Action and Low Carbon Development Act 2015, including alignment with carbon budgets and the national climate objective. In circumstances where the full emissions profile of the overall project cannot be properly assessed, the requirements of Article 5 of the EIA Directive are not met, and the integrity of the environmental assessment process is fundamentally undermined.

6.2 Inconsistency between the statutory application and the project assessed in the EIAR

Closely related to the above is the inconsistency between the development that is the subject of the present application and the wider project assessed in the EIAR.

The Planning Statement for the section 37E application describes the application site as 11.54 hectares and confirms that the proposed development is the natural gas-fuelled electricity generation plant with the AGI and associated on-site works. It simultaneously notes that the overall project also includes a 220 kV substation, underground grid connection and gas transmission pipeline, but states that these are not part of this application and will be subject to separate consenting processes.

By contrast, the EIAR repeatedly defines the "Proposed Project" as comprising all four main elements and states that the overall project site extends to 19.17 hectares. It further explains that the peaker plant will generate electricity for transmission via the proposed on-site 220 kV air-insulated substation to the Cashla substation, demonstrating the operational interdependence of the wider infrastructure.

This approach may be explained by the applicant as necessary from an EIA perspective, but from a planning law and public participation perspective it is problematic. The statutory application and the EIAR do not speak with one voice as to the scope of the "project" being presented for approval. The public is effectively required to navigate a situation in which:

- the current application covers only part of the overall development,
- the EIAR assesses a larger integrated project,
- the grid and gas infrastructure are essential to operation,
- and some of those elements are to remain in place beyond the peaker plant's proposed operational life to 31 December 2050.

That lack of alignment undermines clarity and makes it more difficult for affected parties to understand precisely what development is being authorised now, what is deferred, and what long-term infrastructure consequences arise from the current proposal.

6.3 Unclear landownership and consent position

A further administrative concern arises in relation to landownership and the evidential basis for legal interest in all lands affected by the overall project.

The letters of consent you have provided indicate consent from Francis and Mary Curran, Patrick and Caroline Forde, and Paddy Coffey in respect of lands within the townlands of Pollnagroagh and Rathmorrissy. Those letters are clearly relevant and appear to support the applicant's legal interest in certain privately owned lands required for the peaker plant site and associated development.

However, they do not, on their face, resolve the position in respect of all lands and corridors affected by the overall project, particularly the 8.1 km underground grid route running along public roads and the broader project area extending to 19.17 hectares. The EIAR itself identifies planning history entries where red-line boundaries associated with nearby developments are described as overlapping with public roads.

Given that the wider project includes infrastructure along the L7109, L71093, L7108 and L3103 road network, and given that the applicant is expressly relying on a combined project assessment, the legal basis on which all affected lands are included, crossed, or relied upon should be entirely clear from the application documentation. On the material presently available, that clarity is not evident.

It would therefore be prudent for the Commission to satisfy itself that:

- all lands within the red-line boundary of the present application are supported by the requisite ownership or consent documentation,
- the distinction between lands within the present section 37E application and lands within the separate 182B / 39A processes is fully transparent,

- and no part of the development currently before the Commission depends on land or road interests for which the applicant has not demonstrated a sufficient legal basis.

This is not a minor technicality. Where a project is promoted as a single integrated scheme but consent documentation is fragmented across multiple processes and land interests, the burden on the applicant to provide legal and cartographic clarity is correspondingly greater.

6.4 Deferral of critical consents, licences and third-party approvals

The documentation also confirms that a number of key consents, licences and approvals required to enable the development are not yet in place.

The EIAR states that the peaker plant will require an EPA Industrial Emissions Licence, and that the IE licence application is expected to be submitted in early 2027 and cannot be granted until planning is approved. It also identifies other required approvals including road opening licences, haulage permits, archaeological licences, abnormal load permits and the separate Gas Act and section 182B consents.

Similarly, the applicant's pre-application engagement with Galway County Council Roads Department established that abnormal load delivery is contingent on route feasibility, bridge capacity, engineering verification and third-party stakeholder coordination. Those issues were sufficiently serious that they formed a distinct strand of pre-planning technical engagement. As set out elsewhere in this objection, the applicant's responses to those concerns remain inadequate.

From a planning law perspective, there is a real distinction between:

- development details that can properly be conditioned post-permission, and
- matters going to the fundamental deliverability, environmental effects, or legal feasibility of the project.

In the present case, too many critical components of the project remain dependent on subsequent approvals, third-party agreements, or future regulatory processes. This includes not only abnormal load routing and road interventions, but the grid connection, gas connection, EPA licensing, and potentially further road opening and utility permissions. The cumulative effect is that the application is being advanced on the basis of a significant degree of future contingency.

6.5 Inadequate and unconvincing alternatives assessment

The EIAR contains a chapter on reasonable alternatives, including site location, plant technology, stack height, grid connection and access routes. It also expressly addresses the choice of open-cycle rather than combined-cycle technology, the project life span, and haul route options.

However, as already identified in the pre-application consultations, the alternatives case remains unconvincing. The Commission itself sought clarification on the rationale for the open-cycle technology, queried whether a direct route along the M6 had been considered for the grid connection, and required further scrutiny of haul routes and karst conditions. Galway County Council similarly sought the exploration of alternative access arrangements. Those requests are significant, because they demonstrate that concerns as to alternatives and site optimisation arose before the application was even lodged.

The problem is not merely that alternatives were discussed. It is that the applicant has not demonstrated, in a sufficiently transparent way, that the chosen development configuration represents the least environmentally harmful or most planning-appropriate solution. This is especially so where:

- the project is dependent on multiple separate consent processes,
- the road network is constrained,
- the landscape is sensitive,
- the site is underlain by karst limestone,
- and the selected layout necessitates associated gas and grid infrastructure extending well beyond the immediate plant site.

6.6 Administrative complexity and public participation concerns

The cumulative effect of the matters above is to create an application structure which is unusually complex and difficult for members of the public to interrogate.

The EIAR and Planning Statement require affected persons to understand the distinction between:

- the "Proposed Project" as assessed,

- the section 37E development currently before the Commission,
- the future section 182B electricity transmission application,
- and the separate section 39A gas pipeline process.

The public is also expected to understand that some infrastructure is integral to the current proposal but not yet before the Commission in statutory form, while the current application still relies on an EIAR that assesses all elements together. That is not a straightforward or accessible process. It risks diminishing meaningful public participation by obscuring the true scale, duration and interdependence of the full project.

This concern is heightened by the fact that the project includes substantial associated infrastructure outside the main 11.54-hectare site, including an 8.1 km underground cable route and a separate gas pipeline connection.

6.7 Absence of Operational Greenhouse Gas Mitigation

The EIAR expressly states (Volume 2, Section 8.7.2) that **"there are no specific measures proposed to mitigate the GHG emissions of the operational phase of the proposed project."** Despite this, annual emissions of approximately 21,000 tCO_2e are classified as "minor adverse" and "not significant."

This conclusion is not credible in the absence of any mitigation measures. The reliance on a "headroom" argument, expressing emissions as a percentage of national totals, does not constitute mitigation and is not a lawful basis for concluding no significant effect. Furthermore, EPA projections indicate that sectoral emissions ceilings are already under pressure, meaning no such headroom can be assumed.

In addition, the EIAR does not assess emissions associated with start-up, shut-down, or part-load operation, which are inherent to peaker plant functioning and typically result in higher emissions intensity. The assessment is therefore incomplete and materially understated.

6.8 Omission of AGI Boilers from Air Quality and GHG Assessment

The project description (EIAR Volume 2, p.91) includes a boiler house containing ten natural gas boilers forming part of the AGI installation. However, these combustion sources are not included in the air quality assessment (Chapter 7) or in the GHG inventory (Chapter 8).

The EIAR explicitly states that there are no other combustion sources with potential for significant effects, yet fails to account for these boilers, associated flues, or vent structures. This represents a clear internal inconsistency within the application.

Either the boilers have been excluded from assessment or screened out without a transparent or quantitative justification. In either case, the EIAR fails to assess the full extent of emissions arising from the proposed development, contrary to the requirements of the EIA Directive.

6.9 Mischaracterisation of Climate Law in Applicant Legal Submission

The applicant relies on a legal opinion submitted by Mason Hayes & Curran LLP to support the climate compliance of the proposed development. However, this interpretation is incomplete and materially misleading.

In particular:

- The decision in *Coolglass Wind Farm Ltd v An Coimisiún Pleanála* establishes the requirement for reasoned climate analysis, not any presumption in favour of fossil fuel development;
- The judgment in *Friends of Kilmoney v An Coimisiún Pleanála* clarifies that emitting developments must either be climate-neutral or clearly provided for within climate policy in a manner that enables a compatibility assessment — a test not met in this case;
- The UK Supreme Court decision in *R (Finch) v Surrey County Council* confirms that downstream combustion emissions must be assessed in EIA, which is directly relevant to a gas-fired plant operating to 2050.

Accordingly, general policy support for flexible gas generation does not remove the requirement for a project-specific demonstration of climate compliance, which has not been provided.

6.10 Absence of Section 53 Roads Act Consent and Road Safety Audit

The EIAR confirms that the proposed development requires two crossings beneath the M6 motorway via horizontal directional drilling. Such works require consent under Section 53 of the Roads Act 1993.

No evidence of such consent is included in the application. The Construction Traffic Management Plan merely refers to future engagement with Transport Infrastructure Ireland, which does not satisfy statutory requirements.

Furthermore, no independent Road Safety Audit has been submitted, notwithstanding the requirements of the Galway County Development Plan. Given that the motorway crossings and associated infrastructure are integral to the functioning of the development, the absence of statutory consent and safety assessment represents a significant deficiency in the application.

6.11 Unrealistic operational assumptions (100 Hours per year)

The EIAR adopts an operational assumption of 100 hours per year for the purposes of assessing climate, air quality, and noise impacts. This assumption has not been tested against the actual performance of comparable peaker plants in Ireland.

Publicly available EPA data indicates significantly higher operational hours at comparable facilities, including several hundred hours per annum. Other planning and licensing applications have modelled scenarios ranging from 500 to 1,800 hours or higher.

In the absence of sensitivity analysis across realistic operational scenarios, the EIAR materially understates potential impacts. The conclusions of "not significant" effects are therefore not robust.

6.12 Deficiencies in water services assessment and Natura 2000 pathway

The application does not include a coherent or consolidated water balance for the proposed development. Key parameters, including storage volumes and process water usage, vary across different documents and are not reconciled.

In addition, wastewater arising from the development is proposed to be discharged to Gort Wastewater Treatment Plant, which is recorded as non-compliant with emission limit values. No evidence has been provided to demonstrate capacity, compatibility, or acceptance of the proposed discharge.

Furthermore, the receiving environment is hydrologically connected to downstream Natura 2000 sites, including the Coole-Garryland Complex. This pathway has not been assessed within the EIAR or NIS, representing a significant omission.

6.13 Inadequate construction phase controls in karst environment

The EIAR proposes construction phase mitigation measures using non-committal language such as "as necessary" and "where practicable," which is not appropriate for a site underlain by a highly vulnerable karst aquifer.

Significant deficiencies arise in particular:

- The absence of disclosure of specific chemical compositions associated with stored substances, including biocides and treatment chemicals;
- Reliance on pH-based monitoring systems, which are not capable of detecting a wide range of contaminants;
- The use of underground storage for potentially hazardous materials in a karst environment, increasing the risk of undetected leakage and direct groundwater contamination.

The EIAR further acknowledges that additional hydrogeological assessment may be required post-consent, indicating that the assessment is not complete at application stage. In such circumstances, the risks associated with construction cannot be properly evaluated.

6.14 Failure to Assess Emissions from AGI Boilers

The EIAR fails to assess the full extent of greenhouse gas and air pollutant emissions arising from the proposed development, in that it does not include emissions from the ten on-site natural gas boilers associated with the AGI installation.

The project description (EIAR Volume 2, p.91) clearly identifies the presence of ten boilers forming part of the operational infrastructure. However, these combustion sources are not included in the air quality assessment (Chapter 7), nor are they accounted for in the greenhouse gas emissions inventory (Chapter 8). No quantitative justification is provided for their exclusion, nor is any screening assessment presented.

As a result, the EIAR does not assess the total emissions arising from the development as proposed. The emissions profile presented is therefore incomplete and materially understated.

This represents a failure to comply with the requirements of Article 5 and Annex IV of the EIA Directive, which require that the Environmental Impact Assessment Report identify, describe and assess the likely significant effects of the project, including emissions to air, based on the entirety of the development. The assessment of a partial emissions inventory is not sufficient to enable a lawful Environmental Impact Assessment.

In circumstances where not all emission sources within the development have been identified and assessed, the competent authority cannot reach a reasoned conclusion on the likely significant effects of the project on the environment.

Accordingly, the EIAR is deficient and does not provide an adequate basis for decision-making

6.15 Grid Connection, Landownership and Delivery Certainty

The grid connection forms an integral part of the proposed development; however, there is insufficient clarity regarding landownership, wayleaves, easements, and landowner consent along the full route. The EIAR does not demonstrate that all necessary rights have been secured, including for joint bays and associated infrastructure. Furthermore, the delivery of the grid connection appears to be dependent on future consents and agreements, creating uncertainty as to whether the project can be fully and lawfully implemented. In this regard, the assessment raises concerns in relation to project splitting and whether the grid connection has been fully and coherently assessed as part of the overall development.

6.16 Road Infrastructure, Traffic and Construction Route Impacts

The EIAR does not adequately assess construction traffic impacts along the full extent of the grid connection route, including cumulative and phased effects on residents, agricultural activity, and adjoining landowners. There is limited consideration of the characteristics of the local road network, including width, alignment, and visibility constraints, which may give rise to road safety concerns or necessitate upgrades not fully assessed. In addition, there is no clear evidence of road opening licences, Road Safety Audits, or other statutory requirements being addressed at application stage.

6.17 Interaction with Existing Services and Environmental Receptors

Insufficient detail is provided regarding potential interactions with existing services and utilities, including water infrastructure, telecommunications, and drainage networks. It is not demonstrated that adequate survey work has been undertaken to identify constraints or avoid service conflicts. Furthermore, the EIAR does not comprehensively assess environmental impacts along the full route, including impacts on hedgerows, drainage patterns, biodiversity, archaeology, and cumulative effects across multiple townlands.

6.18 Construction Footprint and Assessment Uncertainty

The extent of temporary landtake, including construction compounds, working areas, and access arrangements, is not clearly identified or assessed. The EIAR relies on deferred design, assumed parameters, and unspecified construction methodologies, introducing a significant degree of uncertainty into the Environmental Impact Assessment. This approach undermines the ability of the competent authority to fully evaluate likely significant effects at the time of decision-making.

6.19 Operational Assumptions and Permanency of Infrastructure

The proposed grid and gas infrastructure represent permanent development extending to 2050; however, the EIAR relies on limited operational assumptions, including low utilisation scenarios. There is no robust assessment of the potential for frequent or prolonged operation of the peaker plant, which would materially increase associated environmental impacts. The assessment therefore risks understating the long-term significance of the development.

6.20 Biodiversity and Tree Protection Concerns

The EIAR does not adequately address impacts on trees and vegetation along the route, including those identified in the Tree Survey (Appendix 5.3). Evidence of damage to boundary trees, including those within Group 1, indicates deficiencies in construction practices, supervision, and environmental protection measures. Trees have been subject to mechanical damage, structural imbalance, and dieback, increasing the risk of failure and impact on adjoining lands. This raises concerns regarding the reliability and enforceability of proposed mitigation measures.

6.21 Natura 2000, Groundwater and Scientific Certainty

The conclusions of the Natura Impact Statement are not supported by sufficient scientific certainty, having regard to the presence of a groundwater dependent terrestrial ecosystem (GWDTE) within the site, directly connected to the Galway Bay Complex SAC. The site is underlain by an Rkc karst aquifer, characterised by rapid conduit flow, high vulnerability, and minimal attenuation capacity. Groundwater pathways connect to multiple European sites, yet the assessment relies on limited data, with no tracer testing and elements of the hydrogeological

assessment deferred. In these circumstances, it has not been demonstrated, beyond reasonable scientific doubt, that the proposed development will not adversely affect the integrity of European sites, contrary to the requirements of Article 6(3) of the Habitats Directive, as interpreted in cases such as *Waddenzee* and *Sweetman*.

6.22 Conclusion

For the reasons set out above, the application gives rise to serious technical, administrative and planning law concerns.

In summary:

- the overall development is expressly acknowledged to be a single integrated project, yet is being advanced through multiple separate statutory consent routes;
- the statutory application and the EIAR project description are not fully aligned as to the scope of development being considered;
- the currently available landowner consent material appears limited to certain private lands and does not, on its face, resolve the full legal-interest position arising from the wider project and associated road-based infrastructure;
- a substantial number of critical consents, approvals and licences remain deferred; and
- the overall consenting strategy creates unnecessary complexity and undermines transparency and effective public participation.

Accordingly, it is submitted that the application documentation does not provide a sufficiently clear, coherent and legally robust basis upon which the Commission can confidently determine the present application in isolation from the wider project of which it forms part.

7.0 Grounds for Objection

It is submitted to An Coimisiún Pleanála that there are very serious concerns with the proposed development and its potential impact on the residential amenities of our clients' properties, on the safety of the local road network, and on the local area. Our clients consider the key issues to be set out below.

7.1 Ground 1: The Principle of the Development is not Accepted

It is submitted that the proposed development is not acceptable in principle at this location, having regard to the provisions of the Galway County Development Plan 2022–2028, the characteristics of the receiving environment, and the requirements of proper planning and sustainable development.

While the applicant asserts that the principle of the development is established by virtue of its location within the Oranmore–Athenry Strategic Economic Corridor (SEC), its proximity to existing electricity and gas infrastructure, and its alignment with national and regional energy objectives, this position represents an overly simplistic and selective interpretation of the relevant policy framework.

The acceptability of development in an unzoned rural area is not determined solely by reference to strategic designations or infrastructure proximity, but must instead be assessed on the basis of a holistic evaluation of site suitability, environmental constraints, and the potential for adverse impacts on residential amenity and human health. In this regard, the County Development Plan is clear that support for infrastructure development is expressly qualified, and contingent upon the protection of environmental quality, landscape, and residential amenity.

As set out in the sections that follow, the proposed development gives rise to significant concerns in respect of its proximity to established residential receptors, the intensity and nature of the development, and the potential for adverse impacts across multiple environmental pathways. These matters are not peripheral considerations, but go to the core question of whether the development is appropriate at this location.

Accordingly, it is submitted that the applicant has failed to demonstrate that the principle of the proposed development is acceptable, and that the reliance on high-level policy support, in the absence of a robust assessment of site-specific constraints, is fundamentally flawed.

7.1.1 Misinterpretation of strategic economic corridor (SEC) policy

The applicant places significant reliance on Policy Objective EL2 of the Galway County Development Plan, which seeks to support the Oranmore–Athenry Strategic Economic Corridor as a location for nationally and regionally significant activities, including infrastructure which may not be appropriate within or in close proximity to centres of population.

Policy EL 2 states:

In relation to the Strategic Economic Corridor the Planning Authority will take steps to:

- *Reserve lands to support nationally and regionally significant activities and to attract specialist enterprise development that is large scale of high value;*
- *Facilitate opportunities for employment and technology-based uses;*
- *Ensure that development is compatible with the enhancement, preservation and protection of the environment and cultural resources recognised within the corridor;*
- *Identify sites of adequate size and location to accommodate necessary infrastructure or support activities which would not be appropriate in proximity to centres of population or sensitive environments or environmentally sensitive economic activities;*

However, it is submitted that this policy has been misinterpreted and misapplied in the context of the proposed development.

Firstly, Policy Objective EL2 does not provide blanket support for all forms of infrastructure within the Strategic Economic Corridor. Rather, it requires that such development be accommodated on sites of **appropriate size and location**, having regard to the nature of the development and the characteristics of the receiving environment. The policy must therefore be read as **conditional and criteria-based**, rather than permissive.

Secondly, the applicant's reliance on the phrase "*which would not be appropriate in proximity to centres of population*" is misplaced. This provision does not imply that such development is automatically appropriate in rural or unzoned areas. On the contrary, it reflects the need to carefully site such infrastructure in locations where it will not give rise to adverse impacts on sensitive receptors, including residential properties and community facilities.

In the present case, the evidence presented within the EIAR demonstrates that the site is not removed from sensitive receptors, but is instead located within an established rural residential environment. As identified in Table 4-16 of the EIAR, a substantial number of dwellings are located within close proximity to the site, including a significant concentration within 250 metres and several within 20 metres, together with a range of other sensitive receptors in the wider area, including educational and healthcare facilities. This is illustrated visually in Fig. 7 below.

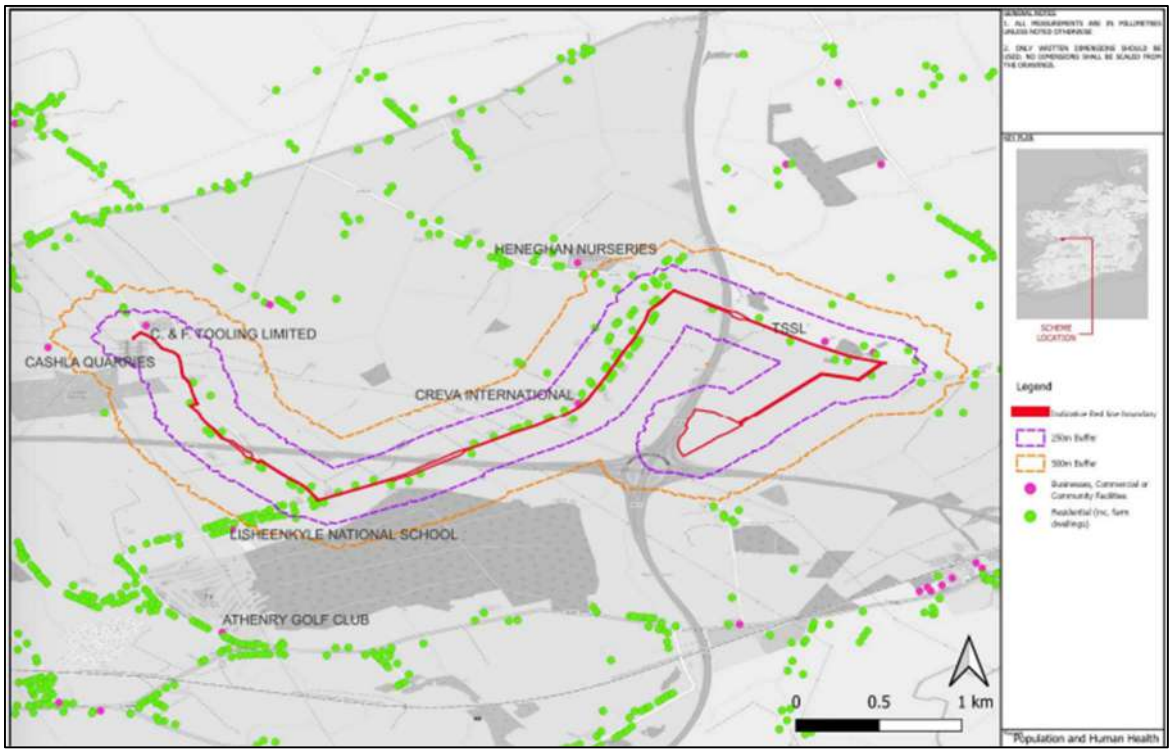


Fig. 7: Population and human health receptor (Source: Figure 4-4, EIAR)

In this context, the site cannot reasonably be characterised as being "*away from centres of population*" in any meaningful planning sense. The presence of a dispersed rural population does not diminish sensitivity; rather, it gives rise to a pattern of development where individual dwellings are highly susceptible to localised impacts.

Furthermore, Policy Objective EL2 must be read in conjunction with other provisions of the County Development Plan, including those relating to environmental protection and residential amenity. In particular, Policy Objective

EG2 supports the delivery of electricity and gas infrastructure *"**subject to environmental quality, landscape, wildlife, habitats, and residential amenity**."* These are not secondary considerations, but fundamental criteria which must be satisfied in order for development to be considered acceptable.

The applicant's interpretation of the Strategic Economic Corridor designation fails to engage with these qualifying provisions and instead seeks to elevate the policy to a form of strategic justification for development at this location. This approach is not supported by the wording or intent of the Development Plan.

Accordingly, it is submitted that the reliance on Policy Objective EL2 as establishing the acceptability of the proposed development in principle is misplaced. When properly interpreted, the policy does not support the siting of a large-scale combustion-based energy facility in close proximity to residential receptors, and the proposed development is therefore contrary to the proper application of the County Development Plan.

7.1.2 Site is not remote and is characterised by a high density of sensitive receptors

A central premise underpinning the applicant's justification of the proposed development is that the site is suitably located "away from centres of population" and therefore appropriate for a development of this nature. This assertion is not supported by the evidence contained within the EIAR and represents a mischaracterisation of the receiving environment. The EIAR clearly establishes that the subject site is located within a settled rural landscape, characterised not by isolation, but by a pattern of dispersed one-off housing and established residential clusters. While the area may not constitute a defined urban centre, it nevertheless contains a significant number of sensitive receptors within close proximity to the site.

As set out in Chapter 4 of the EIAR, a detailed inventory of sensitive receptors within the study area has been undertaken. These receptors are spatially illustrated in Fig. 7 (EIAR Figure 4-4). The data presented in Table 4-16 clearly demonstrates that the receiving environment is characterised by a high density of sensitive receptors in close proximity to the site, most notably:

- **82 no. residential properties located within 250 metres of the site boundary**;
- A further **29 no. residential properties located within 250–500 metres** of the site;
- **Zero separation between the development and the surrounding residential environment in planning terms**, notwithstanding that no dwellings fall within the red line boundary itself;

In addition to the above, the EIAR identifies a range of sensitive community and social receptors within the immediate and wider study area, including:

- **Lisheenkyle National School**, located approximately **3.4 km from the site**;
- **Athenry Primary Care Centre**, located approximately **2.9 km to the east**;
- **Athenry Association Football Club and Athenry Athletics Club**, located approximately **2 km from the site**;
- **Carnuan GAA pitch** approximately **2.44km to the north**;
- **Athenry Golf Club** located approximately **3.4km to the southwest**;
- **Church of the Assumption**, located approximately **3.5 km to the east**; and
- Established local businesses and employment uses in close proximity, including those immediately adjacent to the study area.

The presence of 82 dwellings within 250 metres alone is particularly significant and wholly inconsistent with any characterisation of the site as being remote or removed from sensitive receptors. On the contrary, this level of residential proximity is indicative of a densely settled rural landscape, where receptors are highly exposed to potential environmental effects arising from the proposed development.

Furthermore, the EIAR confirms that the site is located approximately 2 km west of Athenry, thereby forming part of a wider settled and functionally connected hinterland, rather than an isolated rural location.

Accordingly, the evidence before the Commission clearly demonstrates that the subject site is receptor-rich rather than remote, and that the applicant's reliance on the absence of a defined settlement boundary to characterise the site as suitable for large-scale energy infrastructure is fundamentally misplaced.

Importantly, the EIAR further confirms the presence of sensitive community receptors in proximity to the site, including Lisheenkyle National School located approximately 0.6 km from the proposed development. The identification of an educational facility within such proximity is of particular significance in the context of air quality, noise, and human health considerations.

The applicant also acknowledges that the site is located approximately 2 km west of Athenry, a designated settlement within the County Development Plan.

This proximity further undermines any suggestion that the site is remote or isolated in planning terms, and instead confirms that it forms part of a wider settled and functionally connected hinterland.

Furthermore, while the EIAR describes the area as "relatively rural" with a "limited range of built assets", this characterisation must be considered in context.

The absence of dense urban form does not equate to an absence of sensitivity. On the contrary, dispersed rural housing patterns give rise to a situation where individual dwellings are often located in close proximity to proposed development sites, with limited buffering or screening, thereby increasing susceptibility to adverse effects.

In this regard, the Planning Authority and An Bord Pleanála have consistently recognised that rural dwellings are not less sensitive receptors by virtue of their location. The expectation of a high standard of residential amenity applies equally in rural areas, and in many cases is heightened due to the generally low baseline levels of noise, light, and air pollution.

The evidence presented within the EIAR therefore clearly demonstrates that the subject site is receptor-rich rather than remote. The applicant's reliance on the absence of a defined settlement boundary or zoning designation to characterise the site as suitable for large-scale energy infrastructure is fundamentally flawed.

Accordingly, it is submitted that the proposed development is not located in an area that can reasonably be described as "away from centres of population" or free from sensitive receptors. On the contrary, it is located within an established residential environment where the potential for adverse impacts on human health and amenity is both real and significant.

7.1.3 Industrialisation of a rural area

It is submitted that the proposed development represents a significant and inappropriate industrialisation of a rural landscape, which is fundamentally at odds with the existing character of the area and the established pattern of development.

The receiving environment, as described within the EIAR, is characterised as a "relatively rural area" with a dispersed settlement pattern comprising one-off housing, agricultural lands, and limited localised commercial activity.

This is not an area that has an established industrial or energy generation character, nor is it one that has been identified for such intensive forms of development.

Notwithstanding this, the proposed development comprises a large-scale, combustion-based energy facility, incorporating substantial built infrastructure, including:

- Large industrial buildings and plant structures of significant height and massing;
- Emission stacks and associated flue infrastructure;
- Extensive areas of hardstanding, lighting, and operational plant; and
- Continuous and intermittent operational activity, including start-up and shut-down events.

The scale, form, and operational characteristics of the proposed development are inherently industrial in nature, and bear no relationship to the existing rural context in which they are proposed to be located.

This results in a clear and fundamental land-use incompatibility, whereby an intensive industrial use is being introduced into an area characterised by low-density residential and agricultural uses. Such a transition cannot be regarded as incremental or sympathetic; rather, it constitutes a step-change in the character of the area.
The impacts of this industrialisation are not limited to visual considerations, but extend across multiple environmental pathways, including:

- **Air quality impacts**, arising from combustion emissions and associated plume dispersion;
- **Noise and vibration**, particularly during peak operation and start-up events;
- **Lighting and visual intrusion**, including night-time effects in an otherwise dark rural environment; and
- **Perceived and actual impacts on human health and amenity**, particularly for nearby residents and sensitive receptors.

In this regard, it is important to note that rural environments are typically characterised by low baseline levels of noise, light, and air pollution, such that the introduction of an intensive industrial use can result in disproportionately significant effects when compared to urban or industrial locations.

Furthermore, the applicant's reliance on the Strategic Economic Corridor designation to justify this level of development fails to recognise that such designations do not override the fundamental requirement to ensure that development is compatible with its receiving environment.

The County Development Plan does not support the indiscriminate siting of large-scale industrial infrastructure within rural areas, particularly where such development would adversely affect residential amenity and environmental quality. Rather, policy support for infrastructure is expressly conditional, and must be considered in the context of site-specific constraints and sensitivities.

In the present case, the introduction of a large-scale gas-fired power plant into a receptor-rich rural area represents a clear overdevelopment of the site and a misalignment between land use and location.

Accordingly, it is submitted that the proposed development would result in the industrialisation of a rural area, giving rise to unacceptable impacts on the character of the landscape and the amenity of existing residents, and is therefore contrary to the proper planning and sustainable development of the area.

7.1.4 Infrastructure proximity does not equate to site suitability

The applicant places significant reliance on the proximity of the site to existing strategic infrastructure, including the Cashla 220kV Substation and the Galway–Mayo Gas Transmission Pipeline (BGE/85), in order to justify the suitability of the proposed development at this location.

While it is acknowledged that access to existing electricity and gas infrastructure is a relevant planning consideration, it is submitted that the applicant has afforded this factor disproportionate weight, and has incorrectly presented infrastructure proximity as determinative of site suitability.

In this regard, proximity to infrastructure is only one element of a broader site selection and planning assessment. It does not, in and of itself, establish that a site is appropriate for large-scale industrial development, nor does it override the requirement to ensure that development is compatible with its receiving environment.

The Planning Statement asserts that the availability of grid and gas connections allows for efficient integration of the proposed development without the need for extensive off-site infrastructure. However, this represents a technical and operational advantage, rather than a land-use planning justification.

Critically, no evidence has been presented to demonstrate that the subject site represents the most appropriate location for the proposed development when considered against alternative sites that may offer:

- Greater separation distances from residential receptors;
- Lower environmental sensitivity; and
- A more established industrial or infrastructural character.

Instead, the applicant's approach appears to have been driven primarily by engineering convenience, rather than a robust assessment of environmental capacity or land-use compatibility.

This approach is inconsistent with the principles of proper planning and sustainable development, which require that infrastructure projects of this scale be plan-led and site-appropriate, rather than opportunistically located based on existing connections.

Furthermore, the reliance on infrastructure proximity fails to engage with the clear evidence of receptor sensitivity in the surrounding area, as outlined in Sections 7.1.1 and 7.1.2 above. The presence of a substantial number of residential dwellings within close proximity to the site fundamentally undermines any argument that the site is suitable for intensive energy infrastructure, regardless of its connection to the gas and electricity networks.

It is also noteworthy that the existence of strategic infrastructure within an area does not, in itself, confer an industrial zoning or designation, nor does it imply that surrounding lands are appropriate for further industrialisation. To suggest otherwise would set an undesirable precedent whereby the presence of linear infrastructure (such as pipelines or transmission lines) could be used to justify the incremental expansion of incompatible land uses into rural and residential areas.

In this context, the applicant's reliance on infrastructure proximity represents a misapplication of planning principles, whereby a secondary consideration is elevated to a primary justification.

Accordingly, it is submitted that the proximity of the site to existing gas and electricity infrastructure does not render the site suitable for the proposed development, and that this factor cannot outweigh the significant concerns identified in respect of residential amenity, environmental sensitivity, and land-use compatibility.

7.1.5 Failure to properly assess reasonable alternatives

It is submitted that the Environmental Impact Assessment Report (EIAR) fails to provide an adequate, transparent and reasoned assessment of reasonable alternatives, as required under the EIA Directive and associated Irish legislation. The consideration of alternatives is a central component of the EIA process and must demonstrate that the proposed development represents the most appropriate option having regard to environmental constraints, land-use compatibility and the protection of sensitive receptors. In this instance, the assessment presented is limited in scope, constrained in geographic extent, and lacking in any meaningful comparative analysis.

The EIAR states that a number of potential site options were identified and assessed by BGE, TLI and AtkinsRéalis, as illustrated in Figure 3-3, comprising lands north of Carrowmoneash, a broad area extending across Carnmore and Lissarulla to Cashla, lands east of Ballymoneen at Grange East, and lands along the M6 corridor between Derrydonnell and the M6/M18 interchange. While presented as a site selection exercise, this process is, in substance, a high-level constraint mapping exercise confined to a pre-defined geographic area in the immediate hinterland of Galway City. No justification is provided for the limitation of the study area, and there is no evidence that alternative locations outside this narrow corridor were considered.

Fig. 8: Selected site option for the proposed project (Source: Figure 3-3, EIAR)

The methodology adopted relies heavily on a desktop review of environmental constraints, including datasets from NPWS, EPA, GSI and other sources. While appropriate as an initial screening tool, this approach does not extend to a structured or evidence-based comparison of sites. There is no indication that the identified options were assessed against consistent criteria, nor that any weighting or balancing of environmental, social or land-use factors was undertaken. The absence of any comparative framework means that the process does not demonstrate why the selected site is preferable, or whether it represents the least environmentally damaging option.

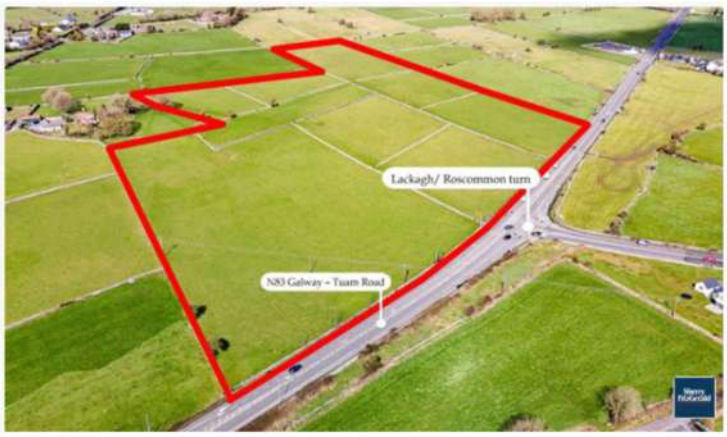
The deficiencies in this approach are further illustrated by the manner in which identified constraints have been applied. The EIAR identifies a range of constraints affecting alternative sites, including ecological sensitivities, karst limestone, archaeological features and proximity to designated sites. However, there is no evidence that these same constraints have been applied consistently or rigorously to the selected site. In effect, constraints appear to have been used selectively to exclude alternatives, rather than as part of a balanced and objective site appraisal.

Constraint Identified in EIAR	Basis for Excluding Alternative Sites	Applicability to Selected Site	Observations
Archaeological feature (ring-barrow east of Galway Airport)	Site discounted due to presence of recorded monument and potential archaeological sensitivity	**Yes** – wider archaeological landscape and potential subsurface archaeology present within the area	Archaeological constraint applied selectively; no equivalent precautionary approach demonstrated for the subject site
Proximity to European Sites (Galway Bay Complex SAC)	Sites near Deerpark Industrial Estate excluded due to potential for adverse effects on designated conservation sites	**Yes** – hydrological and ecological connectivity pathways exist within the wider receiving environment	Precautionary principle applied to alternatives but not consistently applied to the selected site
Limestone pavement / potential Annex I habitat	Sites excluded where limestone pavement identified, with potential to qualify as Annex I habitat	**Yes** – site located within a karst limestone region with known hydrogeological sensitivity	Karst and habitat sensitivity acknowledged elsewhere but not treated as a constraint in site selection
COMAH / Seveso context (Oranmore)	Presence of COMAH facility identified as a constraint in alternative locations	**Yes** – proposed development itself introduces major accident hazard potential (Seveso-type risk)	Inconsistency in approach; existing risk used to exclude sites, but creation of new risk not treated as constraint
Existing utilities / services (Gas, water, electricity)	Sites without access to infrastructure discounted	**Yes** – availability of infrastructure is primary justification for selected site	Infrastructure availability given disproportionate weight relative to environmental and land-use constraints
EPA licensed facilities / industrial clustering	Identified in Oranmore as a contextual factor	**No** – subject site located in rural, non-industrial setting	Sites within established industrial contexts discounted, while rural greenfield site selected
Biodiversity datasets (NPWS, NBDC, wetlands, bat data etc.)	Used to identify ecological sensitivities and constrain site options	**Yes** – same datasets indicate ecological receptors and networks in the subject area	No evidence of comparative evaluation or weighting of ecological constraints
Watercourses and water quality (EPA data)	Identification of hydrological features as constraints	**Yes** – site connected to local watercourses and groundwater systems	Hydrological risk not used as determining constraint in final site selection

Table 6: Constraints identified in alternatives vs applicability to selected site

This comparison demonstrates that the selection of the subject site has not emerged from a consistent or objective assessment of environmental constraints. Instead, the evidence suggests that proximity to existing infrastructure has been afforded disproportionate weight, while factors such as residential amenity, environmental sensitivity and land-use compatibility have not been adequately considered.

Furthermore, the EIAR does not engage with the availability of alternative sites beyond those identified within its limited study area. It is notable that, at the time of writing, a number of sites of comparable scale are actively available for development within the wider region, including lands with greater separation from residential receptors and, in some instances, more appropriate land-use contexts.



Lands At, Peake, Claregalway, Co Galway

€300,000

25.45 ac · Site

Hazelhill, Ballyhaunis, Co. Mayo

€60,000

8.5 ac · Site

Gortdrishagh, Derrymoyle, Oughterard, Co. Galway

AMV: €120,000

19.42 ac · Site

C.24 acres Harefield, Claremorris, Co. Mayo

€275,000

24 ac · Site

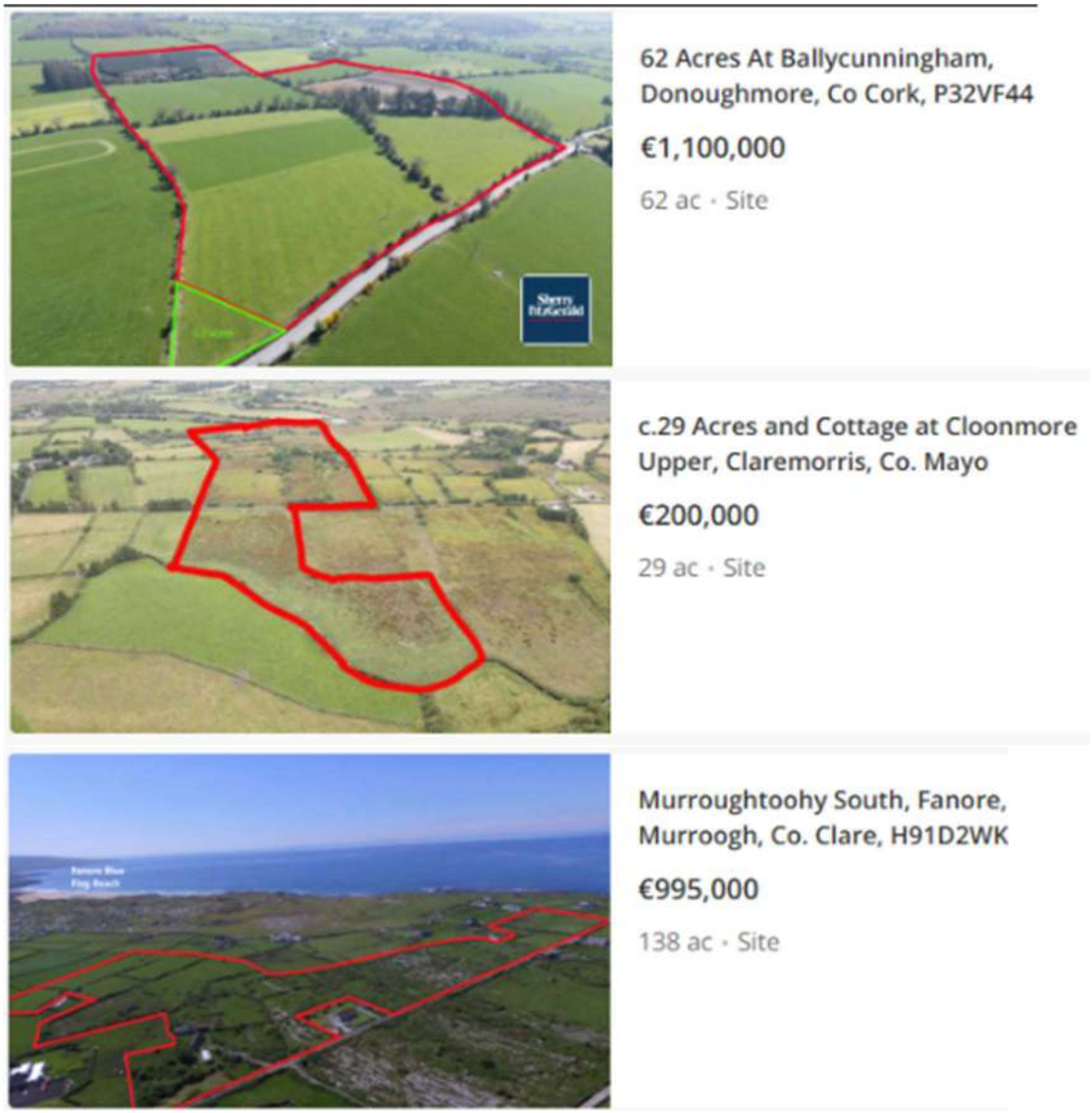


Fig. 9: Numerous sites listed for sale, which at a high level overview could have been considered under this application as a reasonable alternative (Source: Daft.ie)

The above examples, while illustrative only, demonstrate that alternative lands exist which could reasonably have been considered as part of a compliant alternatives assessment. The absence of any engagement with such sites further reinforces the conclusion that the site selection process was artificially constrained and not undertaken on a comprehensive or objective basis.

In this regard, the structure and content of the EIAR suggests that the selection of the subject site was effectively predetermined. The alternatives assessment does not present a genuine evaluation of options, but rather a retrospective justification of a preferred location, with infrastructure availability emerging as the dominant factor. While proximity to gas and electricity networks is a relevant consideration, it cannot, in itself, override the need to demonstrate environmental suitability or compatibility with surrounding land uses.

The consequence of this approach is that the EIAR fails to demonstrate that the proposed development avoids or minimises impacts on sensitive receptors, achieves appropriate separation distances, or is located within an area of suitable character. This is particularly significant given that the EIAR itself confirms that the site is located within a rural, receptor-rich environment.

Furthermore, the assessment of alternatives does not include any meaningful comparative analysis of greenhouse gas emissions across alternative sites, technologies, or configurations. The EIAR does not quantify or compare lifecycle emissions, emissions intensity, or cumulative climate impacts over the operational lifetime of the development. As set out in the enclosed FP Logue Solicitors legal note supporting this appeal, this omission represents a failure to comply with Article 5 of the EIA Directive, which requires the assessment of reasonable alternatives having regard to environmental effects, including climate change. In the absence of such analysis, the competent authority cannot determine whether the proposed development represents a climate-compliant or least-harm option. The EIAR does not provide sufficient information to enable the

competent authority to determine whether the proposed development complies with its statutory obligations under Section 15(1) of the Climate Action and Low Carbon Development Act 2015. In particular, there is no assessment of the compatibility of the proposed development with carbon budgets, sectoral emissions ceilings, or the national climate objective. This represents a fundamental deficiency in the EIAR, as the competent authority cannot lawfully grant permission in the absence of sufficient information to demonstrate compliance with these binding climate obligations.

Having regard to the foregoing, it is submitted that the assessment of reasonable alternatives is inadequate, lacks transparency, and does not comply with the requirements of the EIA Directive. The failure to undertake a robust and evidence-based site selection process represents a fundamental deficiency which undermines the integrity of the environmental assessment as a whole and prevents the competent authority from reaching a properly informed conclusion on the acceptability of the proposed development at this location.

7.1.6 SEVESO risk context and land-use compatibility

The applicant states that the proposed development will constitute a **lower-tier SEVESO site** and asserts that its location outside a defined settlement centre renders it appropriate in land-use planning terms.
It is submitted that this interpretation is fundamentally flawed.

The designation of a development as a SEVESO site, even at lower-tier level, reflects the presence and storage of hazardous substances and the associated potential for **major accident hazards**, including fire, explosion, and uncontrolled releases. The purpose of the SEVESO Directive is not to facilitate such development, but to ensure that it is **carefully controlled and appropriately sited**, having regard to the protection of human health and the environment.

In this regard, the key planning principle arising from the SEVESO framework is the requirement to maintain **appropriate separation distances between hazardous installations and sensitive land uses**, including residential properties, schools, and community facilities.

The applicant's reliance on the absence of a defined urban centre in proximity to the site fails to engage with this core requirement. As established in Sections 7.1.1 and 7.1.2 above, the receiving environment is characterised by a **significant number of residential receptors in close proximity to the site**, including a substantial concentration of dwellings within 250–500 metres, as well as sensitive receptors such as educational and healthcare facilities.

In such a context, the introduction of a SEVESO-classified development gives rise to an inherent **land-use compatibility issue**, irrespective of whether the site is formally located within or outside a settlement boundary.

Furthermore, best practice in land-use planning for hazardous installations emphasises the importance of avoiding the co-location of such development with existing residential communities, particularly where the potential consequences of accidental events, however low in probability, may be severe in nature.

The EIAR does not provide a robust assessment of how the SEVESO status of the development has informed site selection, nor does it demonstrate that alternative sites with greater separation from sensitive receptors were considered. This omission is particularly significant in light of the identified receptor density in the surrounding area.
It is also noted that the presence of vulnerable receptors, including children attending nearby educational facilities and older persons within the rural community, further increases the sensitivity of the receiving environment in the context of major accident risk.

Accordingly, it is submitted that the classification of the proposed development as a SEVESO site reinforces, rather than mitigates, the need for a **precautionary and plan-led approach to site selection**, which prioritises adequate separation from sensitive receptors.

In the present case, the proximity of a large number of residential dwellings to the site indicates that this fundamental requirement has not been met.

Therefore, the proposed development gives rise to a clear **land-use compatibility conflict**, and is contrary to the principles of proper planning and sustainable development.

7.1.7 Conclusion

Having regard to the foregoing, it is submitted that the proposed development is not acceptable in principle at this location and fails to accord with the proper planning and sustainable development of the area.

The applicant's justification for the development is overly reliant on high-level policy support, the Strategic Economic Corridor designation, and proximity to existing infrastructure. However, as demonstrated throughout

this section, these factors have been **misinterpreted, overstated, and applied in isolation**, without due regard to the specific characteristics and sensitivities of the receiving environment.

In particular, the evidence clearly establishes that the site is **not remote**, but is instead located within a receptor-rich rural area characterised by a significant number of residential dwellings and community facilities in close proximity. The introduction of a large-scale, combustion-based energy facility in such a context would result in the **industrialisation of a rural landscape**, giving rise to clear land-use incompatibility and unacceptable risks to residential amenity and human health.

Furthermore, the applicant's reliance on proximity to gas and electricity infrastructure as justification for the chosen site is fundamentally flawed. While such proximity may offer operational efficiencies, it does not constitute an adequate planning rationale. There must be **more to site selection than technical convenience or financial benefit to the developer**. The location of strategic energy infrastructure must be informed by a robust, plan-led approach that prioritises environmental protection, appropriate separation from sensitive receptors, and long-term sustainability. To suggest otherwise would imply that such developments could be located wherever infrastructure happens to exist, which is clearly not consistent with established planning principles.

The failure to undertake a meaningful assessment of reasonable alternatives further undermines the applicant's position, as it has not been demonstrated that this site represents the most appropriate or least environmentally sensitive option.

Finally, the proposed development does not satisfy the qualifying criteria of the County Development Plan, including the requirement that infrastructure be delivered **subject to the protection of environmental quality and residential amenity**, nor does it appropriately address the implications of its SEVESO classification in a receptor-rich environment.

Accordingly, it is submitted that the proposed development is inappropriate in principle at this location, and that permission should be refused.

7.2 Ground 2: Deficiencies in the Population and Human Health chapter (EIAR) and cumulative impacts to vulnerable receptors

Chapter 4 of the Environmental Impact Assessment Report (EIAR) (pp. 173–238) purports to assess the likely significant effects of the proposed development on population and human health. While the chapter identifies a range of potential impact pathways, including air quality, noise, traffic, and major accident hazards, it is submitted that the assessment is fundamentally deficient, both in its methodological approach and in its consideration of the receiving environment.

In particular, the assessment is unduly limited in scope, overly reliant on compliance with regulatory threshold values, and fails to adequately assess the combined, long-term, and site-specific effects on human health. This is especially significant in the context of the proximity of sensitive receptors, including a substantial number of residential dwellings and community facilities located within close proximity to the proposed development.

The EIAR adopts a largely siloed, topic-by-topic approach, relying on separate technical chapters (air quality, noise, traffic) and concluding that, where guideline values are not exceeded, no significant effects on human health will arise. However, this approach does not constitute a robust or holistic human health assessment as required under the EIA Directive. It fails to meaningfully address:

- the interaction between multiple environmental stressors;
- cumulative and repeated exposure over time;
- the heightened sensitivity of vulnerable population groups; and
- and the potential for adverse effects under worst-case or atypical operating conditions.

Furthermore, while the EIAR acknowledges that human health effects may arise through environmental pathways, it does not provide a sufficiently detailed or precautionary assessment of how these pathways may interact or compound, nor how such effects may manifest over the full operational lifetime of the development.

This omission is particularly significant given the nature of the proposed development as a combustion-based peaker plant, which is characterised by intermittent operation, variable emission profiles, and the potential for elevated emissions during start-up and peak demand periods. The assessment does not adequately address how such operational characteristics may influence real-world exposure patterns for nearby receptors.

In addition, insufficient regard is given to the specific characteristics of the receiving environment, including the receptor-rich rural setting, the presence of vulnerable populations such as children and older persons, and the potential for exposure across multiple pathways including air, noise, traffic, and light.

Accordingly, it is submitted that Chapter 4 of the EIAR fails to provide a robust, evidence-based, and precautionary assessment of human health impacts, and does not provide a sufficient basis upon which to conclude that the proposed development will not give rise to significant adverse effects on population and human health.

7.2.1 Sensitivity of receiving environment

The EIAR acknowledges the presence of residential and community receptors within the vicinity of the proposed development; however, it is submitted that the **extent, sensitivity, and significance of these receptors are materially understated**, and that the methodology adopted to define the study area is unduly restrictive and not reflective of best practice.

Figs. 10 and 11 below identify and spatially map the receptors considered within the EIAR "study area", which is defined as extending to a radius of approximately 500 metres from the site boundary. As set out in Table 4-16 of the EIAR, this includes a substantial number of residential properties, with **82 dwellings identified within 250 metres** of the site boundary and a further **29 dwellings within 250–500 metres**, in addition to a range of sensitive community receptors, including:

- **Lissheenkyle National School**, located approximately **0.6 km from the site**;
- **Athenry Primary Care Centre**, located approximately **2.2 km to the east**; and
- Recreational and community facilities, including local sports clubs and places of worship within the wider area.

Table 4-16 - Receptors within Study Area

Receptor	Within Project Boundary (count)	Within 250m of Project Boundary (count)	250m – 500m of Project Boundary (count)	Closest identified (if none within 500m of Project Boundary)
Residential Properties (including farm dwellings)	0	82	29	N/A
Community Facility	0	0	0	Athenry Association Football Club and Athenry Athletics Club approximately 0.8 km east
Place of Worship	0	0	0	Church of the Assumption approximately 2.5 km east.
School	0	0	0	Lisheenkyle National School approximately 0.6 km west.
Nursery/Creche	0	0	0	None identified within the Study Area but should any be identified they would fall under effects identified for residential properties/community facilities.
Health Care Facility	0	0	0	Athenry Primary Care centre approximately 2.2 km east
Walking/cycling route	0	0	0	There are likely to be undesignated walking trails in Toberroe Woods, adjacent to the Study Area in the south. Nearest National Trail identified (EuroVelo 1 Ireland - Atlantic Coast Route) is over 6 km south west
Bus/Railway Station	0	0	0	Galway Bus Station, over 13 km west Athenry Train Station, approximately 2.5 km east
Local Business / Commercial (excluding agricultural buildings / farms)	0	• C. & F. Tooling Limited • Coffey Construction • Creva International • Coshla Quarries	• Coshla Quarries	Tribal Foods / Heneghan Nurseries, adjacent to the Study Area in the north

Fig. 10: Receptors identified within the study area. (Source: Table 4-16, EIAR)

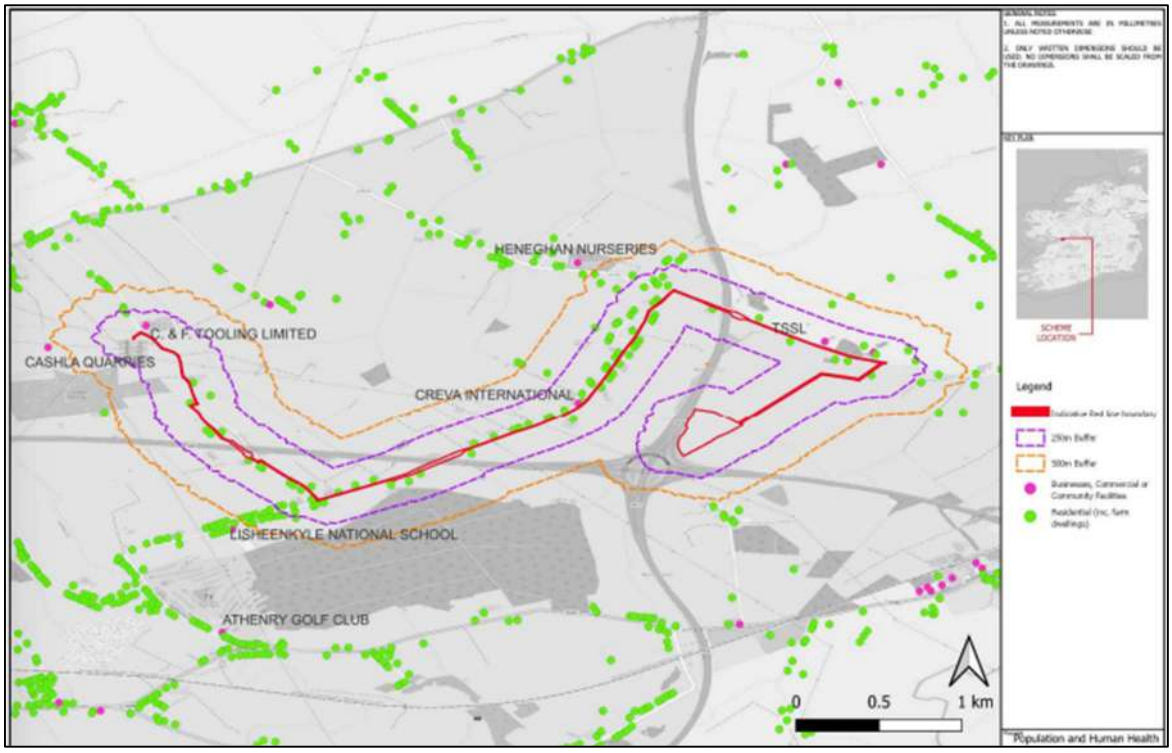


Fig. 11: Population and human health receptor. (Source: Figure 4-4, EIAR)

The presence of **82 dwellings within 250 metres alone** is highly significant and indicative of a **receptor-rich environment**, where residents are likely to experience direct and sustained exposure to any environmental effects arising from the proposed development.

Notwithstanding this, it is submitted that the adoption of a **500 metre study area is inadequate** and results in an underestimation of the true extent of the receiving environment. By way of comparison, other planning guidance documents, including the Dublin City Development Plan, require the assessment of community and social infrastructure within a **minimum radius of 750 metres**. While not directly applicable, such standards provide a clear indication of accepted good practice in defining an appropriate study area.

The limitation of the study area to 500 metres is particularly problematic in the context of a **rural setting**, where receptors are more dispersed and where the zone of influence for emissions, noise, and other environmental effects may extend well beyond this radius. The application of a more limited study area in a rural context, as compared to larger radii typically applied in urban areas, is contrary to logic and results in a failure to fully characterise the receiving environment.

Furthermore, the EIAR does not adequately consider the presence of **vulnerable population groups**, including children attending nearby educational facilities and older persons residing within the surrounding rural community. It is well established that such groups are more susceptible to the adverse effects of environmental stressors, including air pollution, noise, and disturbance. However, the EIAR does not provide a **differentiated or receptor-specific assessment**, nor does it meaningfully account for their increased sensitivity.

Accordingly, it is submitted that the EIAR fails to adequately characterise both the **extent and sensitivity of the receiving environment**, thereby undermining the reliability of the subsequent impact assessment and conclusions in respect of population and human health.

7.2.1.1 Inadequate separation distances from residential receptors

The proposed peaker power plant gives rise to significant concern by reason of its proximity to established residential receptors and community facilities. As identified within the EIAR (Table 4-16), a substantial number of dwellings are located in close proximity to the site, including approximately 82 dwellings within 250 metres and a further 29 dwellings within 250–500 metres of the site boundary. In addition, sensitive receptors such as Lissheenkyle National School, located approximately 0.6 km from the site, together with healthcare and community facilities within the wider receiving environment, further increase the sensitivity of the area.

Despite the scale and nature of the proposed development, the EIAR does not provide a robust or evidence-based justification for the siting of a combustion-based energy facility in such close proximity to residential receptors. In particular, no minimum separation distance, buffer strategy, or siting rationale is identified, nor is

there any meaningful consideration of alternative layouts or sites that might increase separation distances and reduce potential impacts.

While there is no specific Irish guidance prescribing separation distances for peaker plants or gas-fired power stations, this does not diminish the importance of proximity as a key planning consideration. On the contrary, it requires that the suitability of the site be clearly demonstrated having regard to the sensitivity of nearby receptors and the capacity of the receiving environment to accommodate the proposed development.

It is a well-established principle of proper planning that the acceptability of industrial or energy infrastructure cannot be determined solely by reference to compliance with environmental limit values. The spatial relationship between a development and nearby receptors is a fundamental consideration. Where development is proposed in close proximity to residential dwellings, a precautionary approach is required, and particular regard must be had to the intensity, frequency, and duration of potential effects.

In the present case, the close proximity of residential properties creates a scenario in which receptors may be subject to multiple environmental stressors arising from the development, including emissions to air, intermittent operational noise, increased traffic movements, artificial lighting, and the potential for accidental events such as fire or explosion. These effects are likely to be experienced cumulatively and repeatedly over the operational lifetime of the facility. The operational characteristics of peaker plants further intensify these concerns. Such facilities are characterised by intermittent operation and rapid start-up, which may give rise to short-term but elevated emission events and fluctuating noise profiles. The EIAR does not adequately assess how these characteristics interact with the proximity of receptors, nor does it consider the implications of repeated exposure over time.

Furthermore, the EIAR adopts a predominantly compliance-based approach, concluding that impacts are not significant where individual environmental parameters fall within established limits. This approach is fundamentally flawed. Compliance with limit values does not equate to the absence of impact, particularly where receptors are located within a few hundred metres of the source. Proximity materially increases both the likelihood and the perception of effects, and must therefore be treated as a central determinant of impact significance. In the absence of a clearly articulated siting rationale, and having regard to the receptor-rich rural context of the site, it has not been demonstrated that the proposed development is appropriately located. The failure to provide adequate separation distances, or to justify the absence of such separation, represents a material deficiency in the EIAR and undermines the overall acceptability of the proposal.

Accordingly, it is submitted that the proposed development, by reason of its proximity to residential and community receptors, would give rise to an unacceptable impact on residential amenity and human health, and would therefore be contrary to the principles of proper planning and sustainable development.

7.2.2 Multi-pathway exposure

The EIAR adopts a largely compartmentalised approach to the assessment of human health, whereby individual environmental factors—such as air quality, noise, traffic, and other emissions—are assessed separately and are subsequently deemed acceptable where compliance with relevant standards is demonstrated. It is submitted that this approach is fundamentally flawed and does not reflect the manner in which environmental effects are experienced in reality.

In practice, receptors in proximity to the proposed development would be subject to simultaneous and cumulative exposure to multiple environmental stressors, including air pollutant emissions, noise, traffic movements, artificial lighting, and vibration. These pathways do not occur in isolation; rather, they interact and may give rise to combined and synergistic effects on human health and residential amenity, including sleep disturbance, stress-related impacts, annoyance, and reduced quality of life.

Notwithstanding this, the EIAR does not provide a meaningful assessment of these interrelationships or cumulative exposure pathways, instead relying on a compliance-based approach which assumes that adherence to individual standards equates to an absence of significant effects. This is inconsistent with established EPA guidance and the requirements of the EIA Directive, which require the assessment of combined effects and interactions between environmental factors.

The following subsections therefore consider the principal exposure pathways arising from the proposed development, having regard to the proximity and sensitivity of identified receptors.

7.2.2.1 Long term exposure to air pollutants and health risk

The EIAR identifies air quality as a principal pathway through which the proposed development may impact on human health, noting that emissions associated with the operation of the peaker plant will include combustion-related pollutants such as nitrogen oxides (NOx), carbon monoxide (CO), sulphur dioxide (SO_2) and particulate matter (PM_{10} and $PM_{2.5}$). As outlined in the Air Quality Chapter, these emissions arise from gas and back-up liquid fuel combustion within turbine units and are inherently linked to the operational characteristics of peaking plants,

which are designed to operate intermittently during periods of peak demand and are characterised by frequent start-up and shut-down cycles.

The Air Quality Chapter relies on atmospheric dispersion modelling to predict ground-level concentrations at identified receptors, concluding that predicted concentrations will comply with relevant EU ambient air quality limit values and that, on this basis, no significant adverse effects will arise. Chapter 4 of the EIAR adopts these findings directly in its assessment of human health.

It is submitted that this approach is **overly reliant on compliance-based thresholds** and does not constitute a robust assessment of human health effects. In particular, the EIAR implicitly assumes that compliance with statutory limit values equates to the absence of health risk. This assumption is not supported by current scientific evidence or national policy guidance.

The Environmental Protection Agency has confirmed that ***"there's no completely safe level of air pollution… even low levels can still harm our health over time".*** Furthermore, while Ireland currently meets EU legal limit values, the EPA has made clear that these standards do not align with the more stringent, health-based guidelines established by the World Health Organization. Accordingly, compliance with regulatory standards cannot be equated with the absence of risk.

A substantial body of scientific evidence demonstrates that long-term exposure to pollutants such as nitrogen dioxide (NO_2) and fine particulate matter ($PM_{2.5}$) is associated with adverse health outcomes, including respiratory illness, cardiovascular disease, and premature mortality, even at relatively low concentrations. This is reflected in national data indicating that approximately 1,700 premature deaths occur annually in Ireland as a result of air pollution. Notwithstanding this, the EIAR does not adequately assess the implications of chronic exposure over the operational lifetime of the development, nor does it consider the potential for incremental increases in pollutant concentrations to contribute to cumulative health burdens.

In addition, the Air Quality Chapter adopts a modelling approach based on a series of assumptions regarding emission rates, operating hours, and meteorological conditions. However, insufficient consideration is given to real-world operational variability, particularly in relation to:

- elevated emissions during **start-up and shut-down phases**, which are acknowledged to produce higher emission rates than steady-state operation;
- **intermittent but intensive operation patterns**, characteristic of peaker plants; and
- and the potential for **non-routine or maintenance-related emissions**.

The modelling presented does not clearly demonstrate that these scenarios have been fully incorporated into a robust **worst-case assessment**, nor does it adequately assess the implications of repeated short-duration emission events over time.

The baseline receiving environment is also of critical importance. EPA monitoring data indicates that air quality in the Galway region is generally classified as "good" under the Air Quality Index for Health (AQIH), as illustrated in Fig. 12. In such circumstances, the receiving environment is of relatively high quality and therefore **particularly sensitive to deterioration**. The introduction of a new emissions source, even where predicted concentrations remain within regulatory limits, represents a measurable degradation of baseline conditions. The EIAR does not adequately consider this sensitivity, nor does it assess the implications of incremental change within a clean baseline environment.

Fig. 12: Baseline air quality in Galway and the subject site. (Source: EPA data [https://airquality.ie/])

Furthermore, the AQIH framework explicitly links pollutant concentrations with health effects and provides targeted health advice for both the general population and vulnerable groups. As shown in Fig. 13, even within

categories that are not classified as "poor", health-based advice is triggered for at-risk groups, including children, older persons, and individuals with respiratory conditions. This demonstrates that health effects may arise **well below regulatory limit values**, a factor not adequately addressed in the EIAR.

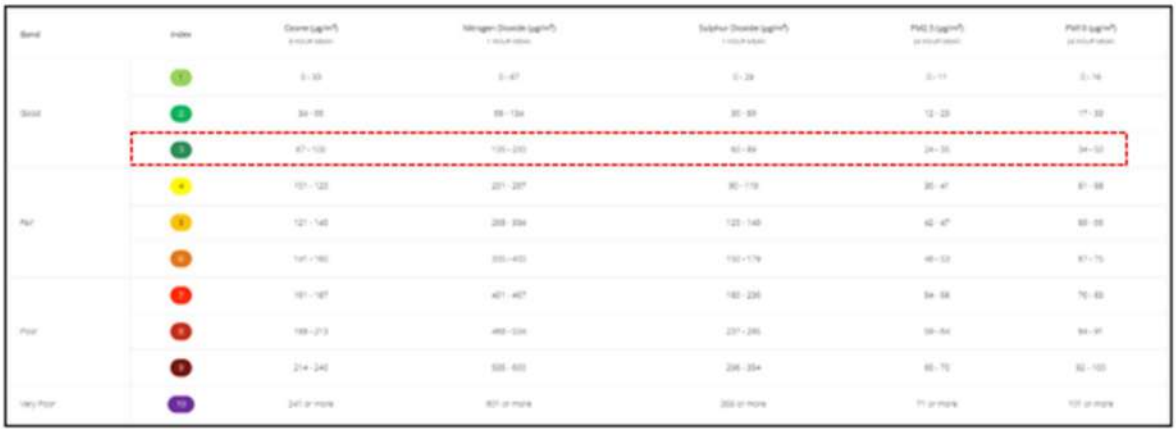


Fig. 13: AQIH Index and Health Advice Table. (Source: EPA)

Fig. 15: AQIH Index and Health Advice Table. (Source: EPA)

Moreover, the EIAR does not adequately consider the potential for adverse dispersion conditions, including periods of low wind speed or atmospheric stability (e.g. temperature inversions), during which pollutants may accumulate at ground level in proximity to receptors. While the modelling is based on standard meteorological datasets, there is no clear demonstration that worst-case dispersion scenarios have been sufficiently examined in the context of nearby residential receptors.

In addition, the assessment does not meaningfully consider indoor exposure pathways. In modern residential environments, particularly in newer or retrofitted dwellings, increased airtightness and reliance on mechanical ventilation systems can result in external air pollutants being drawn into internal living spaces. The omission of this pathway represents a further limitation in the assessment of actual human exposure.

The EIAR also fails to adequately address cumulative exposure, both in terms of interaction with existing background pollutant levels and the cumulative effects arising from repeated operational cycles over time. This is particularly significant having regard to the proximity of residential properties and the presence of sensitive receptors.

Furthermore, the proposed operational lifespan of the development, likely extending over several decades, is not meaningfully assessed in terms of its implications for long-term human exposure. The EIAR relies primarily on short-term modelling outputs and annual mean concentrations, without adequately addressing how recurrent exposure over time may give rise to chronic health effects.

International evidence reinforces the significance of this issue. A 2022 report by Clean Energy Group and Strategen (*The Peaker Problem*) found that populations living in proximity to peaker plants are exposed to pollutants including NOx, SO_2, and $PM_{2.5}$, with associated increases in asthma, cardiovascular disease, and premature mortality. While derived from urban contexts, the underlying principle is directly applicable: **proximity combined with repeated exposure over time gives rise to cumulative health risk**, irrespective of compliance with individual emission limits.

In the context of the proposed development, nearby residents would be subject to recurrent exposure over many years. The EIAR does not adequately assess how incremental pollutant loading over time may contribute to a progressive deterioration in health outcomes, particularly for vulnerable population groups.

Accordingly, it is submitted that the EIAR fails to provide a sufficiently robust, evidence-based, and precautionary assessment of the potential for adverse human health effects arising from long-term exposure to air pollutants associated with the proposed development. In particular, the failure to properly assess the lifetime exposure profile, including cumulative, worst-case, and real-world operational scenarios, represents a material deficiency. The reliance on compliance-based conclusions does not provide a sufficient basis to conclude that significant adverse effects on human health will not arise over the operational lifespan of the development and is inconsistent with both EPA guidance and the requirements of the EIA Directive.

7.2.2.2 Air pollution and meteorological conditions (Galway wind context)

In addition to the proximity and sensitivity of receptors, the meteorological context of the site is of critical relevance. As illustrated in Fig. 16 below, the SEAI Wind Atlas indicates that the subject site is located within an area characterised by relatively high average wind speeds (approximately 9–9.7 m/s), reflecting its exposure to prevailing Atlantic weather systems.

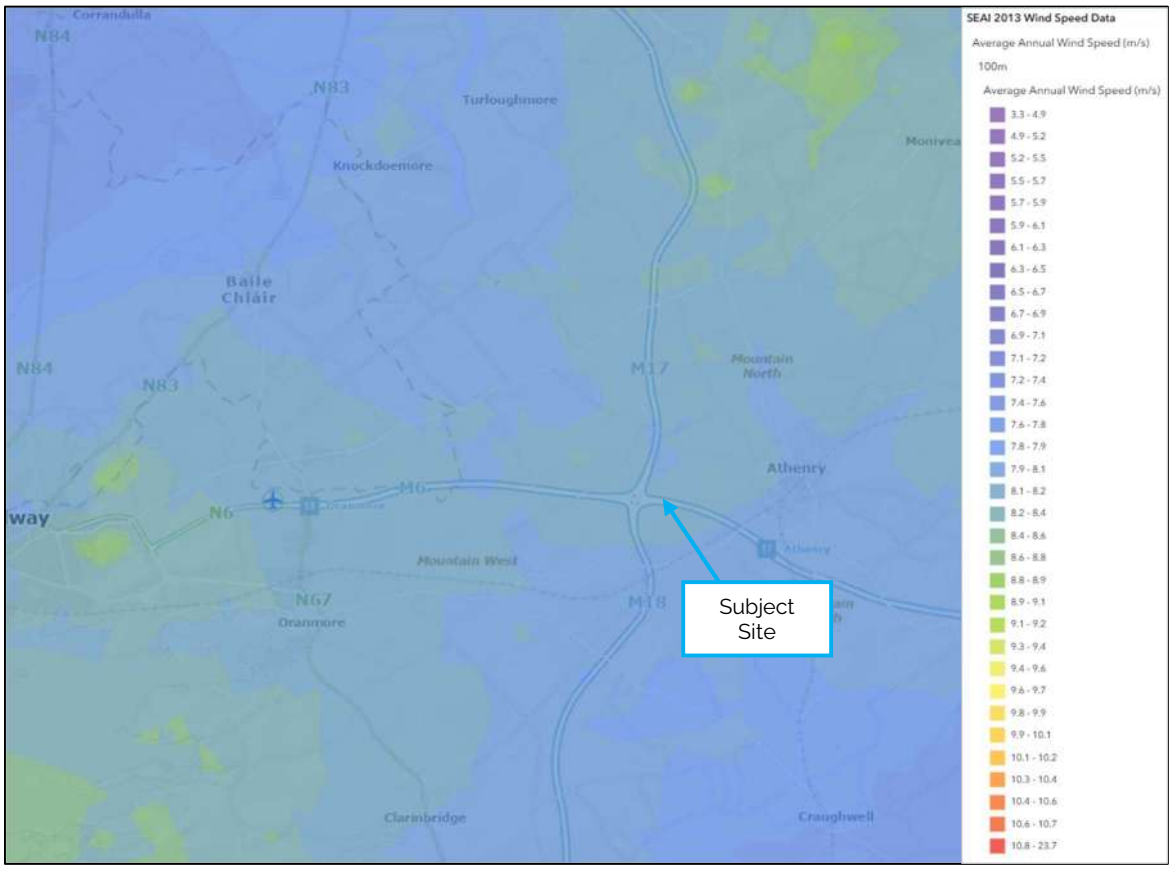


Fig. 16: SEAI Wind Atlas Map, subject site annotated (Source: https://maps.seai.ie/apps/WindAtlas/)

This baseline is further reinforced by analysis of Met Éireann wind warning data, which demonstrates that **Galway has experienced the highest number of wind warnings of any county in Ireland between 2020 and 2025**, with approximately 234 separate wind warning events recorded over this period.

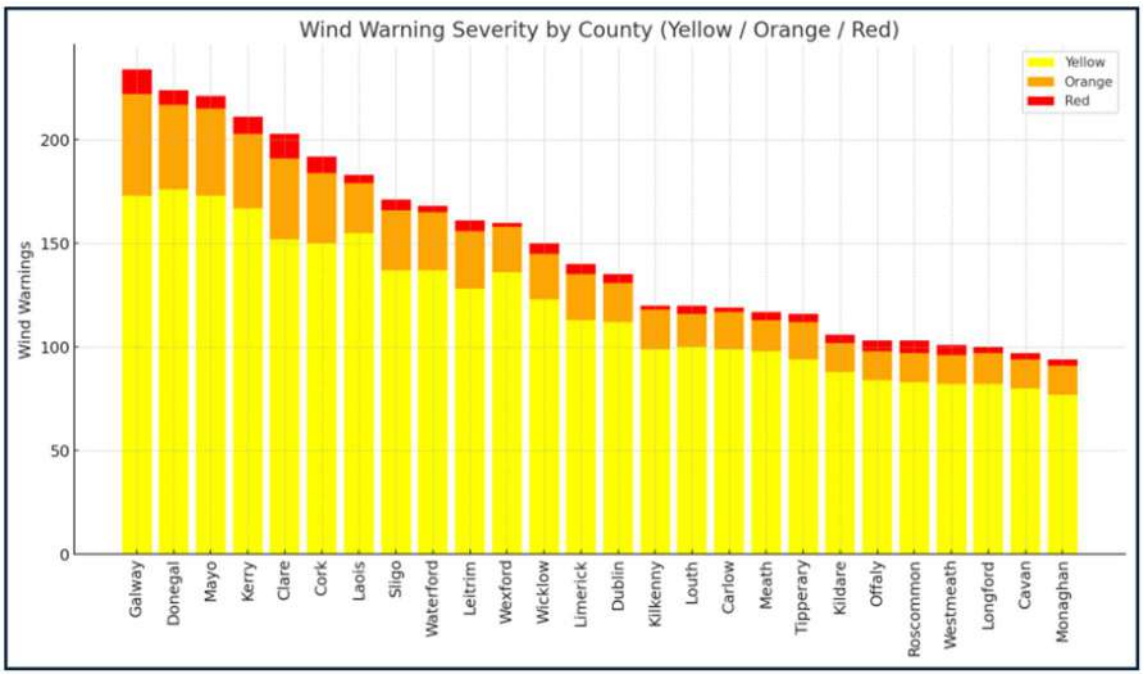


Fig. 17: Chart of quantity of wind warnings by county since 2020 (Source: Based on Met Eireann data [https://www.mapalerter.ie/blog/met-eireann-severe-weather-galway-wind-2025])

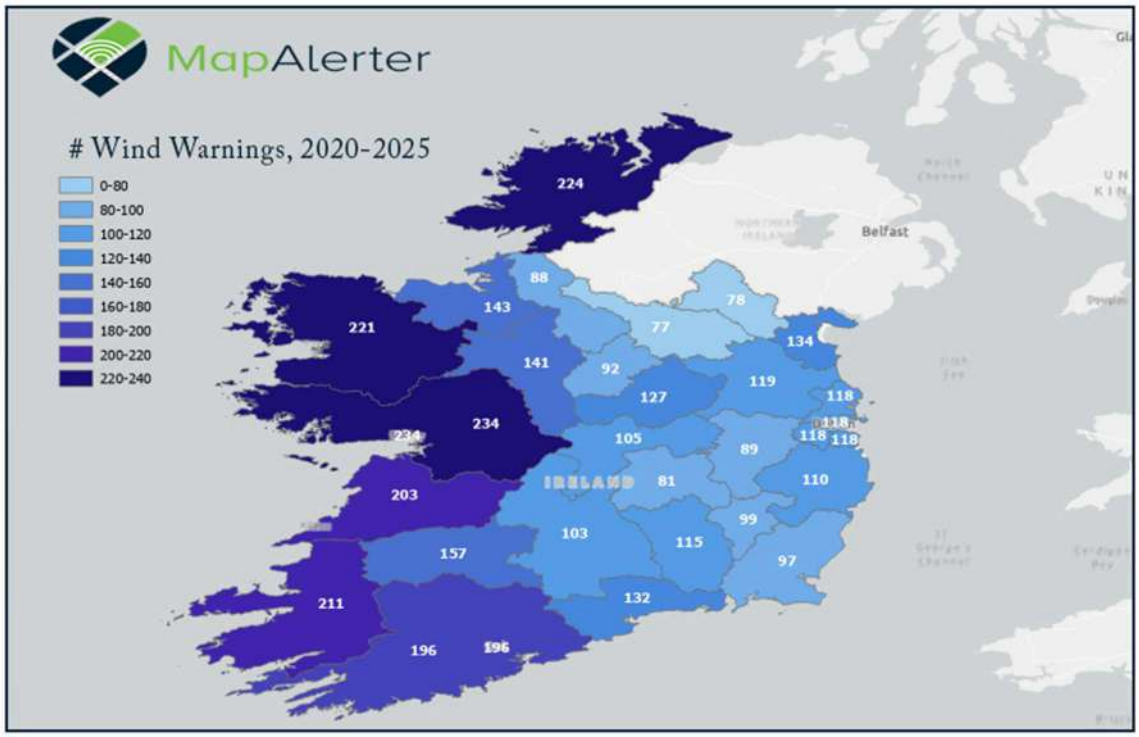


Fig. 18: Visualisation of wind warnings by county since 2020 (Source: Based on Met Eireann data [https://www.mapalerter.ie/blog/met-eireann-severe-weather-galway-wind-2025])

The frequency and intensity of wind events in Galway is directly attributable to its geographic position on the Atlantic seaboard, where weather systems make landfall with limited obstruction. This results in conditions where:

- strong prevailing winds can transport emissions over considerable distances;
- local topography may channel and accelerate wind flows; and
- storm events may give rise to highly variable and unpredictable dispersion patterns.

In such circumstances, the potential for emissions to extend beyond the artificially constrained 500 metre study area is clear. The EIAR does not adequately address this interaction between meteorological conditions and receptor exposure, nor does it assess the implications for receptors located beyond the defined study area.

The practical implications of these conditions are evident from the scale of alerts issued by Galway County Council during storm events, as illustrated in Fig. 18 above, which demonstrates the widespread geographic extent of wind-related impacts and the necessity for coordinated emergency response measures. This provides a real-world indication of the **exposure and vulnerability of the receiving environment**.

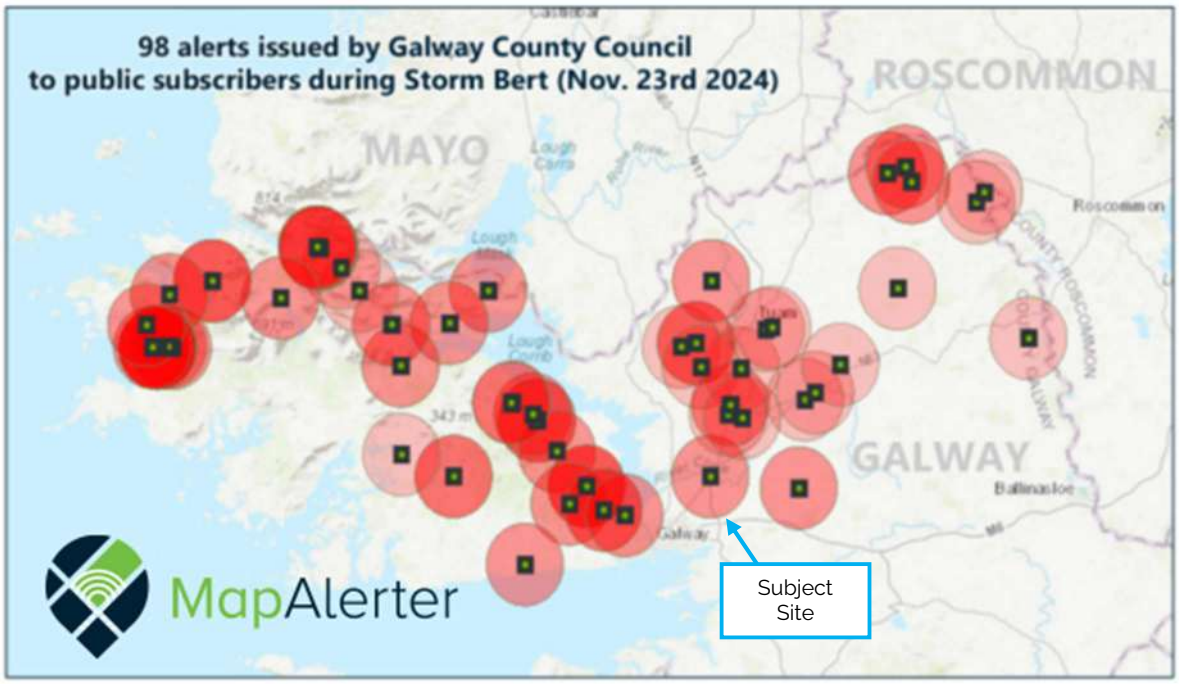


Fig. 19: Extent of alerts issued by Galway County Council during Storm Bert (November 23rd 2024) only (Source: https://www.mapalerter.ie/blog/met-eireann-severe-weather-galway-wind-2025)

Having regard to the above, it is submitted that the EIAR fails to adequately characterise:

- the full extent of residential and community receptors;
- the presence and sensitivity of vulnerable population groups; and
- the influence of prevailing meteorological conditions on the dispersion of emissions and associated exposure pathways.

The combined effect of these deficiencies is a material underestimation of the potential for adverse impacts on human health and residential amenity. In particular, the interaction of proximity, receptor sensitivity, and prevailing wind conditions gives rise to a scenario in which emissions, noise, and disturbance may affect a wider population than that considered within the EIAR.

Accordingly, the assessment presented is neither robust nor precautionary and does not provide a sufficient basis to conclude that the proposed development will not give rise to significant adverse effects on nearby residents and vulnerable population groups.

7.2.2.3 Emissions from operational phases

The EIAR identifies that the proposed development will give rise to emissions associated with combustion processes, including nitrogen oxides (NOx), carbon monoxide (CO), sulphur dioxide (SO_2), and particulate matter (PM_{10} and $PM_{2.5}$). These pollutants are well established as having adverse effects on human health, particularly in relation to respiratory and cardiovascular systems.

However, it is submitted that the EIAR does not adequately characterise emissions arising across the full range of operational scenarios, and instead places undue reliance on modelled emissions under standard or steady-state operating conditions.

In the context of a peaker plant, this represents a critical deficiency. Such plants are inherently designed to operate intermittently, responding rapidly to fluctuations in electricity demand, and are characterised by frequent start-up and shut-down cycles, as well as variable load conditions. These non-steady-state phases are widely recognised as giving rise to elevated, less controlled, and more variable emissions.

In particular, start-up phases—especially from cold or warm conditions—are associated with:

- incomplete combustion and reduced efficiency;
- elevated emissions of NOx, CO, and unburnt hydrocarbons; and
- transient spikes in pollutant concentrations prior to stabilisation of combustion conditions.

Similarly, shut-down phases and load fluctuations may give rise to irregular emission profiles, while maintenance and testing events can also result in atypical emission patterns.
Notwithstanding this, the EIAR does not provide a sufficiently robust or transparent assessment of:

- **short-duration, high-intensity emission events**, which may give rise to acute exposure at nearby receptors;
- **emission variability across different operational phases**, including start-up, shut-down, and partial load operation;
- **non-routine or abnormal operating conditions**, including maintenance, testing, or system failures.

The reliance on averaged or steady-state emission rates, as presented in the Air Quality Chapter, risks masking the potential significance of transient emission events, which, while short in duration, may result in disproportionately high ground-level concentrations, particularly in proximity to sensitive receptors.

In addition, insufficient consideration is given to the presence of secondary and trace pollutants arising from combustion processes. These may include:

- volatile organic compounds (VOCs);
- ozone precursors contributing to secondary pollutant formation;
- polycyclic aromatic hydrocarbons (PAHs) and other by-products of incomplete combustion.

Such pollutants, while not always the primary focus of regulatory assessment, are recognised as contributing to cumulative air quality impacts and associated health risks, particularly in the context of repeated exposure.

Furthermore, the interaction between operational variability and meteorological conditions is not adequately explored. Intermittent high-emission events occurring under unfavourable dispersion conditions (e.g. low wind speeds or atmospheric stability) may result in localised pollutant accumulation, a scenario not clearly addressed within the EIAR.

Having regard to the above, it is submitted that the EIAR does not adequately characterise the true emissions profile of the proposed development. The absence of a detailed assessment of transient, variable, and non-routine emission scenarios represents a material limitation, and undermines the reliability of the subsequent air quality and human health impact assessments.

Accordingly, the EIAR does not provide a sufficiently robust basis upon which to conclude that emissions arising from all operational phases of the proposed development will not give rise to significant adverse effects on human health, particularly in the context of nearby residential receptors.

7.2.2.4 Ground-level concentrations and receptor exposure

The EIAR relies on atmospheric dispersion modelling to predict ground-level concentrations of pollutants and concludes that impacts will not be significant where predicted concentrations remain within applicable air quality standards. However, it is submitted that this approach does not adequately reflect the complexity and variability of real-world conditions, particularly when considered alongside the operational characteristics of the proposed development and the prevailing meteorological environment.

Ground-level pollutant concentrations are inherently influenced by a range of factors, including wind speed and direction, atmospheric stability, emission characteristics, and local topography. As outlined in Section [X], the receiving environment is characterised by high average wind speeds and frequent storm events, which may give rise to highly variable dispersion patterns. In such conditions, there is potential for both:

- the **transport of pollutants over wider distances**, extending beyond the defined study area; and
- **localised accumulation of pollutants** under specific atmospheric conditions, including periods of low wind speed, calm conditions, or temperature inversions.

Notwithstanding this inherent variability, the EIAR does not provide a sufficiently robust assessment of worst-case dispersion scenarios, nor does it adequately demonstrate that short-term peak concentrations at receptor locations have been fully characterised.

Of particular concern is the reliance on modelled average concentrations (including annual and hourly means), which may obscure the occurrence of short-duration concentration spikes arising from transient emission events,

such as those associated with start-up, shut-down, or fluctuating operational loads. While such events may be limited in duration, they have the potential to give rise to elevated ground-level concentrations at nearby receptors, particularly under unfavourable dispersion conditions.

This is especially significant having regard to the proximity of sensitive receptors, including a substantial number of residential dwellings within 250–500 metres of the site, and Lissheenkyle National School located approximately 0.6 km away. The EIAR does not adequately consider how repeated short-term exposure events may affect these receptors over time, nor does it meaningfully assess the heightened sensitivity of vulnerable population groups, including children and older persons.

Furthermore, insufficient consideration is given to the spatial variability of exposure. Dispersion modelling outputs typically present results at discrete receptor points; however, in a rural environment with dispersed dwellings, there is potential for uneven distribution of pollutant concentrations, influenced by localised wind patterns and micro-scale effects. The EIAR does not adequately address whether certain receptors may experience disproportionately higher exposure levels than those presented in the modelled outputs.

The interaction between variable emissions (as set out in Section 7.2.2.3) and variable meteorological conditions further compounds this issue, creating a scenario in which real-world exposure may differ materially from modelled predictions.

Accordingly, it is submitted that the EIAR **underestimates the potential for variable and locally elevated ground-level pollutant concentrations**, and does not provide a sufficiently robust or precautionary assessment of receptor exposure. In particular, the failure to adequately assess **short-term peak concentrations, worst-case dispersion scenarios, and receptor-specific exposure** represents a material deficiency in the evaluation of potential impacts on human health.

7.2.2.5 Indoor air quality and exposure pathways

The EIAR does not meaningfully consider the potential for indoor exposure to air pollutants, which represents a critical and well-recognised pathway for human health impacts. The assessment is confined almost exclusively to ambient (outdoor) air quality and does not address how pollutants may be experienced within residential environments in practice.

In modern residential dwellings, particularly those that are newly constructed or retrofitted to meet enhanced energy efficiency standards, increasing levels of airtightness have resulted in a greater reliance on mechanical ventilation systems, including mechanical ventilation with heat recovery (MVHR). These systems operate by continuously drawing in external air and distributing it throughout internal living spaces. As a consequence, outdoor air quality is directly linked to indoor air quality, with external pollutants, including nitrogen dioxide (NO_2), fine particulate matter ($PM_{2.5}$), and other combustion-related by-products, capable of being introduced into indoor environments where occupants spend the majority of their time.

This pathway is particularly relevant in the context of the proposed development, having regard to the proximity of a substantial number of residential receptors to the site and the potential for repeated and long-term exposure associated with operational emissions. Notwithstanding this, the EIAR does not assess the relationship between outdoor and indoor pollutant concentrations, nor does it consider the potential for pollutant ingress and accumulation within enclosed spaces. There is also no meaningful assessment of how prolonged indoor exposure may occur in practice, particularly during periods when occupants are present for extended durations, such as evenings and overnight.

This omission is particularly significant given that exposure to air pollutants is predominantly an indoor phenomenon, with individuals typically spending the majority of their time within enclosed environments. As such, an assessment limited to ambient concentrations does not provide an accurate or realistic representation of actual human exposure.

Furthermore, the EIAR does not provide any specific consideration of vulnerable population groups, including children, older persons, and individuals with pre-existing respiratory or cardiovascular conditions, who may be more susceptible to the effects of indoor air pollution.

The failure to consider indoor exposure pathways represents a material limitation in the EIAR, as it results in an underestimation of the true extent and nature of human exposure to pollutants arising from the proposed development. Accordingly, it is submitted that the EIAR does not provide a comprehensive or realistic assessment of how air quality impacts will be experienced by nearby residents, and therefore understates the potential for adverse human health effects.

7.2.2.5 Noise impacts

Chapter 9 of the EIAR (Noise and Vibration, pp. 439–474) purports to assess the likely noise impacts arising from both the construction and operational phases of the proposed development. While the chapter presents baseline monitoring data, predictive modelling, and reference to applicable guidance (including EPA and BS4142

methodologies), it is submitted that the assessment is overly reliant on standardised modelling assumptions and compliance-based thresholds and fails to adequately assess the real-world noise environment experienced at nearby sensitive receptors.

A further and fundamental deficiency arises in respect of the identification of Noise Sensitive Locations (NSLs) within the EIAR.
Fig. 9-3 of the EIAR purports to identify the "Noise Sensitive Locations" considered in the assessment. However, it is submitted that this figure represents a **significant underestimation of the true extent of sensitive receptors within the receiving environment**, and therefore materially undermines the validity of the noise assessment.

Fig. 20: 'Noise Sensitive Locations' identified by the applicant (Source: 9-3 of the submitted EIAR)

The inadequacy of this approach is evident when considered against the applicant's own stated methodology. Section 9.6.1.1 of the EIAR adopts the EPA definition of a Noise Sensitive Location as:

> ***any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels*** [emphasis added]

Notwithstanding this clearly broad definition, the EIAR identifies only a limited number of such locations for detailed assessment. This is directly contradicted by the applicant's own baseline analysis presented in Chapter 4 of the EIAR.

Figure 4-4 of the EIAR maps a substantially larger number of receptors within the study area, including residential dwellings, community facilities, educational establishments, and other sensitive uses, all of which fall squarely within the EPA definition of Noise Sensitive Locations.

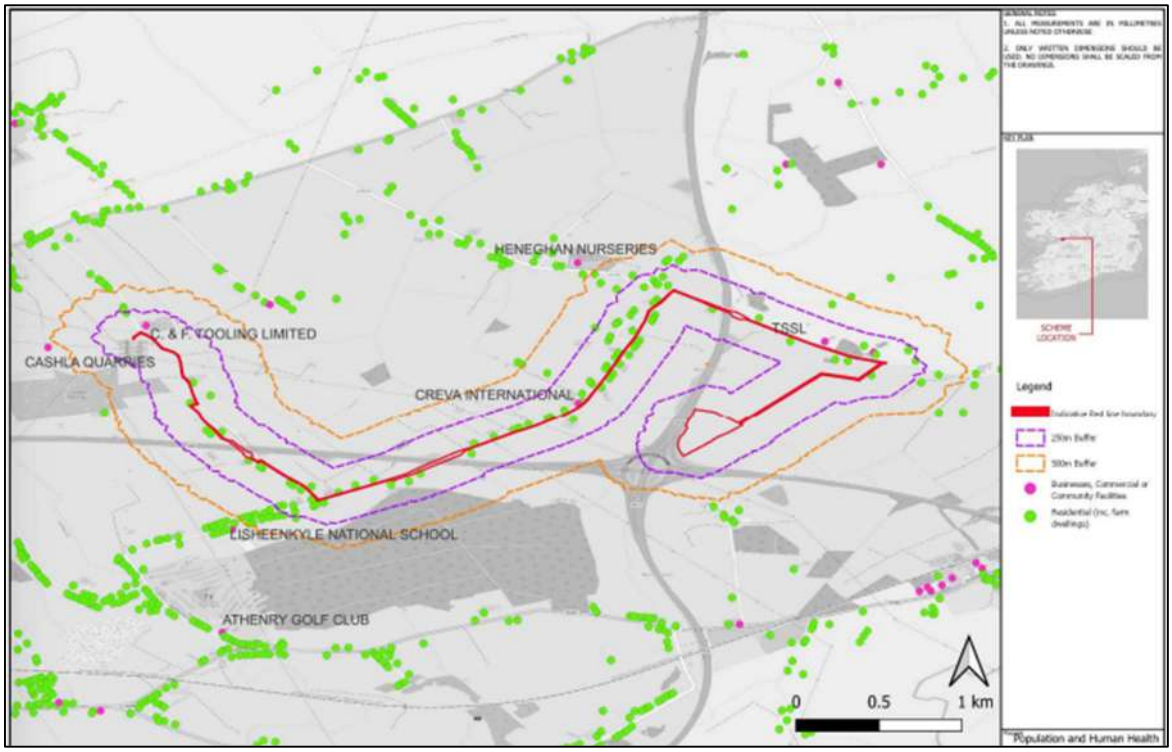


Fig. 21: Population and human health receptor. (Source: Figure 4-4, EIAR)

The discrepancy between the comprehensive receptor mapping in Chapter 4 and the significantly reduced set of locations assessed in the Noise Chapter is neither explained nor justified within the EIAR. In effect, the applicant has **selectively narrowed the scope of the noise assessment**, resulting in a failure to assess impacts at a substantial number of qualifying sensitive receptors.

This represents a clear methodological flaw. The purpose of an EIAR is to identify and assess impacts on the full extent of the receiving environment, particularly those receptors most vulnerable to environmental effects. The omission of a significant proportion of identified sensitive receptors from detailed noise assessment constitutes a **material underassessment of potential impacts**.

Furthermore, the EIAR does not demonstrate that the selected NSLs are representative of the worst-case or most exposed receptors. There is no clear justification for their selection, nor any evidence that other receptors would experience lesser impacts. In the absence of such justification, the conclusions drawn from the assessment cannot be considered robust or reliable.

While it is acknowledged that the assessment of a larger number of receptors would require additional analysis, this does not absolve the applicant of their obligation to undertake a **comprehensive and evidence-based assessment**. The failure to do so undermines the integrity of the EIAR and is contrary to established best practice in environmental assessment.

Accordingly, it is submitted that the noise and vibration assessment is incomplete, not representative of the receiving environment, and methodologically unsound. The conclusions reached in respect of noise impacts cannot therefore be relied upon. This deficiency alone is of sufficient significance to call into question the validity of the EIAR and the acceptability of the proposed development.

Notwithstanding this, the following sections further examine the deficiencies within the noise assessment and its conclusions.

Baseline Environment and Sensitivity

The EIAR confirms that the receiving environment is characterised by low baseline noise levels typical of a rural setting, with background sound dominated by distant traffic, wind, and natural sources. This is a critical point. In such environments, even relatively small increases in noise can give rise to disproportionately significant impacts, particularly where the introduced noise is industrial in character.

However, while the EIAR acknowledges this low-noise baseline, it does not adequately carry this sensitivity through into its impact assessment. Instead, it proceeds to assess impacts primarily by reference to absolute noise limits and predicted compliance, rather than by reference to the change in acoustic character or the experience of receptors, which is the key determinant of amenity impact in rural contexts.

Construction Phase – Underestimation of Receptor-Level Impacts

The EIAR identifies a range of construction activities capable of generating elevated noise levels, including heavy plant, excavation works, and construction traffic. However, the assessment is presented using standard reference distances and averaged noise levels, without clearly demonstrating the likely noise exposure at the closest residential receptors, many of which are located within a few hundred metres of the site.

Critically, the EIAR does not provide sufficient clarity on:

- how noise levels will vary over time during different construction stages;
- the potential for **peak or impulsive noise events**;
- the interaction of multiple plant items operating simultaneously; and
- or the **duration and frequency** of high-noise activities.

In the absence of this detail, the assessment fails to provide a realistic representation of construction-phase disturbance. Given the sensitivity of the receiving environment, the potential for **significant temporary but prolonged disruption** to residential amenity is not adequately assessed.

Operational Phase – Reliance on Compliance Rather than Impact

In respect of the operational phase, the EIAR identifies the principal noise sources associated with the development, including turbines, generators, auxiliary plant, and cooling systems. These sources are inherently industrial, mechanical, and in some cases tonal, characteristics which are specifically identified in BS4142 as having the potential to increase perceived impact.

The EIAR relies on BS4142:2014+A1:2019 to assess operational noise, concluding that impacts will be acceptable where rating levels do not exceed background noise levels by specified margins. However, it is submitted that the application of BS4142 in this instance is **overly simplified and not sufficiently precautionary**, for a number of reasons.

Firstly, the assessment appears to assume steady-state operation, whereas the proposed development is a peaker plant, characterised by intermittent operation and frequent start-up and shut-down cycles. These events are typically associated with rapid changes in noise levels, as well as distinct tonal or impulsive characteristics, which are more likely to give rise to disturbance than constant background noise. The EIAR does not adequately assess these transient conditions.

Secondly, the assessment does not sufficiently account for **penalty corrections** under BS4142 for tonal, impulsive, or intermittency characteristics. Given the nature of turbine and generator operation, such characteristics are likely to arise and should be explicitly assessed.

Thirdly, the EIAR's reliance on achieving compliance with predicted rating levels does not address the **perception of noise at receptors**, particularly during night-time periods when background levels fall significantly. In rural environments, even marginal exceedances, or indeed compliance, may still result in **clearly perceptible and intrusive noise**.

Night-Time Impacts and Sleep Disturbance

The EIAR does not provide a sufficiently detailed assessment of **night-time operational impacts**, despite acknowledging that background noise levels are lower during these periods. This represents a significant omission.

Night-time noise is widely recognised as a key pathway for **sleep disturbance**, which in turn is linked to a range of adverse health outcomes, including stress, cardiovascular effects, and reduced wellbeing. The introduction of intermittent industrial noise, particularly involving start-up events or changes in operational load, has the potential to cause repeated awakenings or disturbance.

The absence of a robust night-time assessment, including **worst-case operational scenarios**, represents a material deficiency in the EIAR.

Meteorological Effects and Sound Propagation

The EIAR does not adequately address the influence of **meteorological conditions on noise propagation**, despite this being particularly relevant in the context of the site's location in Galway.

As established elsewhere in this objection, the site is subject to **frequent wind events and variable atmospheric conditions**. Under certain conditions, including **downwind propagation, temperature inversions, or stable night-time atmospheres**, noise can travel significantly further and be experienced at higher levels than predicted.

The use of standardised modelling inputs does not adequately capture this variability, and the EIAR does not provide a clear assessment of **worst-case propagation scenarios**. This is a significant omission, particularly given the proximity of sensitive receptors.

Cumulative and Character Effects
The EIAR assesses noise sources largely in isolation and does not adequately consider the **combined and cumulative effect** of:

- continuous plant operation;
- intermittent start-up and shut-down events;
- auxiliary systems; and
- traffic movements associated with the development.

The combined effect of these sources will result in a **fundamental change in the acoustic environment**, from a quiet rural setting to one characterised by industrial noise. This change in character is not adequately assessed within the EIAR.

Vibration and Ecological Disturbance
The assessment of vibration is limited and does not meaningfully consider potential impacts arising from operational plant or construction activities. In addition to potential human perception, vibration may also affect **wildlife and habitats**, particularly species sensitive to ground-borne disturbance or nocturnal activity.
This pathway is not adequately explored in the EIAR.

In addition, the EIAR does not adequately assess the potential noise and vibration impacts on nearby residential receptors, including a dwelling located approximately 19m from the access road. While noise impacts are considered, the assessment does not sufficiently account for the proximity of this receptor or the likely disturbance arising from construction traffic and operational movements. In addition, there is no detailed assessment of vibration effects associated with heavy plant, vehicular activity, or operational equipment. In a rural environment with low baseline levels, such effects have the potential to give rise to significant disturbance and loss of residential amenity. The absence of a robust vibration assessment represents a further deficiency in the evaluation of impacts on human health.

Conclusion
Having regard to the above, it is submitted that the EIAR fails to provide a sufficiently robust, detailed, and precautionary assessment of noise impacts arising from the proposed development. In particular, the assessment is deficient in its treatment of:

- receptor-specific impacts in a low-noise rural environment;
- intermittent and non-steady-state operational noise;
- night-time disturbance and sleep impacts;
- meteorological influences on noise propagation; and
- cumulative and character effects.

The reliance on compliance-based thresholds, in the absence of a comprehensive assessment of how noise will be experienced in practice, materially undermines the conclusions of the EIAR.

Accordingly, the proposed development gives rise to a clear and unacceptable risk of significant adverse effects on residential amenity and human health, and the assessment presented does not provide a sufficient basis to conclude otherwise.

7.2.2.7 Traffic impacts

The Traffic and Transportation Chapter of the EIAR (Chapter 10) materially underestimates both the scale and nature of likely impacts arising from the proposed development, particularly when assessed against the actual characteristics of the receiving rural road network and the extent of construction and operational activity proposed.

At the outset, the assessment adopts a narrow and overly theoretical interpretation of road capacity, relying on standardised capacity thresholds (i.e. 1,500 vehicles per hour for the L3103) to conclude that impacts will be "not significant". This approach is fundamentally flawed in a rural context. The L3103 and associated local roads (including the L7108 and L7109) are not designed to modern carriageway standards, but are instead narrow rural roads characterised by constrained widths, substandard alignment, limited forward visibility, absence of verges, and restricted passing opportunities. The reliance on generic Design Manual for Roads and Bridges (DMRB) assumptions fails to reflect real-world operating conditions and materially understates both risk and impact.

Fig. 22: Condition of the L3103 road (Source: Google Maps Streetview)

Fig. 23: Width of the L3103 road, which the site is proposed to be accessed off (Source: Google Maps measurement tool)

This disconnect between theoretical capacity and actual road function is clearly illustrated in the applicant's own submitted drawings.

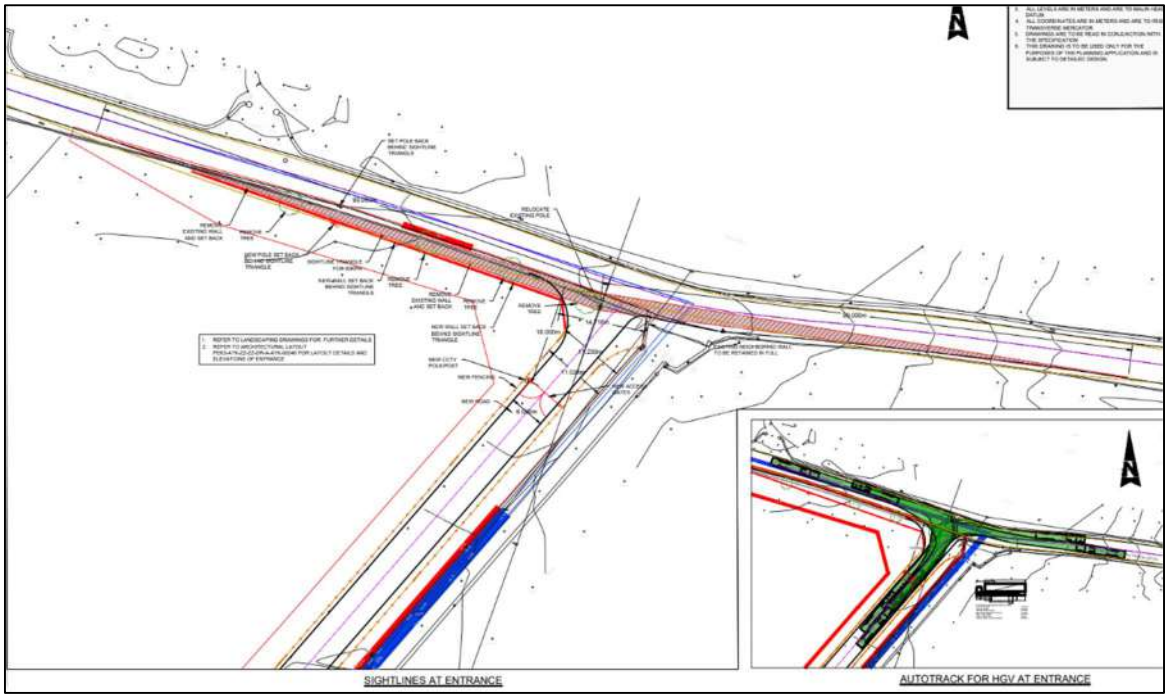


Fig. 24: Sightlines and access arrangement at site entrance (Source: Applicant drawing)

As demonstrated in the Autotrack drawing, articulated HGVs (approximately 16.5m in length) are required to swing widely across the carriageway in order to enter and exit the site. The tracking path clearly shows vehicles encroaching into the opposing lane during turning manoeuvres. This is not a marginal or occasional occurrence but an inherent geometric requirement of the junction design.

Accordingly, the proposed access arrangement necessitates that large HGVs occupy both sides of the carriageway during entry and exit movements. On a constrained rural road such as the L3103, this creates an unavoidable conflict scenario whereby opposing traffic cannot safely pass. The practical implication is that if two vehicles meet—particularly where one is an articulated HGV—there is insufficient carriageway width to safely accommodate both movements. This aligns directly with local observations that even passing a single HGV in a standard passenger vehicle is already marginal under existing conditions.

This is a critical road safety issue and fundamentally undermines the applicant's conclusion that traffic impacts are negligible.

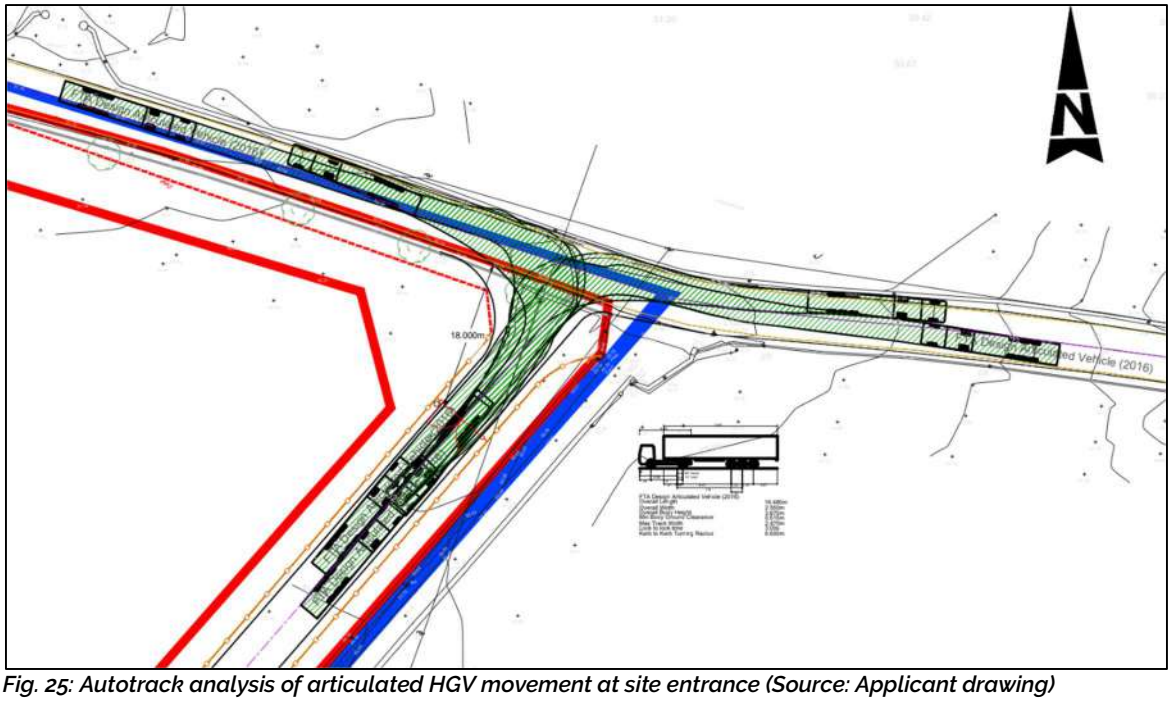


Fig. 25: Autotrack analysis of articulated HGV movement at site entrance (Source: Applicant drawing)

The geometric constraints of the receiving road network are further evidenced by the applicant's own drawings. The Autotrack analysis confirms the use of a standard articulated vehicle with an overall width of approximately 2.55 metres. In the absence of any demonstrated carriageway widening along the L3103, it follows that two such vehicles cannot safely pass within the existing road width. Industry standards typically require a carriageway width in excess of 6.5–7.0 metres to facilitate two-way HGV movement. No evidence is provided within the EIAR that the existing road meets this standard.

The tracking diagrams clearly demonstrate that articulated vehicles must utilise the full carriageway width and encroach into the opposing lane when entering and exiting the site. This confirms that the local road network is not of sufficient width to safely accommodate the scale and type of traffic generated by the proposed development. The EIAR does not acknowledge or assess this constraint, representing a significant omission in the traffic assessment.

Furthermore, the EIAR significantly underrepresents the intensity and frequency of HGV movements associated with the operational phase of the development. While construction traffic is addressed in some detail, insufficient weight is given to ongoing operational requirements. In particular, it is estimated that the refuelling of diesel storage associated with the peaker plant could require in excess of 300 articulated HGV deliveries. This represents a substantial and recurring traffic burden which is not adequately assessed within the EIAR.

In this context, the development cannot be characterised as generating occasional or low-frequency HGV traffic. Rather, it introduces repeated, large-scale articulated vehicle movements onto a road network demonstrably incapable of safely accommodating such traffic. The interaction between these vehicles and the constrained geometry of the local road network gives rise to a persistent and inherent traffic hazard.

The EIAR itself acknowledges that sections of the surrounding road network require full closure to facilitate works, including along the L7108 and L7109. This is a significant admission. A road network that cannot accommodate two-way movement during works, due to insufficient width, cannot reasonably be considered suitable for sustained HGV use during either construction or operation.

The scale of construction activity further exacerbates these issues. The EIAR identifies a peak workforce of up to 150 personnel, generating approximately 100 daily car trips, in addition to significant HGV movements associated with earthworks, deliveries, and abnormal loads (including loads of up to 380 tonnes). These are not typical traffic movements and introduce additional safety risks on roads with restricted geometry and visibility.

The assessment assumes that such traffic will be managed outside peak periods; however, this assumption lacks robustness. In a rural context, sensitivity is not confined to commuter peaks but includes school transport movements, agricultural activity, and general local usage patterns. The EIAR fails to meaningfully assess these dynamics.

Of particular concern is the complete absence of pedestrian and cycling infrastructure in the vicinity of the site, as acknowledged in the EIAR. There are no footpaths, cycle lanes, or public transport facilities along the L3103. Despite this, the assessment does not adequately evaluate the safety implications for vulnerable road users, including pedestrians, cyclists, and school transport routes. The introduction of regular HGV traffic in such an environment represents a clear and unmitigated risk to public safety.

The proposed underground cable route further compounds these impacts. The EIAR confirms that road closures of up to 3 km in length will occur, with diversion routes extending journeys by approximately 5 km. These works are programmed over extended periods, including up to 6 months for installation and additional months for reinstatement. Such durations cannot reasonably be characterised as temporary and will result in sustained disruption to local communities.

Critically, the EIAR also fails to adequately assess the implications for emergency access. The development relies on a single primary access point via the L3103. This introduces a clear vulnerability. Any obstruction—whether due to construction traffic, HGV manoeuvres at the site entrance, or road closures—has the potential to delay or impede emergency services, including ambulances, fire services, and community first responders. The suggestion that temporary measures can facilitate access during works is not a guaranteed or reliable mitigation. In addition, insufficient consideration is given to the structural integrity of the local road network. Rural local roads are not designed to accommodate sustained heavy loading from articulated HGVs. The likely consequences include edge failure, surface degradation, and increased maintenance requirements. The proposal to undertake pre- and post-construction surveys does not address the fundamental unsuitability of the infrastructure.

There is also a lack of clarity regarding the potential use of private roads and access arrangements in areas such as Rathmorrissey. This raises additional legal and safety concerns which are not adequately addressed in the EIAR.

The EIAR and supporting documentation do not provide clear or robust evidence that the existing road and bridge infrastructure can safely accommodate the abnormal and heavy loads required during construction. Critical assessments, including structural capacity checks and route suitability analysis, appear to be deferred to

a later stage rather than forming part of the current application. This deferral represents a significant omission, as it prevents the competent authority from fully assessing potential impacts on infrastructure integrity and road safety at the time of decision-making. Accordingly, the assessment of transport impacts is incomplete and does not provide an adequate basis for determining the acceptability of the proposed development.

7.2.2.7.1 Unacceptable adverse impacts to local residents by proposed diversions and road closures

The EIAR confirms that the installation of the underground cable (UGC) will necessitate a series of full and partial road closures across the local road network, including the L7108, L7109 and L3103. While these impacts are acknowledged, the assessment materially understates both the extent and severity of disruption that will arise for local residents, particularly those living along and reliant upon the L3103 corridor and its connecting local roads.

The proposed works include full road closures of up to approximately 3 km in length, with associated diversion routes extending to approximately 8 km, resulting in an additional 5 km travel distance for affected road users . In a rural context characterised by limited route choice and dispersed residential development, such diversions cannot reasonably be described as minor or temporary inconvenience. Rather, they represent a significant severance of established movement patterns, forcing residents to undertake indirect and time-consuming journeys for routine daily activities, including access to work, school, services and social networks.

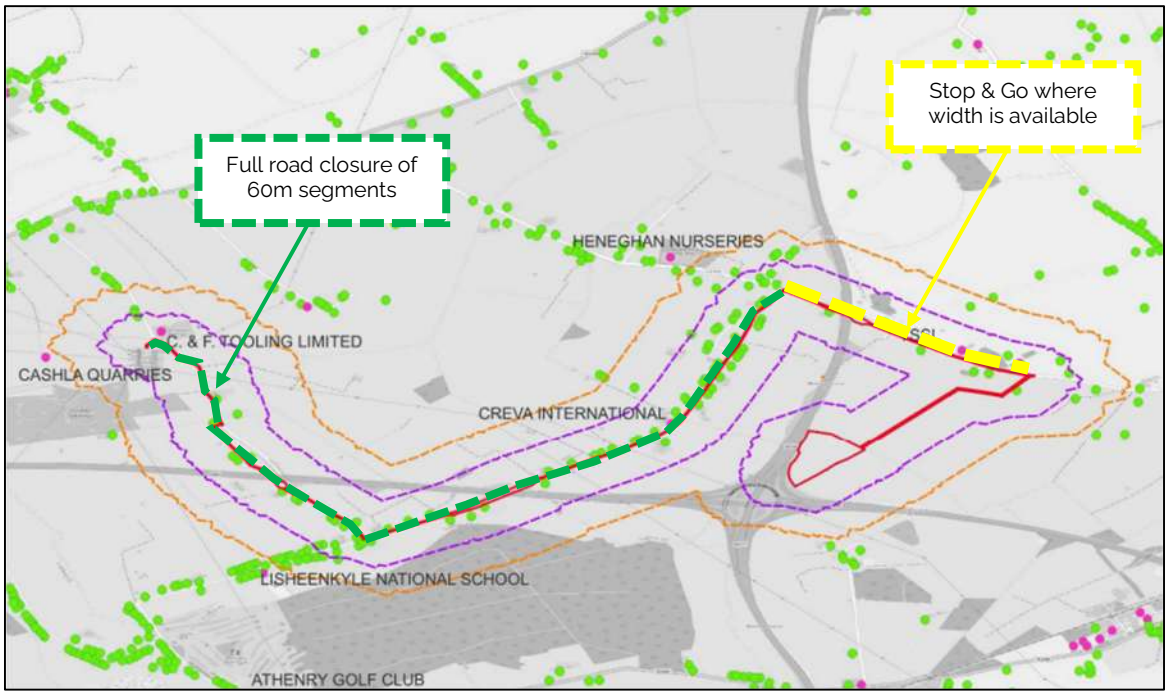


Fig. 26: Proposed Road Closures proximate to 82 no. residential receptors(Source: EIAR figure 4-4, annotated by BPS)

The EIAR asserts that residential access will be maintained through phased trenching (typically 30–50 m sections). However, this approach does not adequately reflect real-world conditions. In practice, residents will experience restricted and inconsistent access, often limited to one side of the works at any given time, with no ability to travel freely along the local road network in a continuous manner. This results in functional severance, even where technical access is nominally retained. The linear pattern of rural housing along the L3103 and adjoining roads further exacerbates this issue, as these dwellings are highly dependent on uninterrupted road access.

In addition to full closures, the EIAR proposes partial closures along the L3103, whereby a single lane of approximately 3 m width will be maintained under a stop/go traffic management regime . This arrangement is fundamentally constrained and fails to account for the characteristics of the receiving environment. The L3103 is a narrow rural road with no pedestrian or cycling infrastructure and limited opportunity for safe passing. The reduction to a single controlled lane introduces a significant constraint on traffic flow and creates conditions that are inherently prone to delay, conflict and driver frustration.

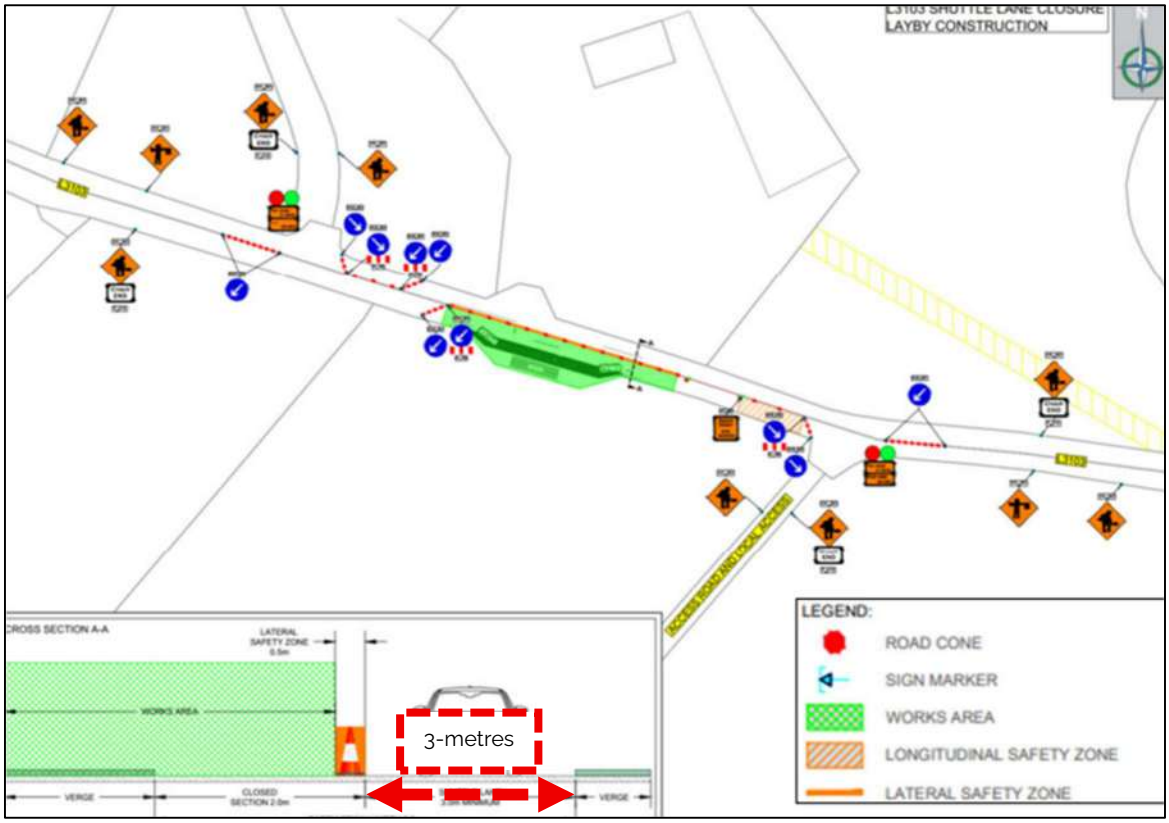


Fig. 27: Stop/Go System on L3103 annotated to highlight 2.5 m lane width relative to vehicle sizes (Source: EIAR Figure 10-14, annotated by BPS)

The EIAR does not adequately assess how this arrangement will operate in practice, particularly in the context of construction traffic, agricultural vehicles and general local traffic. The interaction between opposing flows under temporary signals, combined with limited visibility and constrained geometry, will inevitably give rise to **queueing, delay and an increased risk of conflict**. These effects will be experienced directly by residents whose dwellings front onto or are accessed via the L3103, resulting in a tangible deterioration in residential amenity, including increased noise, disturbance and reduced safety.

The proposed diversion routes compound these impacts. Traffic displaced from closed sections of the network will be rerouted via the same hierarchy of local and regional roads, including the L3103 and R339. The EIAR does not meaningfully assess the capacity of these routes to accommodate diverted traffic, nor does it consider the **cumulative effect of additional traffic, constrained road conditions and ongoing construction activity**.

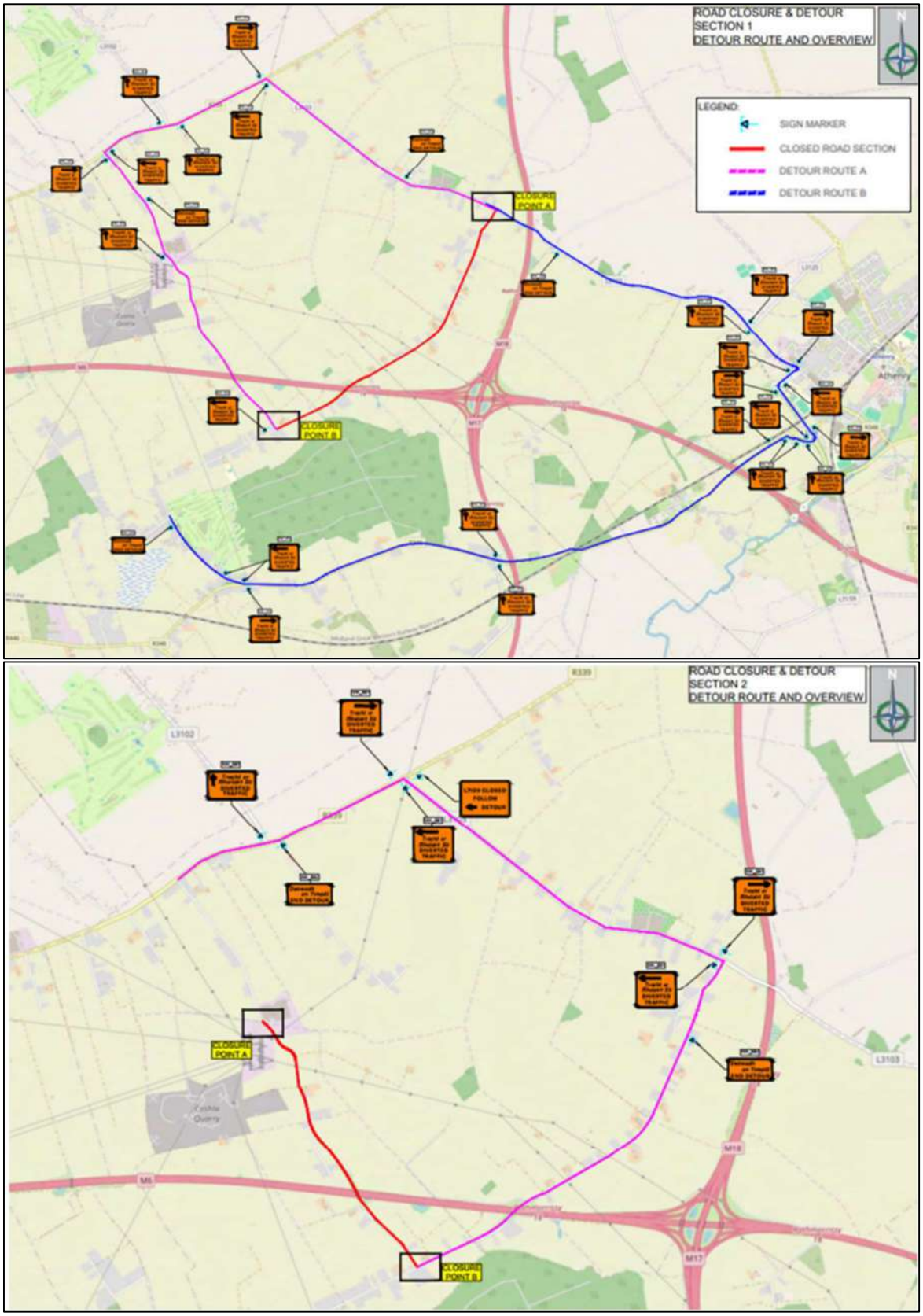


Fig. 28: Diversion Routes (EIAR Figures 10-10 and 10-11)

Notably, the EIAR concludes that the impacts of road closures will be "significant but short-term", and that partial closures will result in only "moderate" effects. These conclusions are not supported when the duration and sequencing of works are properly considered. UGC construction is anticipated to extend over a period of approximately 9 months, with individual roads subject to closures and resurfacing works for periods of several weeks to months . While closures may be phased, the overall disruption to the local road network will be

continuous and prolonged, migrating spatially but persisting temporally. For affected residents, this equates to a sustained period of reduced accessibility and diminished living conditions.

Furthermore, the assessment fails to give adequate consideration to sensitive receptors, including residents with direct frontage onto affected roads, school-going children, and agricultural users who rely on unrestricted access for daily operations. The reliance on mitigation measures such as communication strategies and temporary access provisions does not address the fundamental issue that the local road network will be functionally compromised for an extended duration.

Overall, the EIAR does not present a robust or realistic assessment of the impacts arising from proposed road closures and diversions. The scale, duration and nature of the works will give rise to significant adverse effects on residential amenity, local accessibility and road safety, which have been systematically understated. In this context, the proposed development would result in an unacceptable level of disruption to the established rural community and the proper planning and sustainable development of the area.

7.2.2.7.2 Additional traffic and transport concerns

The submitted traffic documentation does not adequately assess the geometric constraints of the local road network, particularly in the vicinity of the proposed site entrance on the L3103.

As illustrated in Fig. 28a, the road is characterised by a combination of horizontal curvature and vertical undulation, including a pronounced "hidden dip" or vertical crest which significantly restricts forward visibility.

In such circumstances, drivers approaching the site access may not have sufficient visibility of vehicles emerging from the site, particularly slow-moving or turning Heavy Goods Vehicles (HGVs), giving rise to a material road safety hazard.

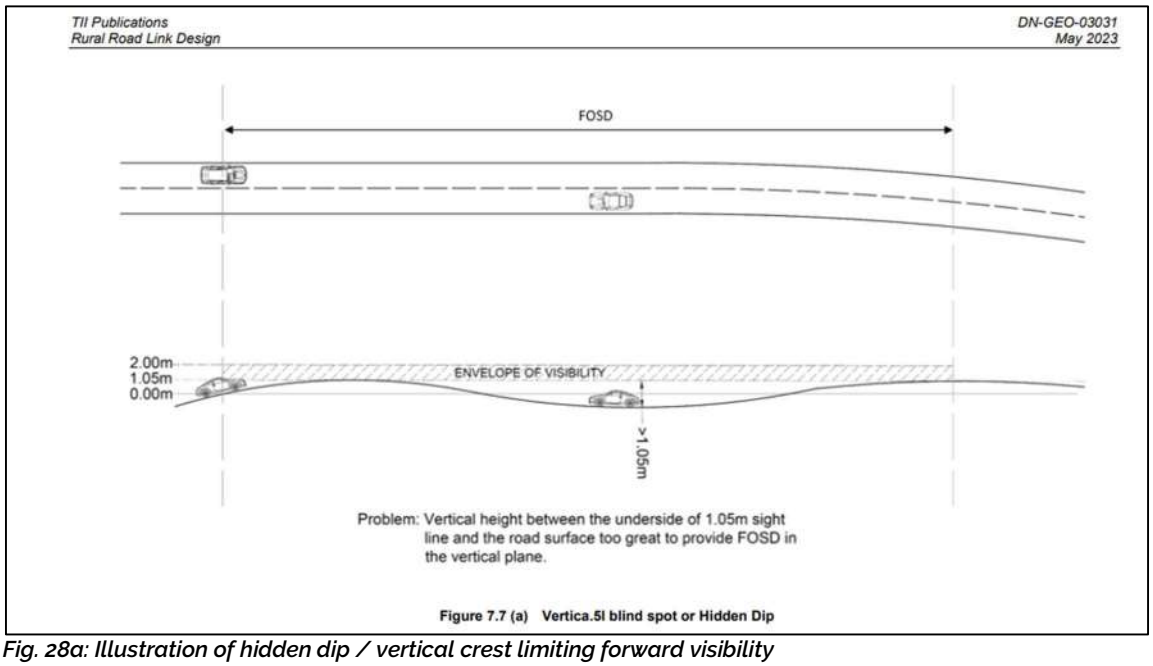


Fig. 28a: Illustration of hidden dip / vertical crest limiting forward visibility

Topographical information submitted by the applicant indicates that road levels vary between approximately 51.5m and 50.5m along the Athenry approach, with a crest profile evident along the relevant section of roadway. As illustrated in Fig. 28b, this variation in levels contributes to a restriction in visibility consistent with a vertical alignment constraint.

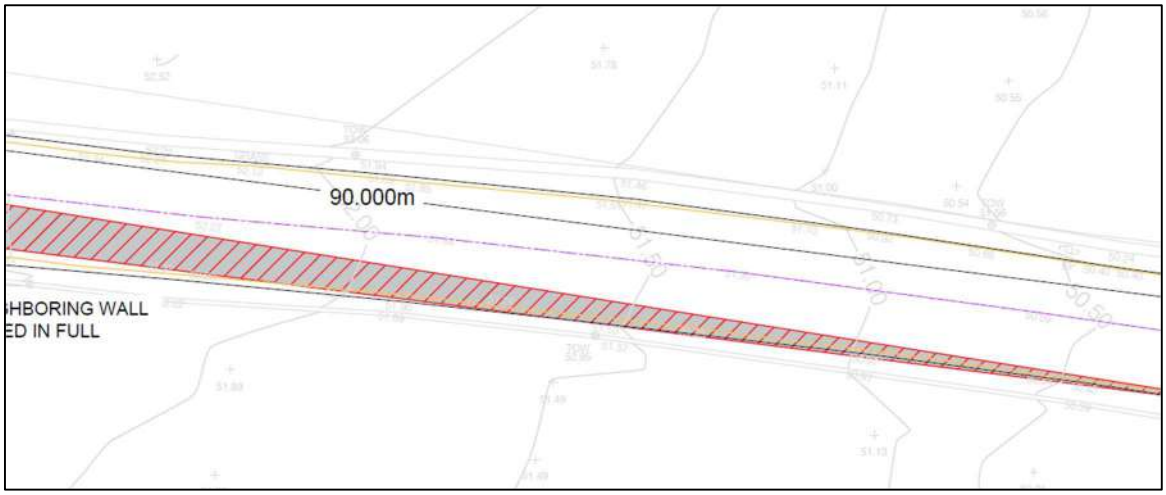


Fig. 28c: Road levels and longitudinal profile showing vertical variation (51.5m–50.5m).

Furthermore, the proposed site entrance geometry and visibility splays are constrained by the existing road alignment, boundary treatments, and local features. As shown in Fig. 28d, achieving compliant visibility splays would require significant alteration, including removal of roadside vegetation and boundary features, and potentially works outside lands under the applicant's control.

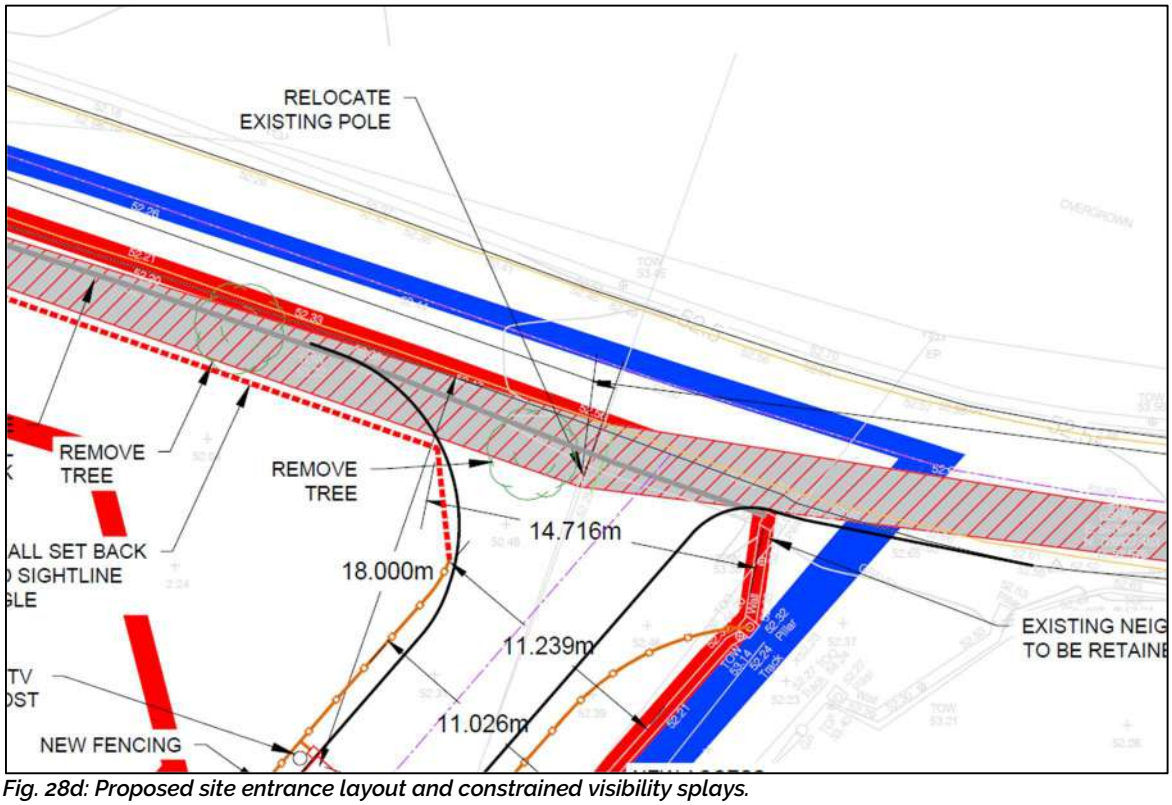


Fig. 28d: Proposed site entrance layout and constrained visibility splays.

Observed site conditions further confirm the restricted nature of visibility along this section of the L3103. Views from both directions demonstrate a narrow carriageway, roadside boundaries, and curvature which limit forward visibility for approaching drivers.

Fig. 28e: View from Athenry towards the site entrance.

Fig. 28f: View from Coffey construction direction towards Athenry.

Critically, a HGV exiting the site would encounter severely limited visibility of oncoming traffic due to the combination of horizontal curvature and vertical alignment. Equally, oncoming drivers would not have sufficient visibility of an emerging HGV until they have passed the bend and are directly confronted with it, significantly increasing the risk of collision.

Fig. 28g: Driver perspective illustrating restricted visibility and head-on conflict risk.

In addition, reference to TII Design Manual for Roads and Bridges (DMRB) standards indicates that a minimum stopping sight distance of approximately 90m is required for a design speed of 60km/h. Having regard to the road geometry and observed constraints, it has not been demonstrated that this standard can be achieved at the proposed entrance location.

Accordingly, the Board cannot be satisfied that the proposed access arrangements provide an adequate level of visibility or safety for vehicles entering or exiting the site, particularly in the case of HGV movements. The proposed development would therefore give rise to a significant risk to road safety and would be contrary to the proper planning and sustainable development of the area.

Absence of Robust Road Safety Audit and Swept Path Assessment
Having regard to the scale and nature of the proposed development, including the requirement for frequent HGV movements, a Stage 1 Road Safety Audit in accordance with TII Standard GE-STY-01024 would be expected. While reference is made to access design, it is unclear whether a full and independent Road Safety Audit has been undertaken. In addition, concerns arise in relation to swept path analysis, particularly given the constrained nature of the local road network and the geometry of the proposed entrance.

Inadequate Consideration of Stopping Sight Distance
The TII Design Manual specifies minimum stopping sight distances depending on design speed. As set out in Table 9.3 (Design Speed Related Parameters), a stopping sight distance of approximately 90m is required for a design speed of 60km/h.

Table 9.3 Design Speed Related Parameters

REGIONAL AND LOCAL ROAD DESIGN SPEED (km/h)	85	70	60	50	42	V2/R
STOPPING SIGHT DISTANCE m						
Desirable Minimum Stopping Sight Distance	160	120	90	70	50	
One Step below Desirable Minimum	120	90	70	50	40	
Two Steps below Desirable Minimum	90	70	50	40	30	
HORIZONTAL CURVATURE m						
Minimum R+ without elimination of Adverse Camber and Transitions	1440	1020	720	510	360	5
Minimum R+ with Superelevation of 2.5%	1020	720	510	360	255	7.07
Minimum R with Superelevation of 3.5%	720	510	360	255*	180*	10
Desirable Minimum R with Superelevation of 5%	510	360**	255**	180*	127*	14.14
One Step below Desirable Min R with Superelevation of 7%	360	255**	180**	127*	90*	20
Two Steps below Desirable Min R with Superelevation of 7%	255	180**	127**	90*	65*	28.28
Three Steps below Desirable Min R with Superelevation of 7%	180	127**	90**	65*	44*	40
Four Steps below Desirable Min R with Superelevation of 7%	127	90**	65**	44*	34*	56.56
VERTICAL CURVATURE – CREST						
Desirable Minimum Crest K Value	55	30	17	10	6.5	
One Step below Desirable Min Crest K Value	30	17	10	6.5	5	
Two Steps below Desirable Min Crest K Value	17	10	6.5	5	5	
VERTICAL CURVATURE – SAG						
Desirable Minimum Sag K Value	26	20	13	9	6.5	
One Step below Desirable Min Sag K Value	20	13	9	6.5	5	
Two Steps below Desirable Min Sag K Value	13	9	6.5	5	5	
OVERTAKING SIGHT DISTANCES						
Full Overtaking Sight Distance FOSD m.	490	410	345	***	***	
FOSD Overtaking Crest K Value	285	200	142	***	***	

Notes:
The V2/R values simply represent a convenient means of identifying the relative levels of design parameters, irrespective of Design Speed.
K Value = curve length divided by algebraic change of gradient (%).
* *For Regional and Local Roads of design speeds 50km/h and less, a maximum superelevation of 3.5% shall apply.*
** *For Regional and Local Roads of design speeds 60 km/h and 70km/h, a maximum superelevation of 5% shall apply.*
*** *Missing FOSD parameters - refer to Section 9.4.*
\+ *Not to be used in the design of single carriageway Regional and Local Roads where the design speed is > 60km/h (see Horizontal Curve Design and Vertical Curve Design in Chapter 7).*

Fig. 28h: TII Design Speed Related Parameters (Stopping Sight Distance requirements).

Based on site observations and the presence of bends and vertical constraints, it is not evident that this minimum stopping sight distance is consistently achievable in the vicinity of the proposed entrance. This is of particular concern given the potential for slow-moving or stationary HGVs entering or exiting the site.

Lack of Assessment of Night-Time Lighting and Driver Impact
The EIAR does not include a glint and glare assessment or a detailed evaluation of the impact of artificial lighting associated with the proposed development on road users, particularly on the nearby motorway and local road network.

No photomontages or simulations have been provided to demonstrate the potential effects of continuous night-time lighting on driver visibility, distraction, or safety. Given the scale of the proposed development and the requirement for operational lighting, this omission represents a material gap in the assessment.

7.2.2.7.2 Conclusion

Overall, the assessment is characterised by a consistent reliance on theoretical capacity, optimistic assumptions, and mitigation-by-management approaches, rather than a realistic appraisal of the receiving environment. The evidence contained within the applicant's own drawings demonstrates that the development will give rise to inherent and unavoidable traffic conflicts at the site entrance, particularly involving articulated HGVs.

Having regard to:

- the constrained and substandard nature of the local road network,
- the demonstrated requirement for HGVs to encroach into opposing lanes,
- the scale and frequency of both construction and operational traffic (including significant diesel delivery requirements),
- the absence of infrastructure for vulnerable road users, and
- the risks posed to emergency access and public safety,

it is submitted that the EIAR fails to provide a credible, robust, or precautionary assessment of traffic and transport impacts.

Accordingly, the conclusions of the EIAR in respect of traffic are not reliable, and the proposed development gives rise to significant and unacceptable risks to road safety and community wellbeing.

7.2.2.4 Light pollution

The proposed development will introduce a permanent and intensive source of artificial lighting into a currently dark rural environment, fundamentally altering baseline night-time conditions. The EIAR does not adequately assess the extent to which continuous operational lighting, including security and safety lighting, will increase ambient brightness levels across the surrounding area. In a receiving environment characterised by low existing light levels, even moderate increases in artificial illumination can result in **disproportionate and intrusive effects**.

The EIAR does not adequately assess the extent to which continuous and intermittent operational lighting, including security and safety lighting, will increase ambient brightness levels, light spill, and skyglow across the surrounding area. The introduction of an industrial-scale lighting regime will fundamentally alter the rural character of the area, creating a persistent urbanising influence within an otherwise dark landscape.

Sensitive receptors, including nearby residential properties, schools, and recreational facilities, are likely to experience direct and indirect lighting impacts. However, the EIAR does not provide a sufficiently detailed assessment of these effects, including the potential for sleep disturbance, loss of residential amenity, and visual intrusion. In particular, the proximity of certain receptors heightens the sensitivity of the receiving environment, yet this is not adequately reflected in the assessment.

The EIAR places reliance on vegetation screening as a mitigation measure; however, the effectiveness of such screening in addressing light pollution is limited and, in this instance, overstated. Artificial lighting, particularly at height or of high intensity, will not be fully contained by vegetation and will contribute to wider skyglow and light trespass.

Furthermore, the EIAR fails to assess lighting impacts cumulatively with other environmental effects, including existing illumination from nearby infrastructure such as the motorway. The addition of a continuously lit industrial facility will exacerbate existing light levels and contribute to an overall intensification of night-time brightness in the area.

In addition, insufficient consideration is given to the potential impacts on nocturnal ecology. Increased artificial lighting has the potential to disrupt species behaviour, including foraging and movement patterns, particularly in rural environments where dark corridors are of ecological importance.

Overall, the EIAR does not adequately assess the extent or significance of light pollution impacts arising from the proposed development and fails to demonstrate that the development can be accommodated without giving rise to significant adverse effects on residential amenity, rural character, and the surrounding ecological environment.

7.2.2.5 Vibration

The EIAR Noise and Vibration Chapter (Chapter 9) gives limited and largely qualitative consideration to vibration impacts arising from the proposed development. While reference is made to potential vibration during construction activities, the assessment lacks site-specific analysis, quantified predictions, and receptor-based evaluation, particularly in the context of nearby residential properties and the identified sensitive receiving environment.

The assessment focuses primarily on construction-phase vibration, arising from activities such as excavation, compaction, and heavy goods vehicle (HGV) movements. However, it relies on generic threshold guidance (e.g. BS 5228) rather than undertaking project-specific modelling of vibration levels at identified receptors. This is a critical omission given the proximity of residential dwellings, many of which are located within a few hundred metres of the site boundary (refer to Figure 4-4 of the EIAR).

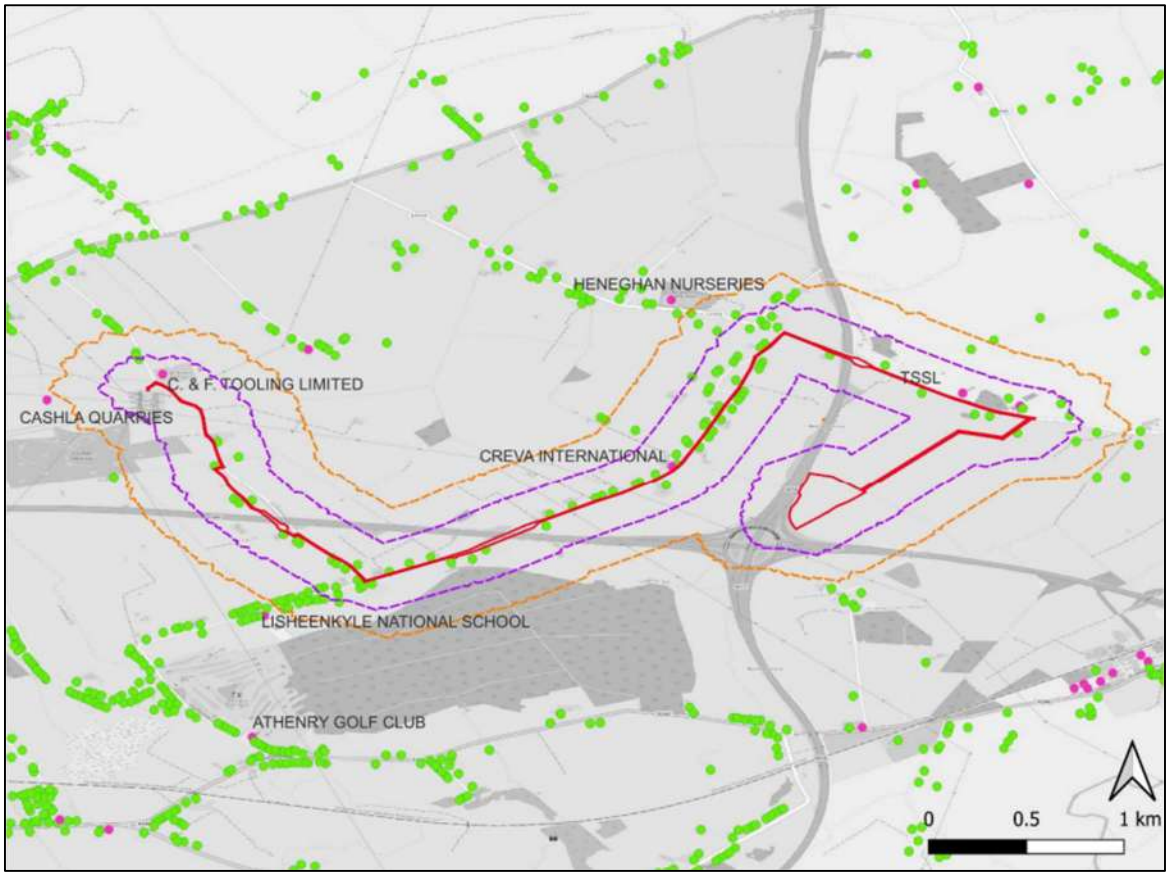


Fig. 29: Population and human health receptors in green and pink (Source: EIAR Figure 4-4)

In particular, vibration associated with traffic movements along the access road has not been adequately assessed. The EIAR does not consider the potential for vibration arising from frequent HGV movements, abnormal loads, or construction traffic along the local road network. This is especially concerning given the constrained, uneven and rural nature of the surrounding roads, where surface conditions and geometry may amplify vibration effects.

No detailed assessment is provided of how vibration will propagate through local ground conditions, nor is there any quantification of likely vibration levels at the nearest dwellings. In a rural environment characterised by extremely low baseline vibration levels, even minor increases can be perceptible and give rise to disturbance or concern, particularly over prolonged construction periods.

Furthermore, the EIAR does not adequately consider the duration and repetition of vibration-generating activities. Construction is expected to occur over an extended period, involving sustained plant operation and frequent HGV movements along local roads. The potential for repeated low-level vibration events, which may not individually exceed guideline thresholds but may cumulatively result in annoyance or disturbance, is not assessed.

In addition, the assessment does not address the potential for structural effects on nearby dwellings, many of which may be older rural properties more susceptible to vibration-related effects such as cosmetic cracking or perceptible internal movement.

The treatment of operational vibration is particularly limited. The EIAR does not provide any meaningful assessment of vibration arising from plant operation, including turbines, generators, and associated mechanical equipment. While such impacts are often assumed to be negligible, this assumption is not supported by any detailed analysis or measurement data. Low-frequency vibration associated with industrial plant can propagate over distance and may be perceptible within nearby properties, particularly during night-time periods when background conditions are lowest.

The EIAR also fails to assess the potential for cumulative effects, including the interaction of vibration with traffic noise and increased traffic volumes. In a low-background rural environment, such combined effects may significantly increase the perception of disturbance and are therefore material to the assessment of residential amenity.

There is also a complete absence of consideration of ecological impacts arising from vibration, particularly in relation to species sensitive to ground-borne disturbance.

Critically, the EIAR does not establish any clear, enforceable vibration limits, nor does it demonstrate that vibration impacts will remain within acceptable thresholds. No robust monitoring or mitigation framework specific to nearby receptors is provided.

Having regard to the above, it is submitted that the EIAR:

- fails to provide a detailed or site-specific assessment of vibration impacts;
- does not assess vibration effects at highly sensitive receptors, including a dwelling located approximately 19m from the access road;
- omits assessment of vibration arising from traffic movements and abnormal loads;
- does not consider cumulative noise and vibration effects; and
- fails to demonstrate that significant adverse effects can be ruled out.

In a receiving environment of high sensitivity, these omissions are material. The potential for perceptible vibration, particularly in combination with traffic and noise impacts, represents a real and inadequately assessed risk to residential amenity.

Accordingly, the vibration assessment is not sufficiently robust or comprehensive and does not provide a reliable basis to conclude that significant adverse effects will not arise.

7.2.3 Consideration of both construction and operational phase impacts to ensure that human health is protected over the full lifetime of development.

The Environmental Impact Assessment Report (EIAR) fails to provide a coherent, lifecycle-based assessment of human health impacts arising from the proposed development. While individual chapters address construction and operational effects separately, there is no integrated evaluation of how these impacts interact, overlap, or accumulate over time. This represents a fundamental methodological deficiency in the assessment of population and human health.

The EIA Directive requires that likely significant effects on human health be assessed in a comprehensive and holistic manner, having regard not only to individual environmental pathways, but also to the duration, frequency, and cumulative nature of exposure. In this instance, the EIAR adopts a fragmented approach, whereby construction impacts are largely characterised as temporary and therefore not significant, while operational impacts are assessed in isolation and primarily against compliance-based thresholds. This approach fails to reflect the reality of how communities experience environmental stressors over time.

In respect of the construction phase, the EIAR identifies a range of impact pathways including noise, vibration, traffic, air emissions (including dust), and disruption arising from road closures and diversions. Notwithstanding this, these impacts are consistently downplayed on the basis of their temporary nature. This characterisation is not supported by the scale or duration of the works proposed. The development comprises a large-scale energy infrastructure project, including a new access road, on-site plant construction, and an approximately 8 km underground cable route. The EIAR confirms that elements of these works will extend over periods of several months, including prolonged road closures and traffic management measures. For affected residents, particularly those located along constrained rural roads such as the L3103 and surrounding local network, these impacts will be experienced not as short-term disturbances but as sustained disruptions over a significant period. Furthermore, the EIAR does not adequately consider the cumulative effect of simultaneous construction activities. Noise, vibration, traffic movements, and air quality impacts are assessed separately, with no meaningful evaluation of how these may combine to affect receptors at any given time. This is particularly relevant in a rural environment with low baseline noise levels and high sensitivity to change, where the introduction of multiple concurrent stressors may give rise to a level of disturbance significantly greater than the sum of individual effects. In respect of the operational phase, the assessment is similarly limited. The EIAR focuses on predicted compliance with environmental standards for individual parameters, including air quality and noise, but does not consider the implications of repeated and long-term exposure over the operational lifetime of the development, which is likely to extend over several decades. The nature of the proposed peaker plant is such that it will operate intermittently but intensively, with emissions, noise, and traffic occurring in episodic but recurring patterns. The EIAR does not assess how these 'repeated exposure' events may interact with baseline conditions or contribute to cumulative health burdens over time.

Critically, there is no assessment of transitional or overlapping phases. The EIAR assumes a clear distinction between construction and operation; however, in practice, elements of commissioning, testing, and early operation may coincide with ongoing construction or reinstatement works, particularly in relation to grid infrastructure. The potential for receptors to be exposed to both construction-related and operational impacts concurrently is not addressed.

In addition, the EIAR fails to adequately consider the evolution of receptor sensitivity over time. Nearby residents, including vulnerable groups such as children and older persons, may be exposed to environmental stressors over extended periods, with potential implications for long-term health outcomes. The assessment does not

consider how repeated or prolonged exposure may contribute to chronic health effects, nor does it engage with the potential for incremental degradation of residential amenity over the lifetime of the development.

The absence of a lifecycle-based assessment is particularly significant when considered in the context of the multi-pathway exposure identified elsewhere in this objection. Air pollution, noise, traffic, light, and vibration do not occur in isolation; rather, they interact in complex ways that influence both the intensity and perception of impact. The EIAR does not provide any integrated assessment of these pathways, nor does it consider worst-case scenarios in which multiple impacts occur simultaneously under adverse conditions.

Accordingly, it is submitted that the EIAR fails to comply with the requirements of the EIA Directive in that it does not provide a complete, integrated, and precautionary assessment of the likely significant effects of the proposed development on human health over its full lifecycle. The reliance on segmented, compliance-based assessments, combined with the systematic downplaying of construction impacts and the omission of cumulative and long-term exposure considerations, materially undermines the validity of the conclusions reached.

In the absence of a robust assessment of how impacts will be experienced in practice over time, it cannot be concluded that the proposed development will not give rise to significant adverse effects on human health. Having regard to the scale, duration, and proximity of the development to sensitive receptors, the precautionary principle must apply.

7.3 Ground 3: Significant adverse impact on landscape character, rural setting and cultural heritage

The proposed development represents a large-scale industrial intervention within an established rural and agricultural landscape. It is submitted that the EIAR fails to adequately assess, or properly acknowledge, the extent to which the development would fundamentally alter the character, visual amenity, and cultural identity of the receiving environment.

The visual impact assessment is deficient in scope, in that it does not accord with the study area requirements specified by Galway County Council. The Planning Authority requested a study area extending to 5km from the site; however, the applicant has limited the assessment to a 3.5km radius. This represents a material deviation from the prescribed assessment methodology and has the effect of excluding potentially affected receptors and viewpoints from consideration. In particular, longer-distance views and cumulative landscape effects may not have been adequately captured. As such, the visual impact assessment is incomplete and cannot be relied upon to provide a full or accurate evaluation of the likely significant effects of the proposed development on the landscape and visual environment.

This ground addresses the inherent incompatibility of the proposed development with its rural context, the resulting landscape and visual impacts, and the potential for adverse effects on cultural heritage, both tangible and intangible.

7.3.1 Inappropriate industrialisation of an agricultural landscape

The receiving environment for the proposed development is unequivocally rural in character, defined by a coherent pattern of agricultural land use comprising open pasture, managed fields, hedgerows, stone boundaries, and dispersed rural dwellings. The LVIA confirms that the site is located within a "Central Galway Complex Landscape" character type, as identified in the County Galway Landscape Character Assessment . This landscape is typified by gently undulating farmland, strong field boundaries, and a predominantly agricultural function, with limited built form outside of isolated residential and farm structures.

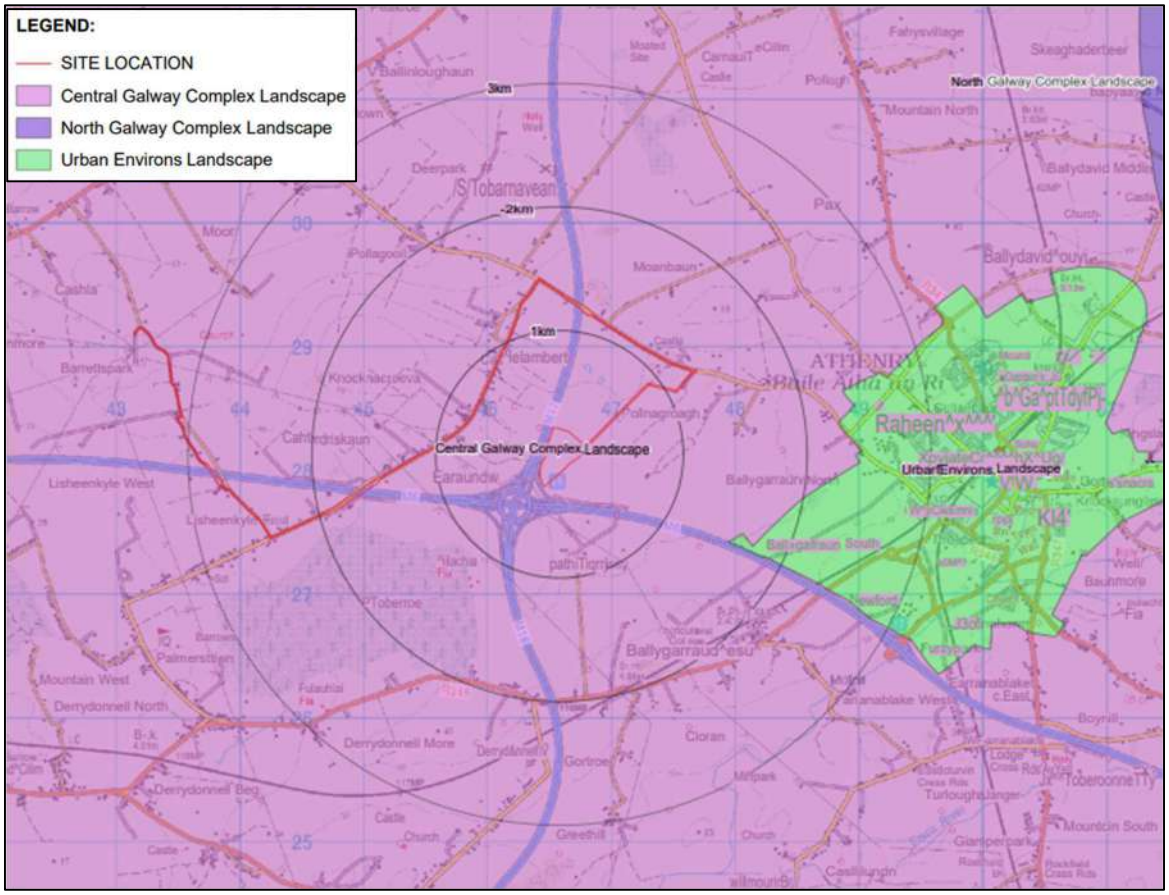


Fig. 30: Landscape Character Types Map (Source: LVIA Appendix 6)]

The photomontages and baseline viewpoint photography submitted as part of the LVIA further reinforce this context. Viewpoints 01, 02 and 05, for example, illustrate expansive tracts of actively managed agricultural land, characterised by low vegetation, uninterrupted field patterns, and a general absence of vertical or industrial elements within the landscape. These views demonstrate a landscape whose defining characteristics are openness, continuity of agricultural use, and a strong sense of rural coherence.

Fig. 31: Representative Viewpoint (VP03 & VP05) showing agricultural baseline (Source: LVIA Appendix 6)]

Against this baseline, the introduction of a large-scale peaker plant constitutes a profound and permanent alteration of land use. The proposed development is not ancillary to agriculture, nor does it reflect the established pattern of rural development. Instead, it represents a heavy industrial use, characterised by substantial built form, engineered surfaces, lighting, and continuous operational activity. This introduces a fundamentally different land use typology into an area defined by agricultural productivity and rural amenity.

There is an inherent and irreconcilable conflict between the proposed industrial infrastructure and the existing agricultural function of the site. Agricultural land is, by its nature, an active and productive resource which supports both local livelihoods and broader rural economic activity. The EIAR does not meaningfully engage with

the loss of this function. The conversion of agricultural land to industrial use represents not simply a visual change, but a permanent removal of land from productive use. This is not a temporary or reversible impact; once developed, the site is effectively sterilised from future agricultural activity for the lifetime of the project and beyond.

The LVIA material demonstrates that the surrounding landscape is not characterised by industrial or infrastructural development of a comparable scale. While there is some influence from existing infrastructure (including the motorway corridor visible in certain viewpoints), this does not alter the underlying agricultural character of the wider landscape, which remains the dominant and defining feature. The proposed development would therefore introduce an incongruous and dominant industrial feature into a landscape that is otherwise cohesive in its rural and agricultural identity.

Furthermore, the scale and nature of the proposed development would give rise to a fragmentation of the agricultural landscape. The introduction of built infrastructure, access roads, and associated works would disrupt established field patterns and sever the continuity of agricultural land parcels. This has implications not only for the immediate site, but also for adjoining lands, where farming operations may be constrained or indirectly affected by proximity to industrial activity.

The long-term implications for rural economic viability must also be considered. Agriculture in this area is not merely a land use, but a core component of the local economy and cultural landscape. The introduction of a large-scale industrial facility has the potential to undermine this function, both directly through land take and indirectly through impacts on amenity, perception, and compatibility with farming practices. The EIAR does not provide any meaningful assessment of these effects.

It is also notable that the LVIA relies, in part, on proposed mitigation planting to integrate the development into the landscape over time. However, this approach implicitly acknowledges the incompatibility of the development with its receiving environment. Moreover, such mitigation is inherently uncertain and long-term in nature, with meaningful screening only occurring after a period of years, if at all. In the interim, and potentially for the majority of the operational lifespan of the development, the industrial character of the site would remain prominent and visually discordant.

In summary, the proposed development represents a clear and fundamental departure from the established agricultural land use and rural character of the area. The transformation of productive farmland into a permanent industrial site constitutes an inappropriate and unjustified industrialisation of the rural landscape. The EIAR fails to adequately assess the significance of this land use change, the loss of agricultural function, and the broader implications for rural character and economic activity. As such, it materially understates the extent of the impact and does not provide a sufficient evidential basis to support the proposed development.

7.3.2 Landscape and visual impact

The proposed development introduces a substantial concentration of large-scale industrial structures into an open rural landscape which is inherently sensitive to visual change. The LVIA confirms that the receiving environment is characterised by low-lying agricultural land with relatively limited topographical variation, thereby facilitating long-range visibility across the surrounding area. In such landscapes, even moderately scaled vertical elements can become visually prominent; the introduction of multiple industrial structures of significant height and massing represents a step change in visual terms.

The proposed development includes a range of substantial built elements, including stacks, plant infrastructure, and associated industrial components, which will extend well above the prevailing height of existing landscape features such as hedgerows, agricultural buildings, and tree lines. These elements will introduce new vertical markers into a landscape that is currently defined by predominantly horizontal field patterns and low vegetation. This contrast in scale and form will result in a development that is inherently conspicuous and visually discordant.

Fig. 32: LVIA Photomontage showing proposed development (Source: LVIA Appendix 6)]

The Zone of Theoretical Visibility (ZTV) mapping included within the LVIA demonstrates that the proposed development has the potential to be visible over a wide geographical area, extending across multiple kilometres. While the LVIA attempts to qualify this through reference to "visual buffers," including vegetation and built form, this does not adequately reflect the reality of the receiving environment. Field boundaries in the area are typically defined by low hedgerows and intermittent tree planting, which provide only partial and seasonal screening. As such, filtered or intermittent views of the development are likely to be widely available, particularly during winter months when vegetation cover is reduced.

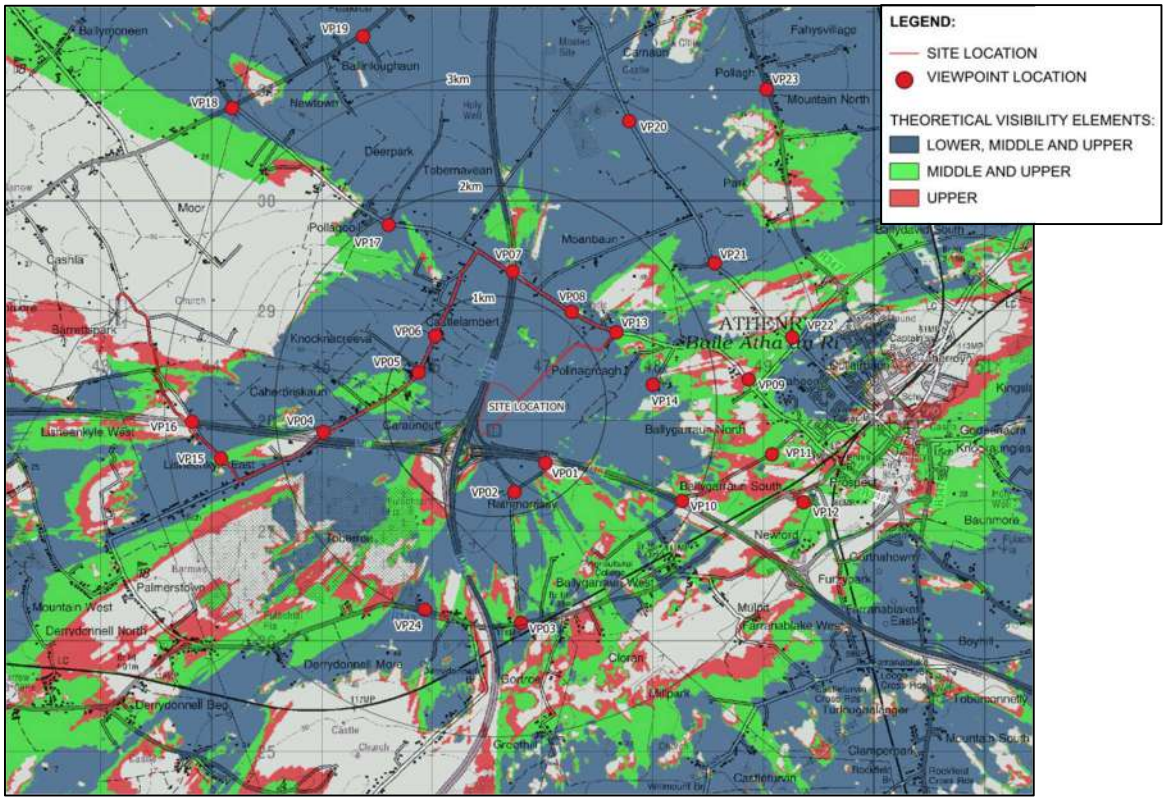


Fig. 33: Zone of Theoretical Visibility (ZTV) Map (Source: LVIA Appendix 6)

The ZTV illustrated in Fig. 33 has been generated using high-resolution terrain data derived from Tailte Éireann LiDAR Digital Terrain Model (DTM). A standard viewer eye height of 1.60m above ground level has been applied in the visibility calculations.

Target heights for the proposed development were derived from the elevation drawings (in metres AOD), with a total of 32 representative target points used to reflect the range of built elements within the scheme. These were categorised as follows:

- **Lower elements:** 0 – 11.4m above ground level (AGL)
- **Middle elements:** 11.4 – 20m AGL
- **Upper elements:** 20 – 36m AGL

The ZTV mapping identifies areas from which one or more of these elements may theoretically be visible, as indicated in the legend.

It is important to note that the ZTV represents a **worst-case theoretical scenario**, as it does not account for the screening effects of existing buildings, vegetation, or other localised features within the study area. However, the calculation does incorporate the effects of the curvature of the earth and atmospheric light refraction, and is based on precise computational methods rather than simplified or approximate modelling techniques.

Accordingly, the ZTV provides a robust and reliable indication of the potential geographical extent of visibility of the proposed development.

The viewpoint analysis submitted within the LVIA further illustrates the openness of the landscape and the limited capacity for effective screening. Multiple viewpoints (including Viewpoints 02, 05, and 08) show expansive agricultural fields with minimal vertical enclosure and clear sightlines towards the site location. In such conditions, the introduction of large-scale industrial structures will not be contained within the immediate site but will instead be perceptible across the wider landscape, including from public roads and residential receptors.

The EIAR places undue reliance on mitigation planting as a means of reducing visual impact. However, this approach is inherently limited in effectiveness. Newly planted vegetation requires a prolonged establishment period before any meaningful screening is achieved, and even at maturity, such planting is unlikely to fully obscure structures of the scale proposed. Furthermore, the reliance on planting does not address the fundamental issue of scale disparity between the proposed development and the receiving landscape.

In addition to daytime visual impacts, the EIAR fails to adequately assess the implications of night-time effects. The operation of the proposed development will necessitate artificial lighting for safety, security, and operational purposes; however, no meaningful night-time visualisations or photomontages have been provided to illustrate how the development would appear after dark. This represents a significant omission in the assessment.

In a rural environment characterised by low baseline light levels, even moderate levels of artificial illumination can result in pronounced visual intrusion. The proximity of the motorway corridor already introduces a degree of background lighting; however, the addition of a further, continuously illuminated industrial site will contribute to cumulative light pollution, increased skyglow, and a progressive erosion of the rural night-time character. In the absence of visual evidence or detailed assessment, the true extent of these impacts has not been properly evaluated and is likely understated.

A further critical deficiency in the LVIA relates to the assessment of cumulative and long-range visual effects. While the EIAR acknowledges the presence of existing infrastructure, including the nearby motorway, it does not meaningfully assess how the proposed development will interact with this infrastructure in visual terms. The combined presence of transport infrastructure, substations, and the proposed industrial facility has the potential to create a consolidated corridor of urbanising influence within an otherwise rural landscape. This cumulative effect is not robustly assessed.

Similarly, the LVIA does not adequately address long-distance views beyond the immediate study area. The ZTV mapping indicates theoretical visibility at distances extending well beyond the primary assessment radius; however, there is limited corresponding viewpoint analysis to verify and assess these impacts in practice. This represents a notable gap in the assessment, particularly given the open nature of the landscape and the potential for elevated or unobstructed viewpoints in the wider area.

Overall, the landscape and visual assessment is characterised by a consistent tendency to downplay the extent of likely impacts through reliance on screening assumptions and limited viewpoint representation. The evidence presented within the EIAR, including the ZTV mapping and baseline photography, in fact demonstrates that the proposed development will be widely visible and will introduce a prominent and incongruous industrial feature into a sensitive rural landscape.

Accordingly, it is submitted that the EIAR fails to provide a robust, comprehensive, or credible assessment of landscape and visual effects. The scale, visibility, and incongruity of the proposed development give rise to

significant adverse impacts on the character and visual amenity of the area, which have not been adequately mitigated or justified.

7.3.3 Impact on rural character, amenity and sense of place

The receiving environment is characterised by a distinctly rural sense of place, defined not only by its physical attributes but also by its experiential qualities, including tranquillity, low levels of activity, and a strong connection to agricultural land use. The LVIA baseline photography and viewpoint analysis consistently demonstrate a landscape of quiet, dispersed settlement, bounded fields, and limited built form, where the prevailing character is one of openness and relative isolation from intensive development.

The introduction of the proposed development would fundamentally alter this character. The transition from a quiet rural environment to one influenced by large-scale industrial infrastructure represents a profound change in the way the landscape is experienced. This is not simply a visual effect, but a broader transformation encompassing noise, lighting, activity levels, and the perception of the area as an industrialised rather than rural place.

A defining attribute of the existing landscape is its tranquillity. Background noise levels are low and largely intermittent, arising from agricultural activity and passing traffic. The proposed development introduces a continuous operational presence, including plant operation, vehicular movement, and associated activity, which will erode this tranquillity. The LVIA does not adequately engage with this qualitative dimension of impact, instead focusing predominantly on visual considerations. However, tranquillity is a recognised component of landscape character and is central to the amenity value of rural areas.

The perception of industrialisation is a key and under-assessed impact. The presence of large-scale plant infrastructure, visible stacks, security lighting, and associated movement will alter how the area is perceived by residents and road users. Even where direct views of the development are partial or intermittent, the awareness of its presence—through glimpsed views, lighting, noise, and traffic—will contribute to a sense that the area has shifted from a rural to a semi-industrial character. This perceptual change is particularly significant in landscapes that are currently coherent and unified in their agricultural identity.

The impacts on residential amenity extend beyond immediate visual receptors. Many dwellings in the surrounding area are oriented towards the open countryside, deriving amenity not only from specific views but from the overall character and quality of the environment. The introduction of an industrial facility within this setting will diminish this amenity value, even where direct visibility is limited. This reflects the broader concept of "place-based" impact, whereby the quality of the environment as experienced by residents is altered in a holistic sense.

Fig. 34: Representative Viewpoint (VP03 & VP05) showing agricultural baseline (Source: LVIA Appendix 6)

The LVIA adopts a relatively narrow definition of impact, focusing on identified viewpoints and visual receptors. However, the effects of the proposed development will extend well beyond these discrete locations. The road network, which provides extensive public access through the landscape, will experience repeated and sequential views of the development. Similarly, agricultural lands and private properties throughout the area will be affected by the broader change in landscape character. This wider experiential impact is not adequately captured within the EIAR.

In addition, the introduction of artificial lighting will contribute to a perceptible change in the character of the area during night-time hours. Rural environments are typically characterised by low ambient light levels and dark skies. The addition of continuous industrial lighting will alter this condition, introducing an urbanising influence and further reinforcing the perception of industrialisation.

The cumulative effect of these changes is a degradation of rural character and a loss of sense of place. The area will no longer be experienced as a predominantly agricultural landscape, but rather as one influenced by industrial activity. This represents a significant and irreversible change, which is not adequately acknowledged or assessed within the EIAR.

In summary, the proposed development gives rise to a fundamental and adverse transformation of rural character, amenity, and sense of place. The EIAR fails to adequately consider these qualitative and experiential dimensions, instead adopting a limited and reductionist approach to landscape assessment. The resulting impacts on residents and the wider community are therefore significantly understated.

7.3.4 Cultural heritage and archaeological potential

The proposed development is located within a rural landscape which, by its nature, has a high potential to contain both recorded and previously unrecorded archaeological features. Agricultural landscapes in Ireland frequently retain subsurface archaeological remains, including ringforts, enclosures, field systems, fulachtaí fia, and burial features, many of which may not be readily visible at surface level. The absence of visible features within the immediate site cannot therefore be taken as evidence of absence, particularly in a landscape that has been subject to long-term agricultural use and modification.

The LVIA mapping and broader EIAR documentation confirm that the site is situated within a historically evolved rural landscape, characterised by longstanding patterns of land division and settlement. Such landscapes are inherently sensitive from an archaeological perspective, as they often preserve evidence of earlier habitation and land use beneath the current agricultural surface. The potential for previously unidentified archaeological remains within the site must therefore be regarded as significant.

In this context, a precautionary approach is required. The EIAR does not demonstrate that sufficient archaeological investigation has been undertaken to definitively rule out the presence of subsurface remains across the entirety of the development footprint, including areas associated with construction works, access roads, and underground services. Given the scale and extent of ground disturbance proposed, there is a clear risk that archaeological features could be damaged or destroyed in the absence of comprehensive prior investigation.

Beyond the immediate site, there is also a need to consider the wider archaeological landscape. Rural areas such as this are often characterised by dispersed archaeological features which contribute collectively to an understanding of historic settlement patterns and land use. Even where individual features are not directly impacted, the introduction of large-scale industrial development can affect their setting and context. This includes impacts on how such features are experienced, understood, and interpreted within the landscape.

Fig. 35: Areas of Archaeological potential located within the site (Source: EIAR Figure 13-8)

Table 13-13 - Areas of Archaeological Potential located within the proposed project site

CH ID	ID No.	Short Description
CH047	Anomaly 1	Possible pits/deposits. May contain burnt/fired material in their fills. Anomalies extend over an area measuring about 14 m NE–SW by 13 m NW–SE. Interpretation is cautious. Natural origin also possible.
CH048	Anomaly 2	Possible spread of burnt/fired material (c.19 m NW–SE by 11 m NE–SW). Interpretation is cautious. Natural origin also possible.
CH049	Anomaly 3	Possible spread of burnt/fired material (c.19 m NE–SW by 15 m NW–SE). Tentative interpretation. Natural origin also possible.
CH050	Anomaly 4	Possible spreads of burnt/fired material. Extends over an area measuring about 37 m NE–SW by 24 m NW–SE. Tentative interpretation. Natural origin also possible.
CH051	Anomaly 5	Possible spread of burnt/fired material (c.13 m in diameter). Interpretation is cautious. Natural origin also possible.
CH052	Anomaly 6	Possible spread of burnt/fired material (c.17 m in diameter). Interpretation is cautious. Natural origin also possible.
CH053	Anomaly 7	Potential pit/deposit (c. 3 m in diameter). Magnetic strength (up to 85 nT) suggests presence of burnt/fired material such as that potentially associated with an archaeological oven-type feature.
CH054	AAP01	Possible pits/deposits; most frequent in northern part of site. Some may contain burnt/fired material in their fill. Significance uncertain. Nature (soil) origin possible.
CH055	AAP02	May reflect imported material for land reclamation or dumping and/or ground disturbance. An archaeological origin cannot be discounted.
CH056	AAP03	Wet, marshy land on the First Edition 6-inch and 25-inch sheets

Fig. 36: Table of areas of Archaeological potential located within the site (Source: EIAR Table 13-13)

The EIAR does not adequately address these indirect impacts. The setting of archaeological features is a key component of their significance, particularly in rural landscapes where their relationship with the surrounding agricultural land is integral to their interpretation. The introduction of industrial infrastructure has the potential to disrupt this relationship, diminishing the legibility of the historic landscape and eroding its cultural value.

In addition, insufficient regard is given to the historic setting of Athenry and the contribution of the surrounding rural landscape to its cultural heritage context. The site forms part of the wider setting of historic Athenry, and this relationship is not adequately assessed within the EIAR. A recorded ringfort (GA084-065), located approximately 100m from the site, represents a key archaeological feature whose setting and landscape context are not properly evaluated. Furthermore, the EIAR identifies geophysical anomalies (refer Table 13-13) and evidence of land modification within the site; however, it does not clarify the origin or authorisation of such alterations, nor does it assess their archaeological implications. This introduces uncertainty into the baseline environment and undermines confidence in the completeness and reliability of the archaeological assessment.

Furthermore, the cumulative impact of development within the wider area must be considered. The incremental introduction of infrastructure can lead to a gradual loss of historic landscape character, within which archaeological features are embedded. This process is not adequately assessed within the EIAR, which adopts a largely site-specific and feature-specific approach rather than considering the cultural landscape as a whole.

In the absence of a robust and precautionary assessment, it cannot be concluded that the proposed development will avoid significant impacts on archaeological and cultural heritage resources. The EIAR fails to fully account for the likelihood of unknown subsurface remains, the sensitivity of the receiving environment, and the potential for both direct and indirect effects on cultural heritage.

Accordingly, it is submitted that the assessment of cultural heritage and archaeological potential is incomplete and does not provide a sufficient evidential basis to demonstrate that significant adverse impacts can be avoided.

7.3.5 Impact on historic landscape and townland identity

The proposed development must be considered within the context of the historic landscape structure of the area, which is intrinsically linked to the townland system. Townlands represent one of the oldest and most enduring spatial frameworks in rural Ireland, reflecting historic patterns of land division, ownership, and

agricultural use. This structure is not only administrative but also cultural, underpinning local identity, community association, and the legibility of the landscape.

The LVIA confirms that the receiving environment is characterised by a coherent pattern of agricultural fields, defined by hedgerows, stone walls, and long-established boundaries. These features are not arbitrary; they are the physical manifestation of historic landholding patterns which have evolved over centuries. The continuity of these patterns contributes significantly to the distinct identity and character of the area.

The proposed development would disrupt this continuity. The introduction of a large-scale industrial site, together with associated infrastructure such as access roads, service corridors, and engineered surfaces, would fragment the existing field pattern and erode the clarity of historic land divisions. This represents not merely a physical change, but a disruption of the historic landscape structure that defines the townland.

Fig. 37: Aerial satellite image showing field patterns (Source: Bing maps, annotated by BPS)

The continuity of land use is also a critical component of townland identity. The site and its surroundings have historically functioned as agricultural land, contributing to a landscape that is both productive and culturally meaningful. The permanent conversion of part of this landscape to industrial use represents a break in that continuity. Such a break is not easily reconciled, as industrial development introduces a fundamentally different form, scale, and function that is unrelated to the historical evolution of the landscape.

The perception of the townland as a cohesive rural unit will be altered as a result. The presence of industrial infrastructure—particularly where it is visually prominent or associated with lighting, movement, and noise—introduces an incongruous element that does not align with the established character of the area. This has the effect of diluting the identity of the townland, shifting it from a recognisably rural and agricultural landscape towards one influenced by industrial activity.

This incongruity is particularly pronounced given the scale of the proposed development. Unlike traditional rural buildings, which are typically modest in scale and integrated within the landscape, the proposed structures will present as dominant and visually assertive elements. Their form, materials, and function bear no relationship to the historic built or landscape character of the area, reinforcing their status as alien features within the townland context.

The EIAR does not adequately address these issues. While it considers landscape and visual effects in a general sense, it does not engage with the concept of historic landscape character or the importance of maintaining the integrity of townland structures. This represents a notable omission, particularly in an Irish rural context where such considerations are central to understanding landscape sensitivity.

In addition, there is a failure to consider how the proposed development may set a precedent for further erosion of townland identity. The introduction of large-scale infrastructure into a historically coherent landscape can lead to incremental change, whereby the cumulative effect of development gradually undermines the defining characteristics of the area.

In summary, the proposed development would result in a significant and adverse impact on the historic landscape structure and townland identity of the area. The disruption of established field patterns, the break in continuity of land use, and the introduction of incongruous industrial infrastructure collectively represent a fundamental alteration of the landscape's historic and cultural framework. The EIAR fails to adequately assess or acknowledge these impacts, and accordingly understates the significance of the effect.

7.3.6 Cumulative and long-term effects

The proposed development must be assessed not only in isolation, but in the context of its cumulative and long-term effects on the receiving environment. In this regard, the development gives rise to significant concerns relating to the permanent transformation of the landscape, its interaction with existing infrastructure, and the broader trajectory of change within the area.

A defining characteristic of the proposed development is its permanence. Unlike temporary or reversible land uses, the construction of a large-scale industrial facility represents a long-term, effectively irreversible alteration of the site. The conversion of agricultural land to industrial use will endure for the operational lifespan of the development and, in practical terms, beyond. This permanence amplifies the significance of all associated impacts, particularly in a rural landscape where change is typically gradual and incremental.

The site does not exist in isolation, but within a landscape already influenced by infrastructure, including the nearby motorway corridor and associated energy infrastructure. While the EIAR acknowledges these elements, it fails to adequately assess how the proposed development will interact with them to create a cumulative effect. The introduction of an additional large-scale industrial facility has the potential to consolidate and intensify an emerging pattern of infrastructural development, resulting in the formation of a broader infrastructure corridor within the rural landscape.

This cumulative effect is not simply additive, but transformative. The combined presence of transport infrastructure, energy infrastructure, and industrial development can fundamentally alter the perception and function of an area, shifting it from a predominantly rural and agricultural landscape towards a more urbanised or industrialised character. This process is evident in many locations where incremental infrastructure development has, over time, eroded rural identity.

The gradual erosion of rural character is a key long-term concern. Each individual development may be presented as a discrete intervention; however, the cumulative impact of multiple developments can lead to a tipping point beyond which the defining characteristics of the landscape are lost. In this case, the proposed development would contribute to an incremental but perceptible shift in character, reducing the coherence and integrity of the agricultural landscape described in the LVIA.

Furthermore, the proposed development has the potential to establish a precedent for further industrialisation. The introduction of a major piece of infrastructure into a rural area can alter planning expectations and increase the likelihood of additional, similar developments being proposed in the vicinity. This is particularly relevant where supporting infrastructure (such as grid connections or access improvements) is already in place, thereby reducing barriers to future development. The EIAR does not address this risk.

The long-term implications of such a precedent are significant. Over time, the cumulative effect of additional developments could result in a substantial and irreversible transformation of the wider area, with the gradual replacement of agricultural land uses by industrial and infrastructural uses. This would represent a fundamental departure from the established planning and landscape character objectives for rural areas.

It is also notable that mitigation measures proposed within the EIAR, such as landscape planting, are themselves subject to long-term uncertainty. The effectiveness of such measures depends on successful establishment, growth, and maintenance over extended periods, and cannot be guaranteed. Even where successful, such mitigation does not address the underlying issue of cumulative landscape change, but rather seeks to reduce the visibility of individual elements.

In summary, the proposed development gives rise to significant cumulative and long-term effects which are not adequately assessed within the EIAR. The permanent nature of the development, its interaction with existing infrastructure, and its contribution to the gradual erosion of rural character collectively represent a substantial and enduring impact on the landscape. The potential for the development to set a precedent for further industrialisation further amplifies these concerns. Accordingly, the EIAR fails to provide a robust assessment of the long-term implications of the proposed development.

7.3.7 Failure of the EIAR to adequately assess landscape and cultural impacts

The EIAR, including Chapter 6 and the accompanying LVIA material, fails to provide a robust, transparent, and policy-compliant assessment of the full extent of landscape and cultural impacts arising from the proposed development. This failure arises from a combination of underestimation of the permanent nature of the development, insufficient consideration of cumulative and infrastructural interactions, and a lack of meaningful evaluation of long-term landscape change and precedent effects.

Firstly, the assessment does not adequately address the permanent and non-reversible nature of the proposed development. The scheme comprises substantial industrial infrastructure introduced into an established rural landscape, yet the LVIA relies heavily on mitigation assumptions such as planting and screening, including projections of "year 15 growth" scenarios . Such an approach inappropriately defers impact significance into the future and fails to properly assess the immediate and enduring transformation of the receiving landscape. The photomontage methodology itself confirms that where development is screened, it may simply be outlined rather than visible , thereby potentially understating the perceptual and contextual presence of the scheme.

Secondly, there is a clear failure to properly assess the interaction of the proposed development with existing infrastructure, including the nearby motorway corridor and associated energy infrastructure. The viewpoint analysis demonstrates that the site is frequently experienced in conjunction with these elements (e.g. motorway views in Viewpoints 01, 07, 10 and 12), yet the EIAR treats the development largely in isolation. This approach ignores the reality that receptors experience the landscape cumulatively, and that the introduction of additional large-scale energy infrastructure reinforces an emerging pattern of infrastructural encroachment within what remains a predominantly rural and agricultural setting.

Thirdly, the EIAR does not adequately consider the gradual erosion of rural character and townland identity arising from incremental change. The LVIA identifies a broad Zone of Theoretical Visibility extending across a wide rural catchment (as illustrated in the ZTV mapping), yet the narrative assessment does not meaningfully engage with how repeated exposure to such infrastructure contributes to a progressive urbanisation or industrialisation of the countryside. The reliance on isolated viewpoint assessments fails to capture this wider experiential and cultural landscape dimension.

Finally, and most significantly, the EIAR fails to address the precedent effect of permitting further industrial-scale energy infrastructure in this location. The proposed development is not a standalone or neutral intervention; rather, it forms part of an evolving cluster of infrastructure within the wider Athenry area. The absence of any substantive discussion on how this development may facilitate or justify future similar proposals represents a serious deficiency in the assessment. This is particularly important in a landscape characterised by historic field patterns, dispersed settlement, and strong townland identity, where incremental change can cumulatively result in a fundamental and irreversible alteration of landscape character.

In summary, the EIAR does not provide a sufficiently comprehensive or precautionary assessment of landscape and cultural impacts. It underestimates the permanent and transformative nature of the development, fails to properly assess cumulative infrastructural interactions, and does not engage with the long-term erosion of rural character or precedent-setting implications. As such, it falls short of the requirements for a reasoned and evidence-based environmental assessment.

7.3.8 Failure of the EIAR and LVIA to be publicly accessible and to adequately inform residents of impacts

The EIAR documentation, and in particular Chapter 6 (Landscape and Visual), is structured in a manner that significantly undermines transparency and public accessibility. Critically, Chapter 6 itself contains no meaningful visual material, with the substantive assessment of landscape and visual effects deferred to Appendix 6 (LVIA drawings, photomontages and visualisations) provided in separate volumes . This fragmented approach creates an artificial separation between assessment and visual evidence, making it unnecessarily difficult for readers to understand the true extent of visual impacts.

The LVIA material is presented across multiple large-format appendices containing technical drawings, ZTV mapping and numerous photomontages, which are not intuitively structured or easily navigable. Even for experienced planning professionals familiar with EIAR and LVIA documentation, the process of locating, correlating and interpreting the relevant visual information is unduly onerous. It follows that members of the public—particularly local residents most directly affected by the proposed development—would be placed at a clear disadvantage in attempting to engage meaningfully with the material.

This lack of accessibility is especially problematic given that visual impact is typically one of the primary concerns for local communities. The manner in which the information is presented creates a real risk that key impacts are not readily understood or are effectively obscured within the volume and complexity of documentation. As a result, the EIAR fails to fulfil its core function of clearly and transparently communicating the likely significant effects of the development to the public, contrary to the principles of informed participation underpinning the EIA process.

7.3.9 Conclusion

The proposed development represents a profound and unjustified intrusion into a sensitive rural landscape, resulting in significant adverse impacts on landscape character, visual amenity, cultural heritage, and the established identity of the area. The evidence demonstrates that the site forms part of a coherent agricultural landscape, deeply rooted in historic field patterns, longstanding land use, and the townland structure which underpins rural identity in Ireland.

The development would introduce an incongruous and dominant industrial feature into this landscape, fundamentally disrupting its character and eroding its sense of place. The permanent loss of agricultural land, the fragmentation of historic field patterns, and the imposition of large-scale infrastructure are not impacts that can be effectively mitigated. Rather, they represent an irreversible transformation of the receiving environment. The full impacts of the proposed significant 36-metre-tall telecoms mast is not adequately considered in the LVIA of EIAR.

Furthermore, the EIAR fails to adequately assess these impacts in a transparent, comprehensive, or accessible manner. It understates the scale and extent of visual and landscape effects, does not properly consider cumulative and long-term change, and fails to meaningfully engage with the cultural and experiential dimensions of the landscape, including the importance of townland identity and continuity of land use.

In addition, the proposed development risks establishing a precedent for further industrialisation of the area, thereby accelerating the gradual erosion of rural character and undermining the integrity of the wider landscape. In light of these deficiencies, and having regard to the significant and permanent impacts identified, it is respectfully submitted that the proposed development is inappropriate in this location and contrary to the proper planning and sustainable development of the area. **Accordingly, there are clear, robust, and compelling grounds for refusal of permission on landscape, visual, and cultural heritage grounds.**

7.4 Ground 4: Hydrogeology, Groundwater, and Water Quality

7.4.1 Vulnerability of the karst limestone aquifer

The EIAR and accompanying Flood Risk Assessment (FRA) significantly understate the hydrogeological sensitivity of the subject site, which is demonstrably underlain by karstified limestone bedrock. The applicant's own assessment confirms the presence of "karstified bedrock outcrop or subcrop" within and surrounding the site area (refer to Figure 4-4 and Figure 4-5 of the FRA), yet fails to meaningfully engage with the implications of this geological context for groundwater vulnerability and contaminant transport pathways .

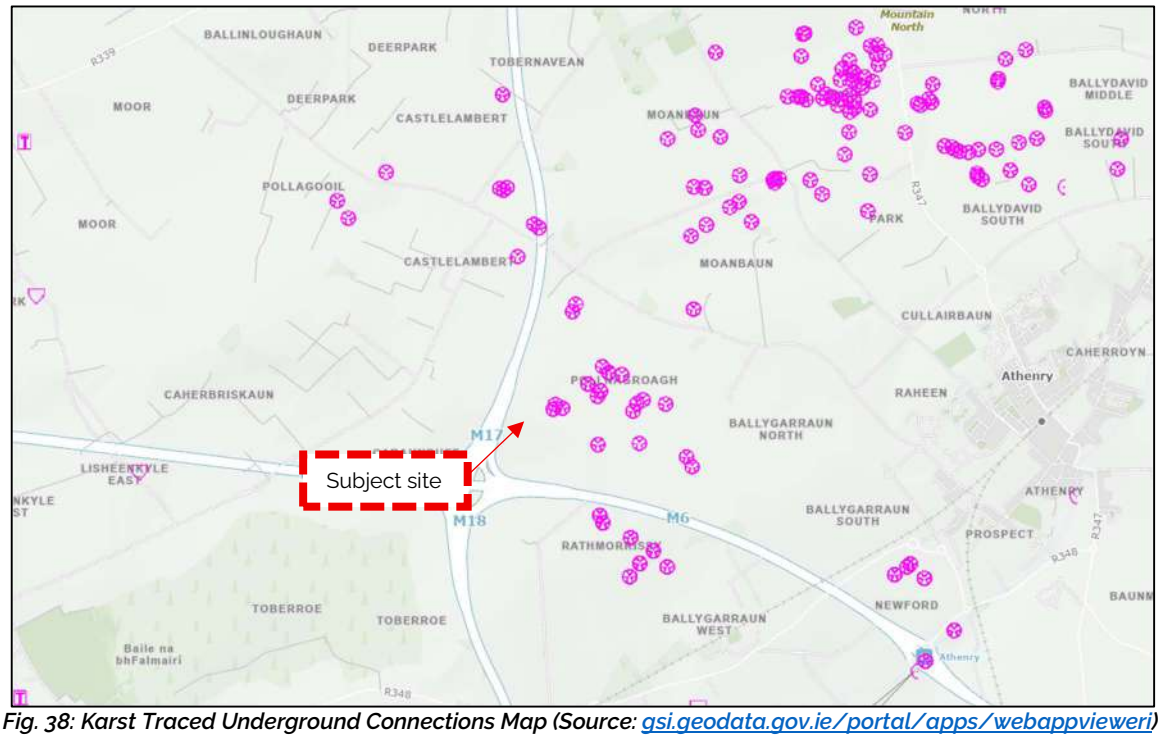


Fig. 38: Karst Traced Underground Connections Map (Source: gsi.geodata.gov.ie/portal/apps/webappviewer)

Karst aquifers are internationally recognised as **highly vulnerable hydrogeological environments**, characterised by enlarged fissures, conduits, and solution channels which facilitate rapid and often unpredictable groundwater flow. In such settings, the natural attenuation capacity of soils and subsoils is frequently limited or absent,

meaning that contaminants can bypass filtration processes and travel significant distances in short timeframes. Despite this well-established scientific understanding, the EIAR adopts an overly simplistic and dismissive approach, relying on the absence of recorded groundwater flooding or mapped springs to conclude that risk is negligible.

This approach is fundamentally flawed. The FRA explicitly concludes that groundwater flooding is "not significant" on the basis that "no significant springs or groundwater discharges [are] recorded in the immediate vicinity of the proposed site" . However, in karst terrains, **the absence of mapped features does not equate to absence of risk**. Groundwater pathways in such systems are often unmapped, seasonally variable, and highly sensitive to localised recharge conditions. The reliance on desk-based datasets alone, without detailed site-specific hydrogeological investigation (e.g. tracer testing, borehole monitoring, or dye studies), represents a material deficiency in the assessment.

Furthermore, the EIAR fails to adequately consider the interaction between the identified karst geology and the proposed development's design characteristics, including hardstanding, fuel storage, drainage infrastructure, and potential pollutant sources. The introduction of extensive impermeable surfaces and engineered drainage systems within a karst environment can significantly alter natural recharge patterns, potentially increasing the risk of **focused infiltration and rapid contaminant entry into the aquifer**.

The inadequacy of the assessment is compounded by the premature conclusion of the flood risk process at **Stage 1**, with the FRA explicitly stating that "the flood risk study will not need a Stage 2 Initial flood risk assessment as the proposed site is not at risk of flooding" . This conclusion fails to recognise that the Guidelines require consideration of **all sources of flood risk**, including groundwater flooding and subsurface flow dynamics, particularly in complex geological settings. Given the confirmed presence of karst features, a more detailed Stage 2 (and potentially Stage 3) assessment would be necessary to robustly characterise groundwater behaviour and associated risks.

In addition, the EIAR places undue reliance on the classification of the site within Flood Zone C, which relates primarily to fluvial and coastal flooding. This designation does not address groundwater vulnerability or contamination risk and is therefore **not an appropriate basis upon which to dismiss hydrogeological concerns** in a karst setting.

Overall, the EIAR fails to adopt a precautionary, evidence-based approach commensurate with the known sensitivity of karst aquifers. The absence of detailed hydrogeological investigation, combined with an over-reliance on limited desk-based data and inappropriate screening conclusions, results in a material underestimation of risk to groundwater quality. This represents a significant deficiency in the environmental assessment and undermines the reliability of the conclusions presented.

7.4.2 Risk of rapid contaminant migration

The EIAR fails to adequately assess the risk of rapid contaminant migration arising from the proposed development, particularly in the context of the karstified limestone geology identified beneath and surrounding the site. As established in the accompanying FRA, the site is underlain by karstified bedrock formations , which are characterised by fissures, conduits, and preferential flow pathways capable of transmitting groundwater – and any entrained contaminants – over considerable distances with minimal attenuation.

Despite this, the EIAR adopts a largely generic and qualitative approach to groundwater risk, without undertaking any detailed modelling or scenario analysis to demonstrate how contaminants would behave in such a hydrogeologically sensitive environment. There is a notable absence of any **quantified worst-case assessment**, including scenarios involving accidental releases of fuels, lubricants, firewater runoff, or other hazardous substances associated with the operation of a peaker plant and its ancillary infrastructure.

This omission is particularly significant having regard to the nature of the proposed development, which includes fuel storage, transformer infrastructure, chemical handling, and drainage systems. In a karst environment, even a relatively minor spill event has the potential to result in **rapid and uncontrolled migration of pollutants**, with limited opportunity for interception or remediation once contaminants enter the subsurface. The EIAR does not demonstrate how such risks would be effectively contained, nor does it provide evidence that the proposed mitigation measures have been designed with specific regard to karst hydrogeology.

Furthermore, the assessment fails to consider the potential for **direct hydraulic connectivity** between the site and surrounding groundwater receptors, including private wells and agricultural water supplies. Given the absence of detailed hydrogeological characterisation (such as tracer testing or groundwater flow mapping), it cannot be assumed that contaminants would remain confined to the immediate site area. On the contrary, karst systems are inherently unpredictable, and pollutant pathways may extend well beyond the development boundary.

The EIAR also places undue reliance on the absence of recorded groundwater flooding or mapped discharge features to infer limited risk. However, as noted previously, such datasets are inherently incomplete in karst

terrains and do not capture subsurface flow dynamics. The failure to interrogate these uncertainties or apply a precautionary approach further undermines the robustness of the assessment.

In this context, the EIAR materially underestimates the likelihood and potential consequences of contaminant migration. The absence of a detailed, site-specific assessment of pollutant pathways, travel times, and receptor linkages represents a significant deficiency, particularly given the sensitivity of the receiving hydrogeological environment.

7.4.3 Potential Impacts on Private Wells and Agricultural Water Supplies

The EIAR fails to provide a robust, site-specific, or evidence-based assessment of the potential impacts of the proposed development on private groundwater wells and agricultural water supplies. This omission is particularly serious given the rural context of the receiving environment, which is characterised by dispersed settlement and a well-established reliance on **private, unregulated groundwater abstractions** for both domestic and agricultural purposes.
Critically, the applicant has not undertaken a comprehensive identification or mapping of groundwater receptors within the zone of influence of the proposed development. This represents a fundamental flaw in the assessment. In contrast, publicly available Geological Survey Ireland (GSI) data confirms the presence of multiple groundwater wells and springs in close proximity to the site, including identified abstractions such as Well 1421NVW020, Well 1421NVW017, and Well 1421SWV019.

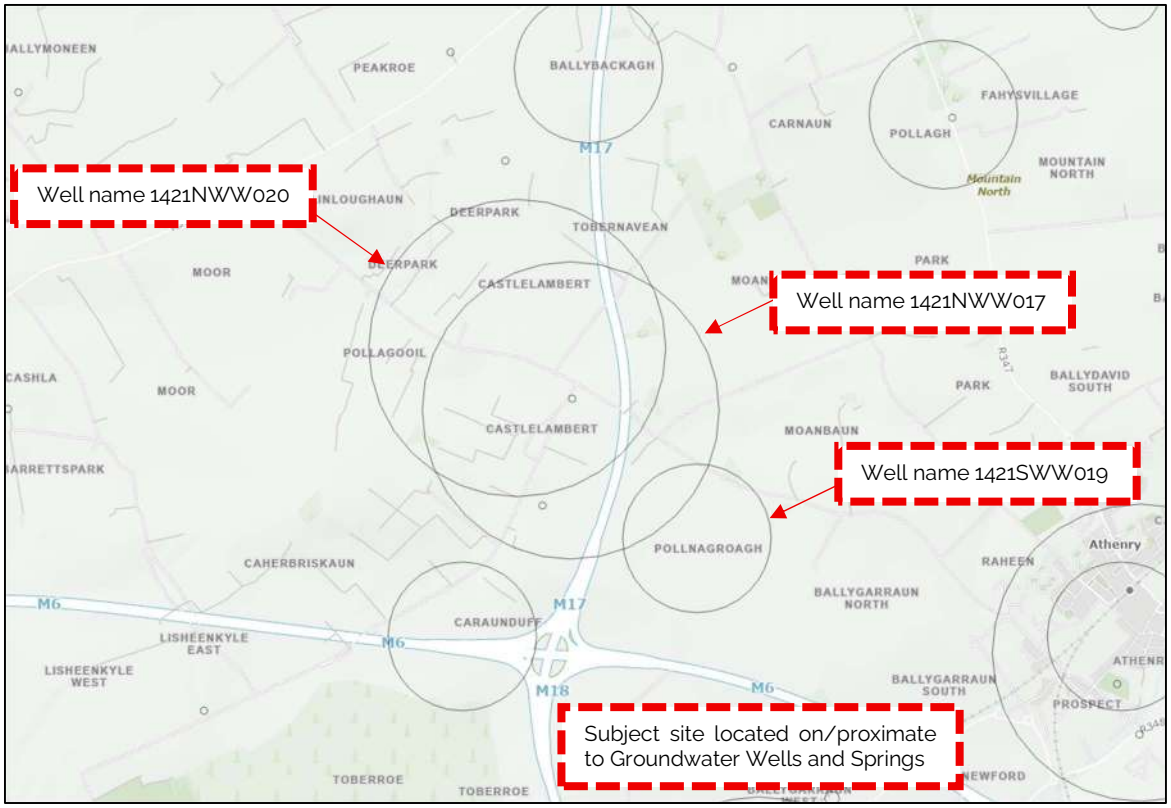


Fig. 39: Groundwater Wells and Springs on/proximate to the subject site (Wells (Source: gsi.geodata.gov.ie /)

As illustrated in Fig. 39, these groundwater features are located within the wider hydrogeological catchment of the site and, importantly, within a karstified limestone environment where subsurface connectivity cannot be assumed to follow surface topography. The EIAR does not incorporate this data into any meaningful receptor-based assessment, nor does it attempt to establish hydraulic linkages between the site and these known abstractions. This omission is particularly concerning given that karst aquifers are characterised by rapid and preferential flow pathways, meaning that contaminants may travel considerable distances and impact receptors well beyond the immediate vicinity of the development.

The EIAR also fails to establish a coherent source–pathway–receptor model, which is a fundamental requirement of hydrogeological risk assessment. While the development clearly introduces multiple potential sources of contamination—including fuel storage, oils, transformers, drainage systems, and construction-related pollutants—there is no corresponding analysis of how contaminants could migrate through the subsurface environment or which receptors may ultimately be affected. In the absence of any detailed hydrogeological characterisation, including groundwater flow direction, connectivity, or travel times, the EIAR cannot reasonably conclude that impacts will be negligible or adequately mitigated.

Furthermore, there is no evidence that the applicant has undertaken any field-based verification or engagement with local receptors. The EIAR does not include surveys of private well locations or usage, baseline water quality sampling, or any assessment of well depth, yield, or aquifer dependency. This lack of baseline data is a critical deficiency. Without understanding the nature, extent, and sensitivity of existing water supplies, it is not possible to assess the magnitude or significance of potential impacts.

The EIAR also fails to consider the potential for impacts on water quantity and supply reliability. Construction activities, including excavation and alterations to drainage patterns, have the potential to disrupt groundwater flow regimes. In a karst environment, such disturbances can result in the redirection of groundwater pathways, potentially affecting the yield and reliability of existing wells. No assessment is provided of these risks, nor are any monitoring or contingency measures proposed to safeguard affected receptors.

In addition, the EIAR does not adequately address the implications of accidental contamination events for private water users. In a karst system, pollutants entering the ground can travel rapidly with little attenuation, meaning that contamination of a private well could occur quickly and without warning. The absence of any receptor-specific mitigation, early warning monitoring, or emergency response framework further exacerbates this risk.
Overall, the EIAR fails to identify, assess, or adequately protect a clearly established and sensitive receptor group. The presence of multiple groundwater wells and springs in proximity to the site, combined with the high vulnerability of the underlying karst aquifer, gives rise to a credible and significant risk to both water quality and supply. The absence of detailed receptor mapping, hydrogeological modelling, and site-specific assessment represents a material deficiency in the EIAR. Accordingly, it is submitted that the potential impacts on private wells and agricultural water supplies have not been properly assessed, and that the proposed development gives rise to an unacceptable and unquantified risk to existing water users.

7.4.4 Construction Phase Risks to Water Quality

The EIAR fails to provide a sufficiently robust, site-specific, or precautionary assessment of the risks to groundwater and water quality arising during the construction phase of the proposed development. While the documentation acknowledges standard construction-related risks, such as fuel spills, concrete washout, sediment runoff, and ground disturbance, it does so in a largely generic manner, without adequately addressing the heightened sensitivity of the receiving environment, which is underlain by karstified limestone geology .

Construction activities associated with the proposed development will involve significant ground disturbance, including excavation, site levelling, installation of drainage infrastructure, and the creation of extensive areas of hardstanding. In a karst environment, such activities have the potential to directly intersect fissures, voids, and preferential flow pathways within the bedrock. This creates a direct hydraulic connection between the surface and the underlying aquifer, significantly increasing the risk that contaminants introduced at ground level could rapidly enter and propagate through the groundwater system with little or no attenuation.

Despite this, the EIAR relies heavily on standard construction mitigation measures, such as bunding of fuel storage, designated refuelling areas, silt fences, and settlement ponds, without demonstrating how these measures have been specifically designed or adapted to account for karst hydrogeological conditions. Such measures may be appropriate in less sensitive geological contexts; however, in highly permeable environments, their effectiveness is inherently limited. The EIAR does not provide any evidence that these mitigation measures have been subject to site-specific risk testing or that their performance has been evaluated under worst-case conditions.

A critical deficiency in the assessment is the absence of any **quantified risk analysis** or **failure scenario assessment**. The EIAR assumes that mitigation measures will function as intended, yet does not consider the consequences of accidental events such as:

- failure of bunding systems;
- leakage from fuel or chemical storage;
- overtopping or malfunction of sediment control measures during heavy rainfall; and
- or accidental discharge of concrete washout or contaminated water.

In a karst setting, the implications of such failures are significantly more severe than in non-karst environments. Once contaminants enter the subsurface, they may travel rapidly along preferential pathways, potentially impacting groundwater receptors at considerable distances from the site. The EIAR does not assess the likelihood, extent, or duration of such impacts, nor does it propose any contingency measures to address them.

Furthermore, the EIAR does not adequately consider the interaction between construction activities and **natural recharge processes**. The introduction of temporary drainage systems, excavation works, and altered surface conditions may result in the concentration of surface water flows and increased infiltration at discrete points. In a karst environment, this can lead to focused recharge, whereby contaminated surface water is rapidly conveyed into the aquifer via fissures or swallow features. There is no evidence that the EIAR has assessed this risk or identified areas of potential vulnerability within the site.

The management of **sediment and suspended solids** also presents a significant concern. Construction-phase runoff can carry fine sediments which, if mobilised into groundwater pathways, may not only degrade water quality but also alter subsurface flow characteristics by clogging fissures or conduits. The EIAR does not assess the potential for such effects, nor does it demonstrate that sediment control measures are sufficient to prevent mobilisation under variable weather conditions.

In addition, the EIAR does not address the risks associated with **concrete works and alkaline runoff**, which are particularly relevant during foundation construction and infrastructure installation. Concrete washout water is highly alkaline and can have significant adverse effects on groundwater chemistry if not properly contained. In a karst environment, where buffering capacity may be limited, even small releases can result in measurable and potentially harmful changes in groundwater quality. The absence of a detailed management strategy for such materials represents a further gap in the assessment.

The lack of **real-time monitoring or early warning systems** during the construction phase is another notable deficiency. Given the sensitivity of the receiving environment, a precautionary approach would require continuous monitoring of groundwater quality and levels, coupled with clearly defined trigger levels and response actions. The EIAR does not propose such measures, nor does it identify responsibility or procedures for responding to contamination events should they occur.

It is also relevant that construction activities are inherently dynamic and subject to variability, including weather conditions, contractor practices, and unforeseen ground conditions. The EIAR does not adequately address how such variability will be managed, nor does it demonstrate that the proposed mitigation framework is sufficiently robust to accommodate deviations from expected conditions.

Overall, the EIAR adopts a standardised and largely theoretical approach to construction-phase risk management, which is not commensurate with the known hydrogeological sensitivity of the site. The reliance on generic mitigation measures, combined with the absence of site-specific design, failure analysis, and monitoring provisions, results in a material underestimation of risk.

In this context, it cannot be concluded that the proposed development will avoid significant adverse impacts on groundwater quality during the construction phase. The potential for rapid contaminant migration, coupled with the lack of robust mitigation and contingency planning, gives rise to a clear and unacceptable risk to the receiving environment and to downstream groundwater receptors.

7.4.5 Long-term protection of groundwater resources

The EIAR fails to demonstrate that groundwater resources will be adequately protected over the full operational lifespan of the proposed development. While the assessment references standard mitigation and design measures, it does not provide a sufficiently detailed, site-specific, or enforceable framework for the **long-term management of groundwater risk**, particularly having regard to the high vulnerability of the receiving environment.

Fig. 40: Groundwater vulnerability mapping in the vicinity of the site (Source: gsi.geodata.gov.ie /)

As illustrated in Fig. 40, the subject site is located within an area classified predominantly as **"Extreme" and "High" groundwater vulnerability**, with zones of rock at or near surface and karst features evident in close proximity. This mapping confirms that the underlying aquifer has little or no natural protective cover, meaning that contaminants entering the ground can rapidly infiltrate and reach groundwater with minimal attenuation. Despite this, the EIAR does not adequately engage with the implications of this vulnerability classification in the context of long-term operational risks.

The proposed development introduces a permanent industrial land use incorporating fuel storage, transformers, drainage systems, and extensive areas of impermeable surfacing. These elements represent ongoing and cumulative sources of potential contamination, rather than isolated or temporary risks. However, the EIAR does not provide a detailed assessment of how these risks will be managed over time, nor does it demonstrate that the design and layout of the development have been informed by the site's hydrogeological sensitivity.

In particular, there is a lack of detail regarding the long-term integrity and maintenance of containment systems, including bunding, interceptors, and drainage infrastructure. While such measures are referenced in principle, the EIAR does not specify inspection regimes, maintenance schedules, or lifecycle replacement strategies. In a highly vulnerable karst environment, even minor degradation of such systems over time could result in direct contamination of groundwater. The absence of a clearly defined maintenance and compliance framework represents a significant weakness in the assessment.

The EIAR also fails to establish a robust and site-specific groundwater monitoring programme. There is no clear commitment to the installation of monitoring boreholes, no defined baseline dataset, and no operational-phase monitoring regime with established trigger levels or response actions. Without such provisions, it cannot be demonstrated that any deterioration in groundwater quality would be detected at an early stage or effectively managed. Furthermore, the assessment does not adequately consider the risk of chronic or low-level contamination over time. While acute spill events are acknowledged in general terms, there is no evaluation of the cumulative impact of minor leaks, system inefficiencies, or gradual deterioration of infrastructure. In a karst aquifer, where groundwater movement is rapid and dispersion pathways are complex, such long-term inputs can result in widespread and persistent degradation of water quality. This risk is not addressed in the EIAR. The EIAR also does not sufficiently examine the interaction between the proposed development and natural recharge processes. The introduction of impermeable surfaces and engineered drainage systems will alter the pattern and

concentration of recharge, potentially increasing the likelihood of focused infiltration of contaminated runoff into the underlying aquifer. This is particularly significant in areas of extreme vulnerability, where direct pathways to groundwater may exist. No detailed assessment of these changes, or their long-term implications, is provided.

In addition, there is no comprehensive consideration of the decommissioning phase and potential legacy impacts. The EIAR does not outline how the site will be remediated at the end of its operational life, nor does it assess the risk of residual contamination or long-term structural failure of containment systems. Given the permanent alteration of the site and the sensitivity of the receiving environment, this represents a further deficiency.

Overall, the EIAR adopts a short-term and mitigation-led approach that is not commensurate with the permanent and high-risk nature of the proposed development in a highly vulnerable karst groundwater setting. The absence of detailed design, monitoring, maintenance, and contingency provisions results in a failure to demonstrate that groundwater resources can be effectively protected over time.

Accordingly, it is submitted that **the EIAR does not provide sufficient evidence to conclude that the long-term protection of groundwater can be ensured**. **On the contrary, the evidence—including the GSI vulnerability mapping—indicates that the site is inherently unsuitable for a development of this nature without a far more rigorous and precautionary assessment. This represents a significant deficiency and gives rise to an unacceptable risk of long-term and potentially irreversible impacts on groundwater quality.**

7.4.5.1 Inadequate ground investigation and karst risk assessment

The submitted EIAR and accompanying technical documentation, including Appendix 11.1 (Ground Investigation Report), do not provide a sufficiently robust or comprehensive assessment of subsurface conditions across the entirety of the proposed development site.

A review of the Ground Investigation Report (Appendix 11.1, pp. 13–14) indicates that boreholes and trial pits appear to have been undertaken only across a portion of the site, with a concentration of investigation points limited to certain areas. There is no clear evidence that intrusive investigations have been carried out at the precise locations of key high-load and high-risk infrastructure, including the proposed turbine units, exhaust stacks, and water storage tanks.

As illustrated in Fig. 40b below, the spatial distribution of boreholes and trial pits appears to be confined to part of the site footprint, with significant areas—particularly those corresponding to critical infrastructure—either lacking coverage or not clearly demonstrated to have been subject to detailed investigation.

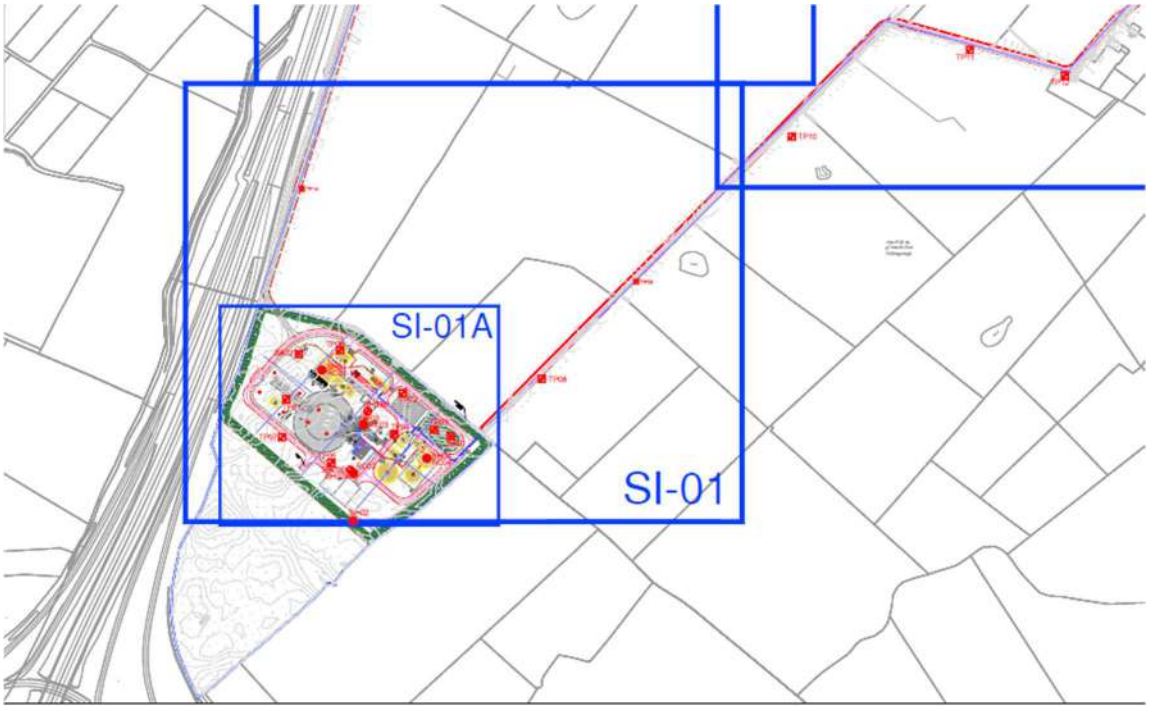


Fig. 40b: Extract from Appendix 11.1 illustrating the spatial distribution of boreholes and trial pits relative to the proposed development layout.

In a karst limestone setting, such as that which characterises the subject site and wider area, this represents a significant deficiency. Karst environments are inherently heterogeneous and are characterised by features such as voids, fissures, conduits and potential sinkhole formation. In such contexts, ground conditions can vary

significantly over short distances. Accordingly, a partial or spatially limited site investigation cannot be relied upon to characterise subsurface risk across the full development footprint.

Furthermore, it is noted that the ground investigation appears to have been undertaken in the context of an earlier iteration of the project design. There is no evidence that the scope or layout of the investigation has been updated to reflect the current design or the finalised positioning of critical infrastructure. This raises further concern as to whether the current proposal is supported by an appropriately targeted and design-specific ground investigation. In the absence of detailed and site-specific geotechnical and geophysical investigation at the locations of critical structures, it has not been demonstrated that the site is free from subsurface voids or instability features that could give rise to structural risk or environmental pathways.

In addition, the documentation does not include any evidence of infiltration testing, soakaway testing, or equivalent site characterisation measures to determine the rate at which liquids could percolate through the underlying karst geology. This omission is particularly significant having regard to the nature of the proposed development, which includes the storage and handling of potentially hazardous substances and process wastewater.

In a karst environment, contaminants can migrate rapidly through subsurface pathways with limited attenuation, posing a significant risk to groundwater and any hydrologically connected receptors. In the absence of site-specific infiltration or permeability testing, it is not possible to assess the potential for accidental releases to enter the groundwater environment, nor the speed and extent of such migration.

The failure to:

- undertake comprehensive ground investigations across the full development footprint,
- target investigations at the locations of critical infrastructure, and
- assess infiltration and contaminant migration potential within a karst system,

represents a significant gap in the EIAR. As such, the Board cannot be satisfied that the risks to groundwater, structural integrity, and environmental receptors have been adequately assessed.

7.4.5.2 Groundwater, karst hydrogeology and GWDTE risk

The EIAR confirms that a Groundwater Dependent Terrestrial Ecosystem (GWDTE), associated with the Galway Bay Complex Fens SAC (SAC000268), is located within the site boundary itself, including beneath parts of the proposed development footprint, access track and cable route.

As illustrated in Fig. X, the proposed development directly overlaps with the mapped extent of the GWDTE and associated groundwater body.
Fig. X: Groundwater bodies underlying the proposed development, including the Galway Bay Complex Fens GWDTE (source: EIAR Figure 12-3).

The EIAR (p.574) explicitly states that:

- the GWDTE underlies part of the site and infrastructure,
- it is directly connected to the Galway Bay Complex Fens SAC, and
- It has been assigned **"extremely high importance."**

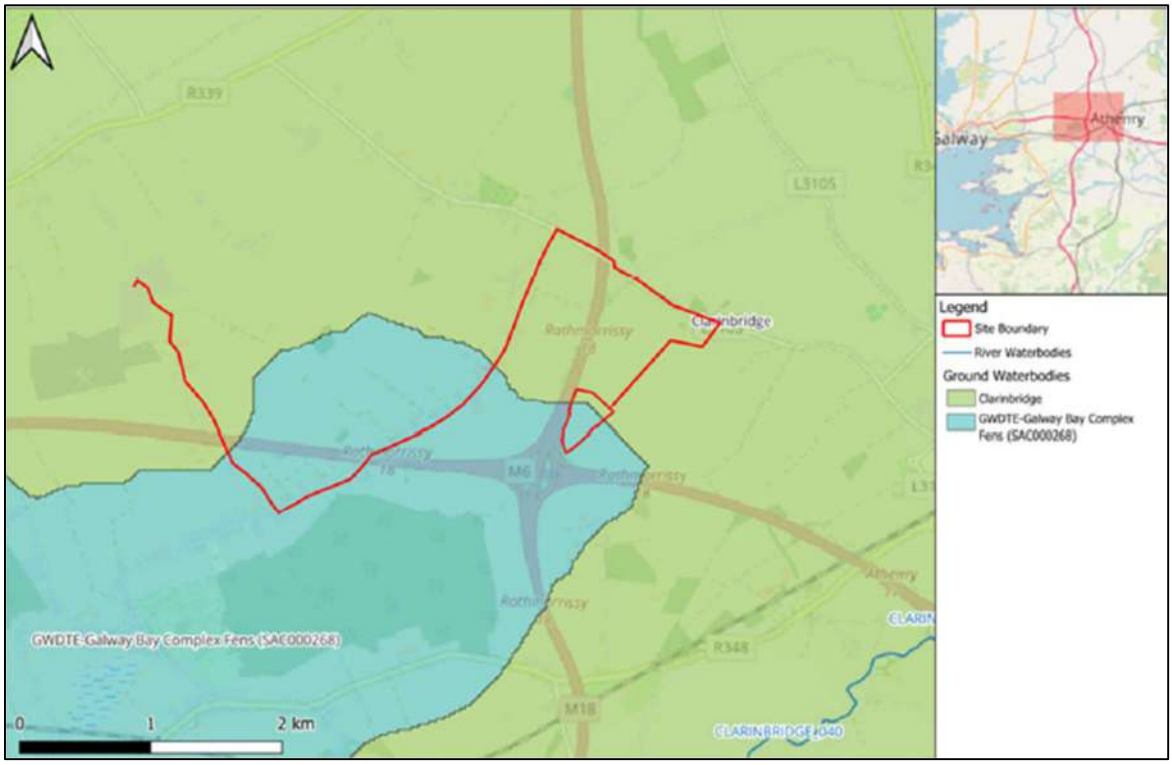


Fig. 40c: Groundwater bodies underlying the proposed development, including the Galway Bay Complex Fens GWDTE (source: EIAR Figure 12-3).

This is not a receptor in proximity to the site — it is a receptor **within and directly beneath the development footprint**, and hydrologically connected to a designated European site.

Inherent Vulnerability of the Clarinbridge Karst Groundwater Body
The entire site is underlain by the Clarinbridge Groundwater Body, which the EIAR describes (pp. 572–573) using source material from the Geological Survey of Ireland.

The EIAR acknowledges that this aquifer is characterised by:

- extensive karstification, including turloughs, caves, swallow holes and springs,
- rapid groundwater flow velocities confirmed by tracer testing,
- low storage capacity and limited contaminant attenuation potential,
- strong hydraulic connectivity between surface water and groundwater, and
- groundwater flow paths that may bypass surface catchment boundaries.

These characteristics define a highly sensitive hydrogeological environment in which contaminants can migrate rapidly and unpredictably over large distances, including towards downstream European sites.

Rkc Aquifer Classification and Limitations of Risk Modelling
The site is classified as an **Rkc aquifer**, representing the more extreme karst subtype in which groundwater flow is concentrated in conduits and attenuation capacity is minimal.

The EIAR itself states that for Rkc aquifers:

- groundwater flow is highly variable and conduit-dominated, and
- **conventional numerical modelling approaches are not generally applicable.**

This represents a fundamental limitation in the assessment. Where standard modelling tools cannot reliably simulate groundwater behaviour, a high degree of uncertainty arises. In such circumstances, reliance on predictive modelling to conclude that risks are "manageable" is not scientifically robust.

Recharge Rates and Rapid Contaminant Pathways
The EIAR identifies recharge rates of approximately:

- **626.55 mm/year** beneath the plant site, and
- **448.75 mm/year** along the cable route.

In a karst conduit system with limited attenuation capacity, these recharge rates indicate a high potential for **rapid infiltration of surface water and contaminants directly into the aquifer**.
This is not a system in which pollutants are filtered or attenuated gradually. Rather, it is one in which contaminants can enter the groundwater system quickly and be transported over considerable distances with minimal dilution.

Misinterpretation of "Good Status" under the Water Framework Directive
The EIAR identifies both the Clarinbridge Groundwater Body and the Galway Bay Complex Fens GWDTE as being in **"Good" status** and "Not at risk" of failing to achieve good status.

However, this classification does not justify the introduction of additional risk. Under Article 4 of the Water Framework Directive (2000/60/EC), there is a strict obligation to:

- **prevent deterioration** of water bodies, and
- maintain their current good status.

The EIAR appears to rely on the existing "Good" status as a form of reassurance. In regulatory terms, it should instead be treated as a **baseline requiring protection**, particularly in a highly vulnerable karst system.

Connectivity to Multiple European Sites
The EIAR further confirms that the Clarinbridge Groundwater Body is hydrologically connected to multiple groundwater dependent ecosystems, including:

- Castletaylor Complex SAC (000242)
- Greganna Marsh SAC (000253)
- Galway Bay Complex SAC (000268)
- Kiltiernan Lough SAC (001285)
- Lough Fingall Complex SAC (000606)
- Monivea Bog SAC (000311)
- Rahasane Turlough SAC (000322)

This demonstrates that the site forms part of a **regionally interconnected groundwater system** linking multiple Natura 2000 sites.

Accordingly, any contamination event has the potential to propagate through this network and affect multiple designated habitats. The EIAR does not demonstrate, beyond reasonable scientific doubt, that such pathways can be excluded.

7.4.6 Pressure on local water supply and infrastructure

The EIAR fails to adequately assess the capacity, resilience, and reliability of the existing water supply infrastructure serving the Athenry area, nor does it properly consider the cumulative impact of additional demand arising from the proposed development. This omission is particularly significant in light of clear and documented evidence that the local water supply network has experienced longstanding and ongoing deficiencies.

The proposed development will introduce an additional operational water demand, both during construction and over the lifetime of the facility. However, the EIAR does not provide a detailed assessment of the available capacity within the relevant Water Resource Zone (WRZ), nor does it demonstrate that the existing system can accommodate additional demand without adverse effects on existing users. While high-level references may be made to regional supply schemes, there is no meaningful interrogation of **local network constraints**, including pipe condition, leakage rates, or service reliability.

Region	County	Settlement Name	Water Resource Zone Name (WRZ)	Indication of available capacity to support 2034 population targets
NW	Galway	Tuam	Lough Corrib (Galway City, Tuam, Loughrea)	Capacity Available - LoS improvement required
NW	Galway	Ballinasloe	Ballinasloe Public Supply	Potential Capacity Available - LoS improvement required
NW	Galway	Loughrea	Lough Corrib (Galway City, Tuam, Loughrea)	Capacity Available - LoS improvement required
NW	Galway	Oranmore	Lough Corrib (Galway City, Tuam, Loughrea)	Capacity Available - LoS improvement required
NW	Galway	Athenry	Lough Corrib (Galway City, Tuam, Loughrea)	Capacity Available - LoS improvement required

Fig. 41: Water Resource Zone capacity status for Athenry and surrounding settlements – Athenry labelled as "improvement required" (Source: Uisce Éireann)

Available data indicates that the Athenry area is supplied from the Lough Corrib Water Resource Zone, which is classified as having "Capacity Available – LoS improvement required." This classification is significant. It indicates that while nominal capacity may exist, the Level of Service (LoS) is below required standards, meaning that **reliability, pressure, or continuity of supply is already suboptimal. The EIAR does not engage with this distinction, nor does it assess how additional demand may exacerbate these existing service deficiencies.**

Recent evidence from Uisce Éireann further underscores the fragility of the local water supply network. A notice dated 19 December 2025 confirms that a "significant burst to a water main on the Monivea Road" resulted in widespread disruption to supply, with customers in multiple areas—including "Carnmore West, Cashla, Moorpark, Grange, Cartymore, Castle Ellen, Castlelambert, and surrounding areas"—experiencing "low water pressure or outages" as a result. The notice further acknowledges the operational challenges involved, stating:

> *We understand the inconvenience this is causing, and our teams are working to restore the water supply as quickly as possible… normal supply [is expected] to be restored… overnight.*

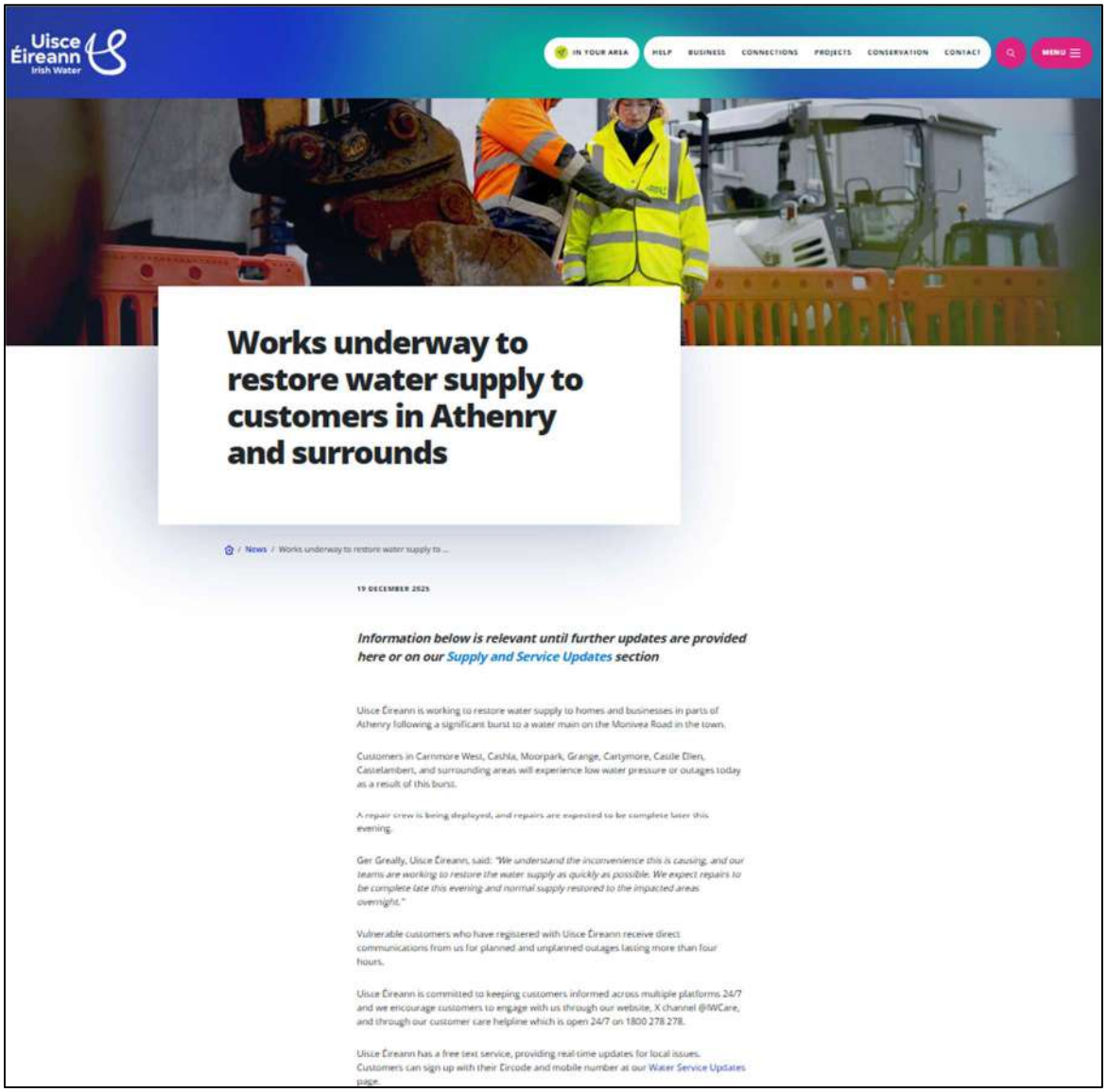


Fig. 42: Uisce Éireann notice of water supply disruption in Athenry and surrounds in December 2025 (Source: https://www.water.ie/news/works-underway-restore-water-supply-customers-athenry-and-surrounds)

This is not an isolated or anomalous event, but rather indicative of a network that is subject to failure, repair works, and service interruptions. The EIAR does not consider the implications of such events in the context of additional demand from the proposed development. There is no assessment of system resilience under stress conditions, nor of how industrial demand may interact with emergency or peak demand scenarios.

Importantly, the issue of water supply inadequacy in Athenry is not a recent phenomenon, but one that has been recognised for decades. A Dáil Éireann debate dated 16 November 1993 highlights longstanding structural deficiencies in the water supply system serving the town. It was noted at the time that:

> *The water supply in the town, which is switched off at 12 o'clock at night and not switched on again until 7 a.m. the following morning, is totally inadequate. This causes major problems for the people of the town…*

and further:

> *It is totally unsatisfactory that a town the size of Athenry does not have a 24-hour water supply.*

The response from Government acknowledged these issues, stating:

> *There are long-standing water supply problems in the Athenry area. Rationing measures and other restrictions on water supply have resulted from this situation, and these are clearly a source of inconvenience, and in some cases, hardship whenever they occur.*

Fig. 43: Dail Eireann debate which discussed the inadequate water supply in Athenry (Source: https://www.oireachtas.ie/en/debates/debate/dail/1993-11-16/20/)

While infrastructure investment has occurred in the intervening period, the persistence of supply disruptions and the current classification of the WRZ as requiring Level of Service improvements indicate that these issues have not been fully resolved. The EIAR fails to acknowledge this historical and ongoing context, and instead adopts an overly simplified view of water supply capacity.

Furthermore, the EIAR does not assess the **cumulative impact of multiple pressures on the network**, including population growth, agricultural demand, leakage, and climate-related variability. The addition of a continuous industrial demand—however modest it may be in isolation—must be considered in the context of a system that is already operating below optimal service standards.

There is also no consideration of **priority of supply** in the event of shortages or outages. The EIAR does not address whether industrial usage would be curtailed during periods of reduced supply, nor does it assess the potential for conflict between commercial and domestic users. In rural areas reliant on consistent supply for both domestic and agricultural purposes, such conflicts are a material planning consideration.

In addition, the EIAR does not examine the potential indirect effects of the development on infrastructure integrity. Increased traffic, construction activity, and ground disturbance in proximity to existing water mains may elevate the risk of damage or failure within an already vulnerable network. No assessment is provided of these risks.

Overall, the EIAR fails to provide a comprehensive, evidence-based assessment of water supply capacity and infrastructure resilience in the Athenry area. The available evidence clearly demonstrates that the system is subject to reliability issues, historical deficiencies, and ongoing service challenges. In this context, the introduction of additional demand from the proposed development represents a **material and unquantified risk to the adequacy and reliability of water supply for existing users**.

Accordingly, it is submitted that the EIAR does not demonstrate that sufficient water supply capacity exists, nor that the proposed development can be accommodated without adverse effects on existing infrastructure and users. This represents a significant deficiency in the assessment and a further substantive ground for refusal.

7.4.7 Inadequate assessment and failure to apply the precautionary principle

Taken as a whole, the EIAR fails to provide a robust, site-specific, or scientifically defensible assessment of hydrogeological and water quality impacts, and does not satisfy the requirements of a precautionary approach as mandated under European and national environmental assessment frameworks. The deficiencies identified throughout this section are not minor or technical in nature; rather, they represent **systemic shortcomings in baseline data, impact assessment methodology, and risk evaluation**, which collectively undermine the reliability of the conclusions presented.

A central flaw in the EIAR is its reliance on **generic and standardised mitigation measures**, applied without meaningful adaptation to the specific hydrogeological conditions of the site. The receiving environment is demonstrably characterised by **karstified limestone geology and areas of extreme groundwater vulnerability**, where natural attenuation capacity is limited and subsurface flow pathways are complex and unpredictable. In such contexts, best practice requires a detailed, evidence-based assessment incorporating site-specific investigation, modelling, and conservative assumptions. Instead, the EIAR adopts a mitigation-led approach, whereby potential impacts are assumed to be negligible on the basis that standard controls will function as intended. This approach is not consistent with the precautionary principle.

The absence of a comprehensive **source–pathway–receptor analysis** is particularly notable. The EIAR does not adequately identify groundwater receptors, including private wells and agricultural supplies, nor does it establish hydraulic connectivity between the site and these receptors. There is no detailed characterisation of groundwater flow directions, travel times, or contaminant transport mechanisms. Without such analysis, it is not possible to meaningfully assess the likelihood or consequence of adverse effects. This represents a fundamental departure from established hydrogeological assessment practice.

Furthermore, the EIAR fails to adequately consider **uncertainty and risk**, particularly in relation to worst-case scenarios and mitigation failure. The assessment is predicated on the assumption that all mitigation measures will perform effectively under all conditions, yet provides no evaluation of the consequences should these measures fail. In a karst environment, where contaminants can rapidly enter and spread within the aquifer, even a single failure event has the potential to result in significant and irreversible impacts. The absence of contingency planning, early warning systems, and receptor-specific safeguards further compounds this risk. The treatment of **construction-phase impacts** is similarly deficient, with no detailed assessment of how ground disturbance, excavation, and altered drainage patterns may interact with subsurface karst features. The EIAR does not demonstrate that the site has been adequately investigated to identify potential conduits, voids, or preferential flow paths, nor does it propose measures to avoid or manage such features during construction. This represents a clear failure to engage with the known risks associated with development in karst terrains.

In terms of **operational impacts**, the EIAR does not provide a credible framework for long-term groundwater protection. There is no clearly defined monitoring regime, no specification of trigger levels or response actions, and no assessment of cumulative or chronic contamination risks over time. The lack of consideration of decommissioning and potential legacy impacts further highlights the incomplete nature of the assessment.

The EIAR also fails to integrate hydrogeological considerations with other relevant aspects of the development, including drainage design, flood risk, and water supply infrastructure. The interaction between these elements is critical in understanding the overall risk to groundwater, yet the assessment treats them in isolation. This fragmented approach does not reflect the interconnected nature of hydrological and hydrogeological systems. Importantly, the EIAR does not adequately reflect the **sensitivity of the receiving environment**, which includes not only a highly vulnerable aquifer but also a network of private wells and agricultural water supplies upon which local communities depend. The potential consequences of groundwater contamination in such a context are significant, affecting public health, agricultural viability, and environmental quality. The failure to properly assess and safeguard these receptors represents a serious omission.

The precautionary principle requires that, where there is scientific uncertainty and a risk of significant environmental harm, decision-making should err on the side of caution. In this case, the presence of karst geology, high groundwater vulnerability, and known reliance on private water supplies clearly give rise to such uncertainty and risk. However, rather than adopting a cautious and evidence-led approach, the EIAR seeks to minimise or discount these risks in the absence of adequate supporting data. In summary, the EIAR does not meet the standard required of an environmental impact assessment in a hydrogeologically sensitive setting. It fails to provide sufficient baseline information, does not adequately assess impact pathways or receptor sensitivity, relies on unproven mitigation assumptions, and does not account for uncertainty or worst-case scenarios. The result is a material underestimation of potential impacts on groundwater quality and water supply.

Accordingly, it is submitted that the EIAR is fundamentally deficient in its assessment of hydrogeology, groundwater, and water quality. The lack of a precautionary, evidence-based approach, combined with the high sensitivity of the receiving environment, gives rise to a clear and unacceptable risk of significant adverse impacts. **On this basis, there are strong and compelling grounds for refusal of the proposed development.**

7.5 Ground 5: Significant adverse impact on agricultural land use, farm viability and the rural economy

7.5.1 Loss of agricultural land and conflict with established farming practices

The proposed development will result in the permanent loss of a substantial area of productive agricultural land within a rural landscape that is explicitly characterised—even by the applicant themselves—as being fundamentally agricultural in nature. The applicant's own documentation repeatedly confirms that *"the subject site comprises greenfield lands that are in use for agriculture"* and that *"the site is currently agricultural in nature and generally surrounded by other agricultural lands"* . This is further reinforced in the planning report which states that *"land use in the immediate vicinity is primarily agricultural in character, comprising fields bounded by traditional stone walls and hedgerows"*. The minutes of the Galway County Council SID pre-application meeting (13/02/2025) similarly record that the *"site is agricultural grassland"*.

These are not incidental descriptions; they establish a clear and consistent baseline that the site forms part of an actively managed and functioning agricultural landscape. This baseline is visually corroborated by the applicant's own LVIA viewpoints, which explicitly identify "evidence of agricultural use" and "sheep actively grazing this site" (Figures 44 – VP03 & VP05). These images demonstrate not only passive land cover but active, ongoing agricultural productivity and land management.

Fig. 44: Representative Viewpoint (VP03 & VP05) showing agricultural baseline (Source: LVIA Appendix 6)]

The proposed development will irreversibly remove approximately 11.54 hectares of agricultural land from production. This represents a permanent land take, not a temporary or reversible change. The EIAR confirms that the dominant habitat is *"improved agricultural grassland (GA1), which occupies the Site… and has been actively grazed"* . While the EIAR attempts to characterise this habitat as being of "low ecological value," this is a misdirection in planning terms: agricultural value and ecological value are not interchangeable. Land can be of high agricultural importance despite being classified as "improved" grassland.

The site forms part of a wider network of viable agricultural holdings. Its removal therefore represents not just the loss of land area, but the loss of productive capacity within an established farming system. In rural Ireland—particularly in areas such as Athenry—such land contributes directly to farm viability, fodder production, and livestock systems. The permanent sterilisation of this land for industrial use fundamentally conflicts with the long-term protection of agricultural resources.

Beyond the direct footprint, the proposed development introduces fragmentation effects across adjoining lands. The insertion of a large-scale industrial facility—together with associated infrastructure, access roads, fencing, and exclusion zones—will sever the continuity of agricultural parcels and disrupt existing field patterns defined by traditional stone walls and hedgerows.

The EIAR itself acknowledges that the site is characterised by *"fields enclosed by low stone wall boundaries, characteristic of the surrounding area"*. These boundaries are not merely physical features but integral components of farm management, livestock control, and land identity. Their removal or severance to facilitate access (including the documented loss of c.72.5m of stone wall and hedgerow) contributes to incremental fragmentation and degradation of farm structure.

Fragmentation has practical consequences:

- Reduced efficiency of farm operations
- Increased travel distances and operational costs
- Loss of coherent grazing units
- Constraints on future agricultural use of adjoining lands

Such effects are not adequately assessed in the EIAR, which focuses narrowly on ecological habitat loss rather than agricultural landholding integrity.

The proposed peaker plant represents a fundamentally incompatible land use within an actively farmed rural landscape. The introduction of heavy industrial infrastructure—including a 30m emission stack, high-voltage electrical infrastructure, lighting, noise sources, and security fencing—constitutes a radical transformation from agricultural to industrial character.

This incompatibility manifests in several ways:

- **Operational conflicts:** Noise, lighting, and traffic associated with the facility are inherently at odds with livestock farming practices and rural amenity.
- **Biosecurity and land use constraints:** The proximity of industrial infrastructure may restrict certain agricultural activities, including organic farming or equine uses.
- **Perception and market impacts:** The presence of industrial development can affect land values and the attractiveness of agricultural enterprises.

The EIAR does not meaningfully assess these agricultural compatibility issues. Instead, it treats the site as an isolated ecological unit rather than part of a functioning agricultural economy.

The cumulative effect of land loss, fragmentation, and incompatibility is to undermine the viability of local farming operations. This impact extends beyond the red-line boundary of the site and affects the wider rural economy.
The surrounding area is explicitly described as a "busy working landscape in which most of Galway's settlement and agriculture… occur." The insertion of a large-scale industrial facility into this context risks setting a precedent for further non-agricultural development, contributing to the gradual erosion of the agricultural land base.

Moreover, the EIAR's reliance on future landscaping (e.g. wildflower meadows or tree planting) as a form of "compensation" is fundamentally flawed in this context. Such measures do not replace the functional value of agricultural land. Agricultural land is a finite resource; once lost to industrial development, it cannot be meaningfully restored to its original productive role.

Critically, the EIAR fails to carry out a robust assessment of agricultural impacts. While it provides detailed ecological classification, it does not:

- Assess the quality or productivity of the farmland
- Examine impacts on farm holdings or land fragmentation
- Consider implications for farm viability or rural economy
- Evaluate compatibility with agricultural land use policies

Instead, the assessment is narrowly framed through an ecological lens, which understates the planning significance of the loss of agricultural land.
The proposed development represents a permanent and unjustified loss of productive agricultural land within an established farming landscape. It will fragment holdings, introduce an incompatible industrial use, and

undermine the viability of local agriculture. The applicant's own documentation confirms the agricultural nature and active use of the site, yet fails to properly assess or justify its removal from the agricultural land base.

Accordingly, the proposed development is contrary to the proper planning and sustainable development of the area, particularly in terms of protecting agricultural land use, rural character, and the long-term viability of farming.

7.5.2 Airborne emissions and impacts on crops, fodder, and agricultural quality

The receiving environment for the proposed development is not an abstract or generic rural setting but an actively managed agricultural landscape, a fact consistently acknowledged throughout the applicant's own documentation. The EIAR confirms that the site and its immediate surrounds comprise grass-based farmland, while the meteorological inputs to the dispersion modelling further reinforce this baseline by identifying land use within the modelling domain as overwhelmingly agricultural in character, including areas defined as "100% grassland" and a wider mix dominated by grassland and cultivated land . This is a critical starting point. The modelling exercise is explicitly grounded in an agricultural landscape, yet the assessment fails to meaningfully examine the consequences of pollutant dispersion within that context.

The air quality assessment relies on the AERMOD dispersion model, a steady-state Gaussian model designed to predict ambient pollutant concentrations arising from industrial sources . While the use of AERMOD is standard practice, the manner in which it has been applied here is notably narrow. The assessment focuses almost exclusively on predicted concentrations in air and their compliance with human health limit values. There is little or no engagement with what happens once pollutants leave the plume and interact with the receiving environment. In an agricultural setting, this is not a peripheral issue but a central one. The critical pathway is not simply air quality in the abstract, but the transfer of pollutants from atmosphere to land, and from land into the agricultural food chain.

Fig. 45 illustrates the established pathway by which airborne pollutants are dispersed, deposited onto land surfaces, and subsequently taken up by vegetation and ingested by animals. This pathway is directly applicable to the receiving environment in this case, which is characterised by actively grazed grassland and silage production. Notwithstanding this, the EIAR assessment is confined to ambient air concentrations and does not extend to deposition processes, foliar uptake, or ingestion by livestock. As such, a critical impact pathway has not been assessed.

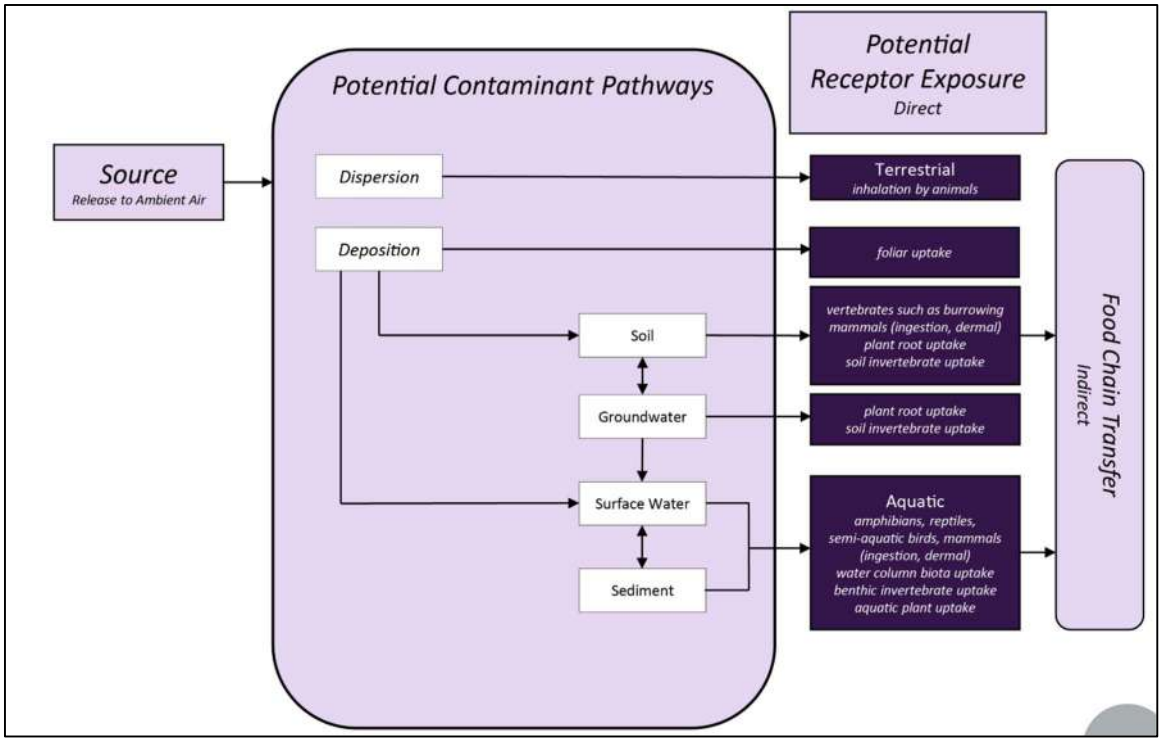


Fig. 45: Conceptual pollutant pathway from atmospheric emissions to terrestrial receptors and food chain transfer (adapted from EPA exposure pathway model)

Fig. 46 illustrates the established mechanisms by which airborne pollutants are transferred to vegetation, including direct deposition onto plant surfaces and uptake through stomatal pathways. These processes are directly relevant to the receiving environment in this case, which comprises actively managed grassland used for grazing and silage production. Pollutants deposited onto external plant surfaces or absorbed into plant tissue may subsequently enter the agricultural food chain through livestock ingestion. Notwithstanding the clear

relevance of these pathways, the EIAR does not assess foliar deposition, plant uptake, or the implications for fodder quality, and is instead confined to ambient air concentration thresholds.

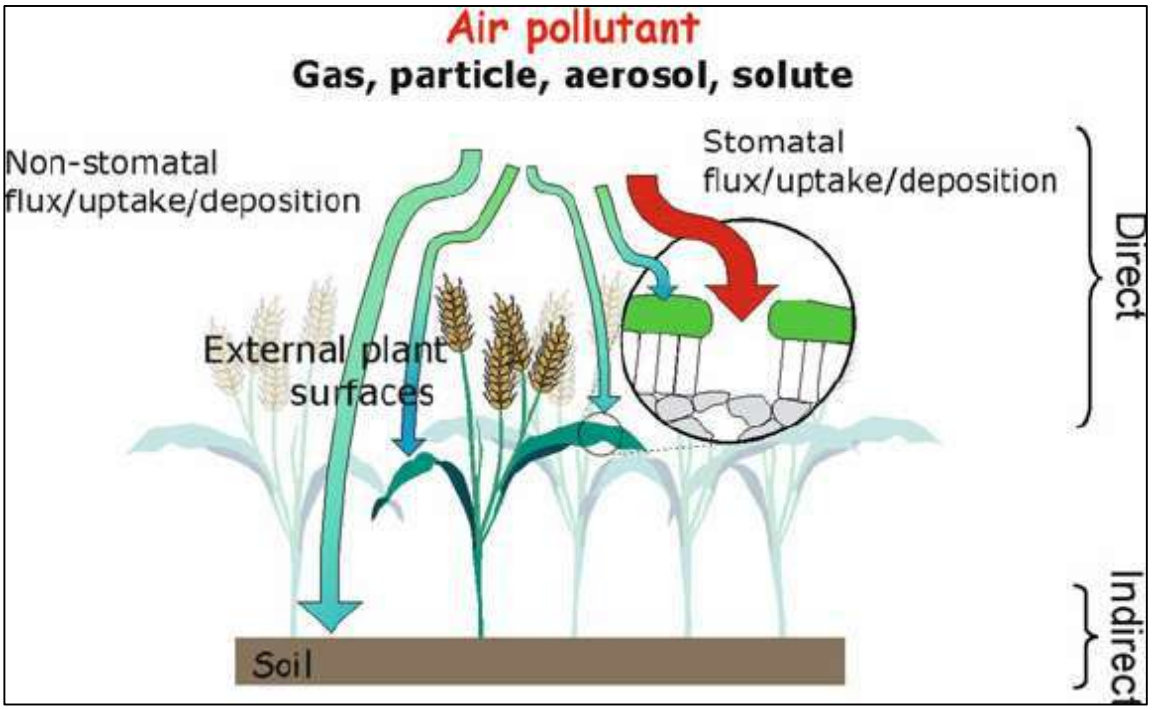


Fig. 46: Pathways of transfer of airborne pollutants to vegetation and soil surfaces, including foliar deposition and uptake (source: SEI / Emberson et al.)

Once emitted, pollutants such as nitrogen oxides and fine particulates undergo both dry and wet deposition processes. These processes result in the accumulation of pollutants on grassland surfaces, soils, and silage crops. The EIAR does not quantify these deposition rates at a local scale, nor does it map their spatial distribution across adjoining farmland. This omission is particularly striking given that the modelling framework itself explicitly incorporates the meteorological and surface parameters that control deposition behaviour. The AERMET pre-processor calculates boundary layer dynamics, surface roughness, heat flux and atmospheric stability, all of which directly influence how pollutants disperse and settle. In other words, the tools necessary to understand deposition are embedded within the modelling approach, yet the assessment stops short of applying them to the most relevant receptors.

The behaviour of emissions under stable atmospheric conditions is of particular importance in this regard. The AERMOD model explicitly accounts for low wind speed and stable boundary layer scenarios, conditions under which vertical mixing is limited, and pollutants can remain concentrated near ground level. These conditions materially increase the likelihood of localised deposition in the vicinity of the site, particularly across adjacent grassland.

However, dispersion is not uniform in all directions. The wind data used to inform the modelling, as presented in Fig. 47, demonstrates clear and consistent prevailing wind patterns at the Athenry meteorological station. Across all assessed years, there is a pronounced dominance of westerly and south-westerly winds, together with a strong east–west directional alignment. This indicates that emissions from the proposed development will not disperse evenly across the receiving environment but will instead be carried repeatedly along defined directional corridors.

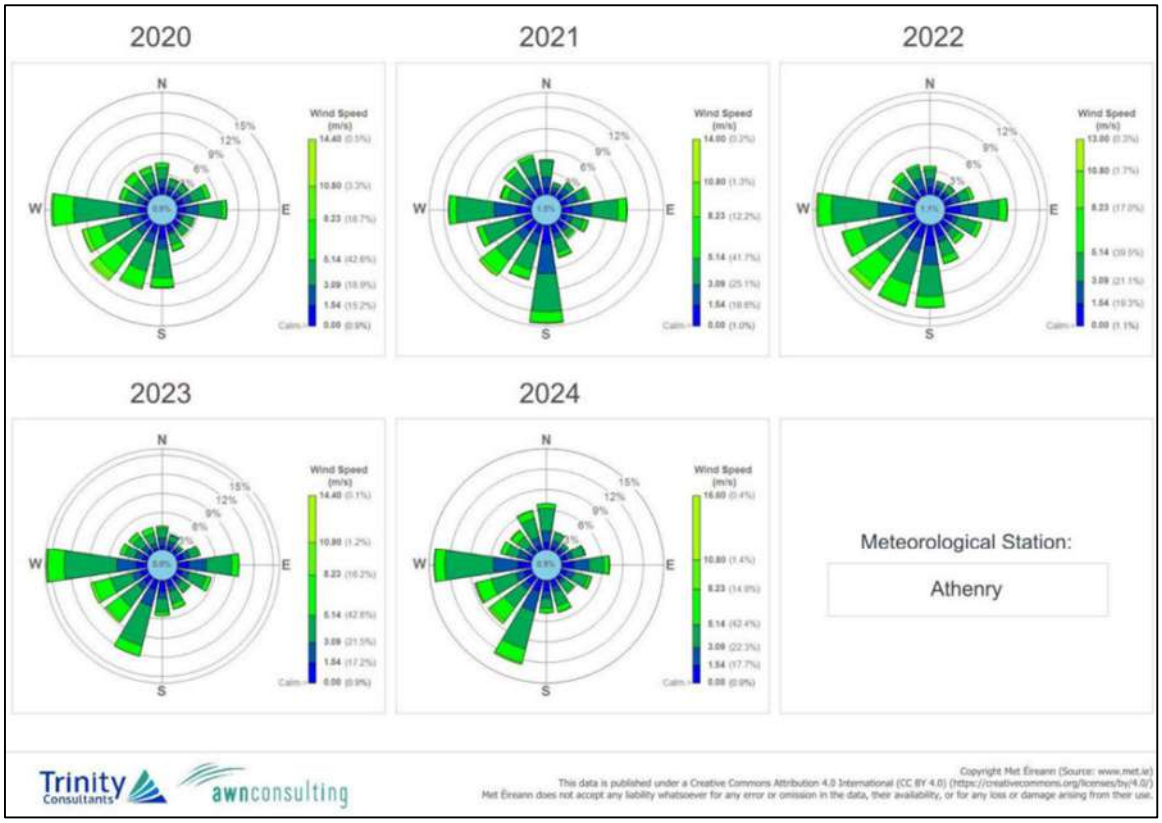


Fig. 47: Wind rose from AERMOD input data (Source: Figure 7-2, EIAR)

The implication of this is that agricultural lands located downwind of these prevailing directions will be subject to repeated and cumulative exposure to airborne emissions and subsequent deposition. This is not a one-off or diffuse effect, but a patterned and recurring process driven by site-specific meteorological conditions. Notwithstanding this, the EIAR does not identify these downwind sectors, does not map the agricultural receptors located within them, and does not assess the implications of repeated exposure over time.

This omission is significant. Grassland used for grazing and silage production is directly exposed to atmospheric deposition, and pollutants may accumulate on leaf surfaces, particularly during periods of low rainfall or stable atmospheric conditions. Over successive deposition events, this can influence the chemical composition and quality of fodder. The EIAR does not examine this process in any meaningful way. There is no assessment of seasonal accumulation, no consideration of silage production cycles, and no attempt to relate modelled outputs to agricultural thresholds or sensitivities.

The assessment instead relies on compliance with ambient air quality standards as a proxy for impact significance. This approach is not appropriate in an agricultural context, where the relevant exposure pathway is not limited to inhalation but extends to deposition onto grassland and subsequent ingestion by livestock. The failure to distinguish between these pathways results in an incomplete and potentially misleading assessment of effects.

The implications extend beyond immediate fodder quality. Atmospheric deposition of nitrogen compounds represents an additional and unaccounted-for input to the farm nutrient balance. In a regulatory environment governed by the Nitrates Directive, where nutrient loading is tightly controlled at farm level, even incremental inputs from atmospheric sources may be material. The EIAR does not attempt to quantify these inputs, nor does it consider their interaction with existing fertiliser practices. This omission is particularly significant in a landscape characterised by intensive and ongoing agricultural use.

There is also a failure to consider the presence and sensitivity of specific agricultural receptors. Organic farming systems, which depend on strict control of external inputs, may be especially vulnerable to airborne contamination. Similarly, equine activities within the wider area represent a sensitive receptor, given the well-established susceptibility of horses to respiratory irritation arising from airborne particulates and pollutants. These receptors are neither identified nor assessed within the EIAR.

Fig. 48: Annotated aerial showing surrounding agricultural lands and any identified sensitive receptors (e.g. farmyards, equine facilities) in relation to prevailing wind directions]

Fig. 48 illustrates the spatial relationship between the proposed development, surrounding agricultural lands, and the prevailing wind regime. As demonstrated, the dominant westerly and south-westerly winds will carry emissions predominantly towards the east and north-east. This gives rise to a clearly defined downwind corridor within which agricultural lands and residential receptors are likely to experience repeated exposure. The figure demonstrates that the receiving environment is not uniformly affected, but instead subject to a directional and cumulative pattern of impact, with specific parcels of farmland falling consistently within the plume pathway.

Notwithstanding the availability of this meteorological data, the EIAR does not identify these downwind sectors, does not map the agricultural receptors located within them, and does not assess the implications of repeated exposure over time. There is no consideration of how deposition may accumulate across a growing season, no linkage between predicted concentrations and actual farm parcels, and no assessment of the implications for silage production, grazing systems, or livestock intake.

What emerges from the EIAR is an assessment that is technically detailed in its treatment of atmospheric dispersion, yet fundamentally incomplete in its treatment of environmental consequences. The modelling effectively terminates at the point of predicted concentrations in air and does not extend to deposition, agricultural uptake, or food chain transfer. In a receiving environment that is explicitly agricultural in nature, this represents a significant and material omission.

The reliance on generalised conclusions of "no significant impact" is therefore not justified. Such conclusions are predicated on an assessment framework that does not adequately consider the most relevant exposure pathways or the spatial reality of how emissions will behave. The applicant has demonstrated, through its own data, that dispersion is directionally influenced and that the surrounding land use is predominantly agricultural. However, it has failed to integrate these factors into a coherent assessment of impact.

In these circumstances, the potential for adverse effects on agricultural receptors cannot be excluded. The absence of a detailed, site-specific evaluation of deposition and its implications for crops, fodder, and livestock introduces a level of uncertainty that is not compatible with the requirements of proper planning and environmental assessment. The EIAR does not provide a sufficient evidential basis to conclude that the proposed development will not adversely affect grassland productivity, livestock feed quality, or the regulatory and economic viability of farming in the surrounding area.

7.5.3 Implications for agricultural compliance, organic farming and equine activities

The receiving environment for the proposed development is not only agricultural in land cover terms but also demonstrably intensive and economically active in agricultural production. This is evidenced by the CSO data for the defined local catchment surrounding the site, which confirms a substantial and highly productive farming

landscape. As illustrated in Fig. 49 (Source: CSO, 2020), the study area comprises a defined agricultural hinterland centred on Athenry, within which farming activity is widespread and structurally embedded.

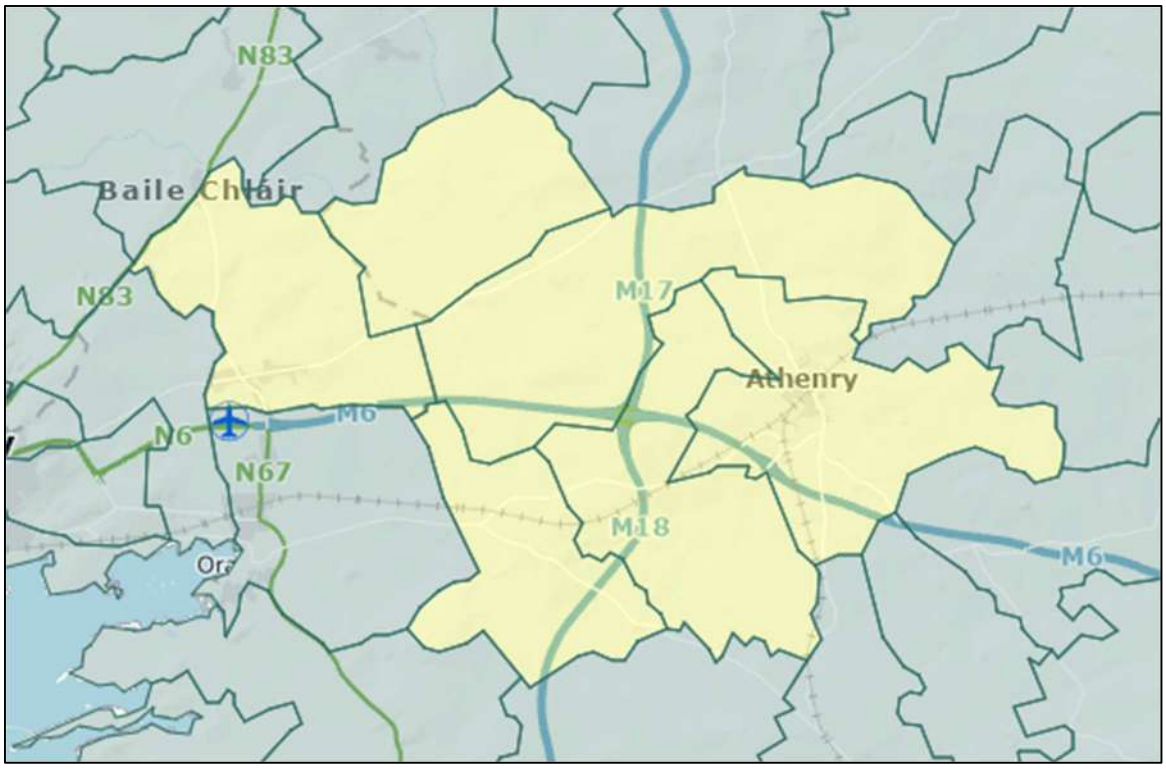


Fig. 49: CSO agricultural catchment area surrounding the subject site (Source: CSO, 2020)

Within this area, there are **346 individual farm holdings**, supporting a total of **16,590 livestock units** across approximately **10,891 hectares of farmed land**, as set out in Fig. 50 (Source: CSO, 2020). These figures are not incidental; they demonstrate that the receiving environment is characterised by active farm enterprises operating at scale, with clear regulatory, economic and production sensitivities.

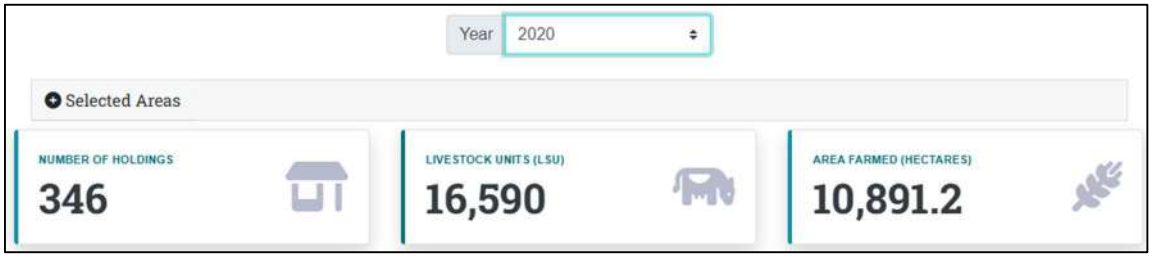


Fig. 50: Number of holdings, livestock units and farmed area within the study area (Source: CSO, 2020)

The land use profile is overwhelmingly grassland-based. As shown in Fig. 51, the vast majority of agricultural land within the catchment is devoted to grassland, with only negligible areas under cereal production. This confirms that the dominant agricultural activity is livestock-based, reliant on grass growth, grazing systems, and silage production.

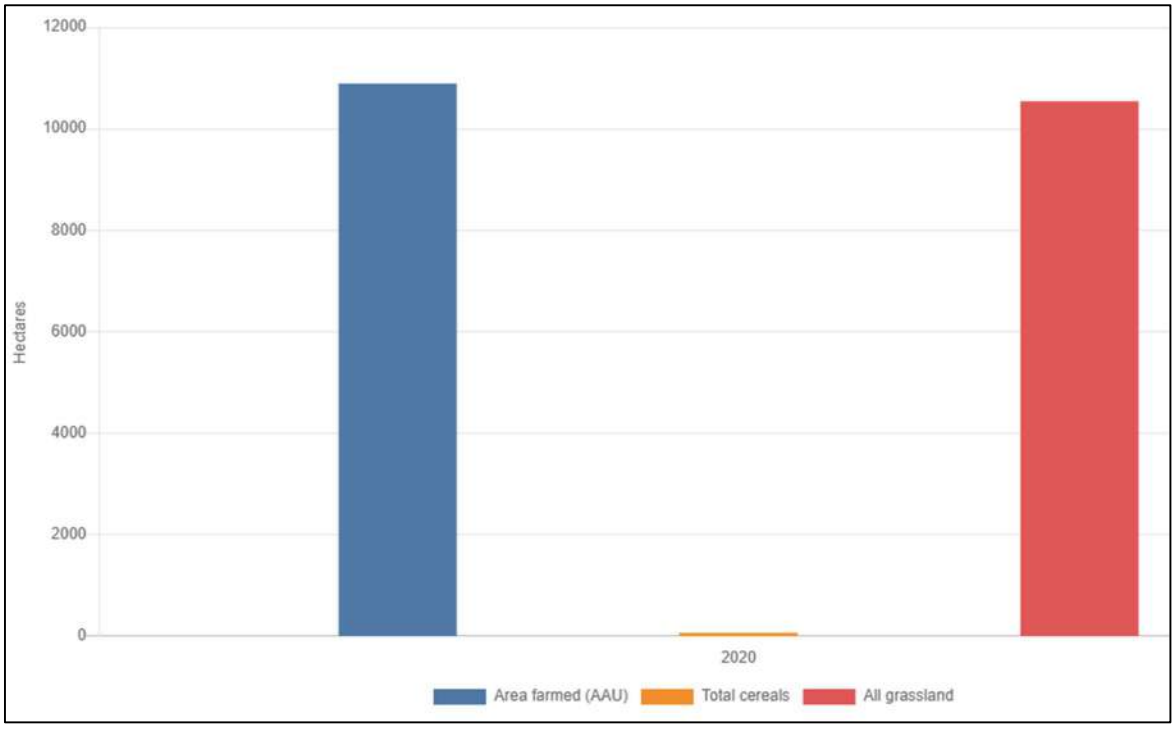


Fig. 51: Agricultural land use composition within the study area (Source: CSO, 2020)

This is further reinforced by livestock data. The cattle profile, illustrated in Fig. 52, indicates a substantial proportion of dairy production alongside other bovine enterprises, while Fig. 52 demonstrates significant overall cattle and sheep numbers within the area. Taken together, these Fig.s confirm that the agricultural system in the vicinity is heavily dependent on grassland productivity and fodder quality and operates within tightly regulated nutrient management frameworks.

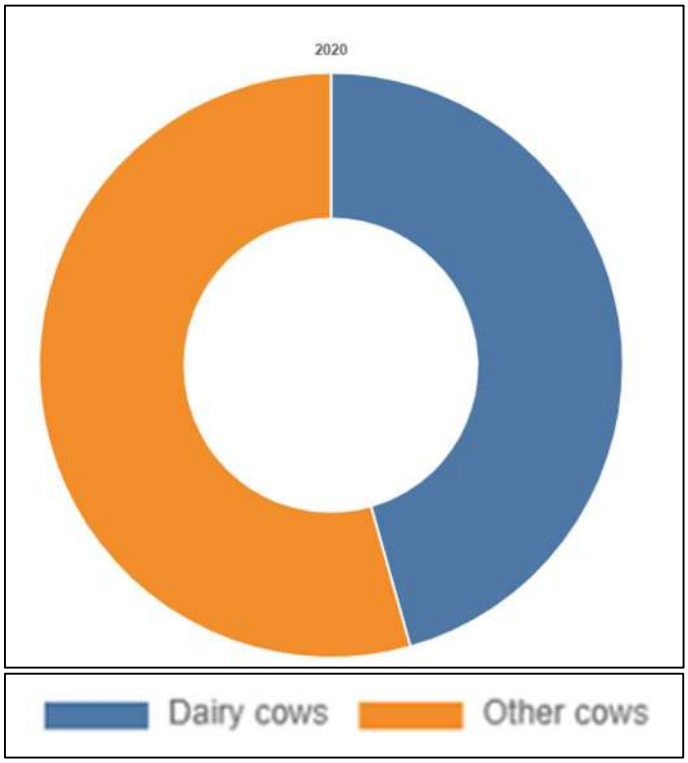


Fig. 52: Composition of cattle enterprises within the study area (Source: CSO, 2020)

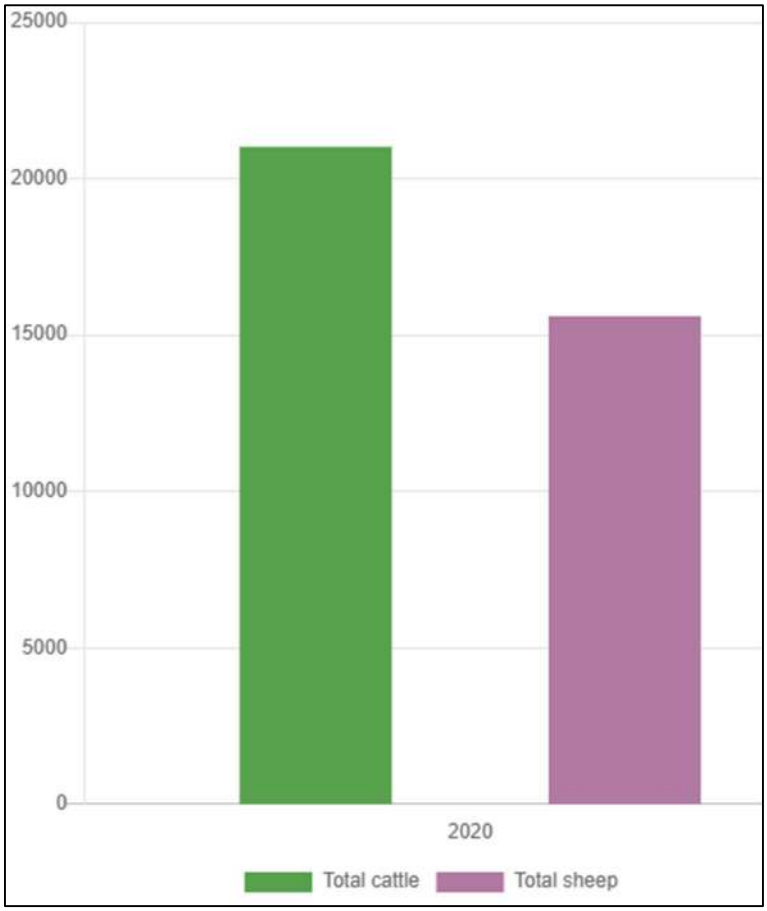


Fig. 53: Total cattle and sheep numbers within the study area (Source: CSO, 2020)

In this context, the introduction of a continuous emission source has direct implications for agricultural compliance, particularly under the Nitrates Directive. Farm enterprises within this catchment are required to operate within strict limits on nitrogen loading, with nutrient inputs carefully managed at farm level. Atmospheric deposition of nitrogen compounds arising from the proposed development represents an additional input to this system. While such inputs may be modest in isolation, they are not assessed or quantified in the EIAR in terms that are meaningful for farm management. There is no consideration of how these additional inputs may interact with existing fertiliser regimes or contribute to cumulative nutrient loading at holding level. In a highly productive agricultural landscape such as that identified in Figures 50 - 53, even incremental increases may have regulatory implications, particularly for farms operating close to permitted thresholds.

The absence of this analysis is compounded by the failure to consider the implications for specific farming systems. The prevalence of grassland-based livestock farming means that any degradation in fodder quality—arising from deposition of airborne pollutants onto grass and silage—has a direct pathway to economic impact. This is not an abstract or theoretical concern; it relates to the core productive function of the land. The EIAR does not engage with this reality and instead relies on generalised conclusions based on ambient air quality standards, which do not capture the relevant agricultural exposure pathways.

There are also implications for organic farming systems, which operate under certification regimes that require strict control of external inputs and environmental conditions. While the EIAR does not identify whether organic holdings are present within the study area, the scale and intensity of agricultural activity demonstrated in the CSO data indicate that a range of farming systems are likely to be present. The introduction of a continuous industrial emission source in proximity to such lands raises legitimate concerns regarding contamination risk and certification compliance. These issues are not addressed in the EIAR.

Similarly, equine activities represent a sensitive and economically significant land use within the wider Athenry area. Horses are particularly susceptible to respiratory irritation from airborne particulates and pollutants, and equine enterprises typically require high environmental quality standards. Despite this, the EIAR does not identify equine receptors or assess their sensitivity. This omission is notable given the established agricultural and rural character of the area and the likelihood of such uses occurring within the receiving environment.

What emerges from the above is a clear mismatch between the scale and sensitivity of the agricultural baseline and the scope of the EIAR assessment. The data presented in Figures 50 – 53 demonstrate that the receiving environment comprises a dense and productive agricultural system, operating within defined regulatory

frameworks and dependent on environmental quality. However, the EIAR does not translate this baseline into a meaningful assessment of risk. It does not consider farm-level compliance, does not engage with certification requirements, and does not identify sensitive agricultural receptors.

In these circumstances, the conclusion that the proposed development will not give rise to significant effects on agriculture is not supported by the evidence. The assessment fails to consider how emissions may interact with a regulated and productive farming system and does not provide a sufficient basis to exclude impacts on compliance, certification, or agricultural viability. This represents a material deficiency in the EIAR and undermines its conclusions in respect of agricultural effects.

7.5.4 Soil quality, contamination risk, and long-term agricultural productivity

The EIAR confirms that the subject site comprises a greenfield agricultural setting underlain by generally natural and moderately fertile soils, with no significant baseline contamination identified. Site investigations recorded topsoil overlying clay, gravel and limestone-derived materials, with geochemical testing indicating that contaminant concentrations were below relevant screening thresholds and consistent with an undisturbed rural baseline . The soils themselves are described as Grey Brown Podzolics and Brown Earths, together with Renzinas and Lithosols, characterised as medium fertility soils suitable for agricultural use . This baseline is important, as it establishes that the receiving environment is not degraded or marginal, but rather comprises productive agricultural soils capable of supporting ongoing farming activity.

Notwithstanding this, the EIAR acknowledges that the proposed development will result in the disturbance and partial loss of this soil resource. Construction activities will require stripping of topsoil and subsoil, excavation, and ground regrading across the site, with associated risks including loss or damage to soil resources, exposure to erosion, and compaction by heavy machinery . These processes are not benign. Topsoil is a finite and sensitive resource, and once its structure is disturbed or compacted, its functional capacity in terms of drainage, aeration, and biological activity can be permanently altered. While the EIAR characterises these effects as "slight", it simultaneously acknowledges that they may be **permanent and irreversible** in nature , which is not consistent with a conclusion of negligible significance in an agricultural context.

The issue of soil compaction is of particular concern. The EIAR explicitly identifies that soils beneath the proposed development may become compacted by construction machinery . In grassland-based farming systems, compaction can have a direct and lasting effect on productivity, reducing infiltration, increasing runoff, and limiting root development. These effects are not easily reversed, even where reinstatement measures are proposed. The EIAR does not assess the extent to which compaction may affect the agricultural capability of the land, nor does it consider the implications for long-term grassland productivity.

In addition to physical disturbance, the EIAR identifies a range of potential contamination pathways arising during construction. These include the introduction of new contaminants through spillages and leaks of fuels or construction materials, as well as the mobilisation of any existing contaminants through excavation and stockpiling . The creation of new pathways for contaminant migration, particularly through earthworks and installation of below-ground infrastructure, is also acknowledged. While these risks are described as low and subject to mitigation, they are nonetheless inherent to the nature of the development.

A similar position is taken in respect of the operational phase. The EIAR accepts that the operation of the proposed plant may introduce new sources of contamination, including the potential for fuel spills or leaks, which may migrate through soils and along preferential pathways such as service ducts . The conclusion that such risks are "negligible" is based on the assumption that engineered mitigation measures will perform effectively at all times. However, no assessment is provided of the consequences of accidental failure, notwithstanding that such events are explicitly identified as possible within the EIAR.

The reliance on mitigation measures as the primary basis for concluding no significant impact is a notable weakness in the assessment. The EIAR sets out an extensive list of construction management measures, including pollution prevention protocols, supervised works, and adherence to best practice guidance . However, these measures are largely procedural in nature and dependent on contractor compliance. There is no detailed assessment of residual risk in the event of accidental releases, nor is there any consideration of how such contamination might affect soil quality in an agricultural context. In particular, the EIAR does not examine the potential for even minor hydrocarbon contamination to render soils unsuitable for grazing or silage production.

Furthermore, the assessment is framed primarily in terms of risks to human health and controlled waters, rather than agricultural productivity. The Generic Quantitative Risk Assessment (GQRA) undertaken as part of the EIAR is explicitly based on criteria for commercial land use. This represents a fundamental limitation. The sensitivity of soils in an agricultural setting is not equivalent to that of commercial or industrial land use. Soils supporting food production are subject to different functional requirements and regulatory considerations, including the need to maintain soil health, fertility, and absence of contamination affecting livestock or crops. The EIAR does not account for this distinction.

There is also a failure to consider the cumulative and long-term implications of soil disturbance and contamination risk. The development will result in a permanent land take of approximately 11.54 hectares,

together with the installation of hardstanding, infrastructure, and underground services. While reinstatement is proposed in certain areas, the presence of long-term infrastructure represents a permanent change in land capability. The EIAR acknowledges that there is no mitigation for long-term land take of fertile soils yet concludes that this will not give rise to significant effects. This conclusion is not supported by any assessment of the agricultural value of the land lost or the broader implications for farm operations in the area.

Finally, while the EIAR proposes that the site will be reinstated following decommissioning, including the application of soils and reseeding, this is inherently uncertain and contingent on future conditions and practices. Soil formation and restoration are long-term processes, and the assumption that land can be returned to its original agricultural condition is not substantiated by detailed analysis. There is no assessment of whether soil structure, fertility, and drainage characteristics can be fully restored, particularly in areas subject to prolonged compaction or contamination risk.

In summary, the EIAR acknowledges the presence of productive agricultural soils and identifies a range of potential impacts arising from construction and operation, including disturbance, compaction, and contamination risk. However, it fails to assess these impacts in terms of their consequences for soil quality and agricultural productivity. The assessment is framed primarily around human health and generic land use criteria, with insufficient regard to the specific sensitivities of agricultural soils. The conclusion that impacts will be negligible is therefore not robust. In the absence of a detailed, agriculture-focused assessment, the potential for long-term degradation of soil quality and associated effects on agricultural productivity cannot be excluded.

7.5.5 Inadequate assessment of agricultural impacts within the EIAR

The EIAR fails to provide a meaningful or sufficiently detailed assessment of agricultural impacts, notwithstanding that the receiving environment is demonstrably rural, actively farmed, and economically dependent on agricultural production. While baseline information is presented at a general level, there is a clear absence of any farm-level analysis that would allow for a proper understanding of how the proposed development may interact with existing agricultural enterprises.

In particular, the assessment does not identify or map individual farm holdings, farmyards, or agricultural enterprises within the zone of influence of the development. There is no consideration of farm types, stocking densities, land management practices, or the spatial relationship between the proposed development and actively managed agricultural lands. This omission is significant. The agricultural environment is not a homogeneous land cover; it comprises a network of individual holdings, each operating under specific regulatory, economic, and environmental constraints. The failure to engage with this level of detail means that the assessment does not reflect the reality of how agriculture operates on the ground.

This deficiency is further compounded by the failure to identify sensitive agricultural receptors. The EIAR does not consider the presence of potentially sensitive land uses such as intensive livestock enterprises, dairy operations, equine facilities, or any farms operating under organic certification. Nor does it assess the proximity of such receptors to the proposed emission sources or construction activities. Given that the wider area is characterised by active farming, the absence of this analysis represents a significant gap. Without identifying receptors, it is not possible to meaningfully assess impact.

Instead, the EIAR relies on high-level and generic conclusions in respect of agricultural effects. Impacts are either scoped out or subsumed within other environmental topics such as air quality, soils, or land use, without any integrated assessment of how these factors may combine to affect agricultural activity. For example, while potential emissions to air and risks to soils are considered in isolation, there is no attempt to assess how these pathways may affect fodder quality, livestock health, farm compliance obligations, or overall farm viability. The absence of this integrated approach undermines the robustness of the assessment.

The reliance on generic thresholds and standard environmental criteria further limits the usefulness of the EIAR in an agricultural context. Assessments are framed primarily in terms of compliance with ambient environmental standards or generic land use classifications, rather than the specific requirements of agricultural systems. As a result, the conclusions reached do not adequately reflect the sensitivities of a working agricultural landscape, where even minor changes in environmental conditions can have disproportionate effects on productivity and compliance.

There is also no consideration of cumulative or indirect effects on agriculture. The development is assessed in isolation, without reference to other existing or permitted infrastructure in the area, or to broader trends in land use change. This is particularly relevant in a rural setting where incremental industrialisation may, over time, erode the viability of agricultural activity. The EIAR does not engage with this issue.

Overall, the assessment of agricultural impacts is superficial and incomplete. It does not identify receptors, does not assess impacts at a meaningful spatial scale, and does not consider the functional realities of agricultural systems. The reliance on generalised conclusions, in the absence of detailed supporting analysis, means that the EIAR does not provide a reliable basis for concluding that the proposed development will not give rise to significant effects on agriculture. This represents a material deficiency in the environmental assessment.

7.6 Ground 6: Failure to protect biodiversity and adverse impacts on ecological networks and habitats

It is submitted that the EIAR fails to adequately identify, assess, and mitigate the biodiversity impacts arising from the proposed development, particularly in the context of its location within an actively managed rural landscape comprising interconnected habitats and ecological networks. While the assessment presents a generalised description of baseline ecological conditions, it does not meaningfully engage with the functional role of these habitats at a local or landscape scale, nor does it adequately consider how the proposed development may disrupt ecological connectivity, species movement, and habitat integrity. The result is an assessment that is largely desk-based, reliant on standardised methodologies, and lacking in the level of site-specific and seasonal detail required to properly characterise ecological sensitivity. In this context, the EIAR does not provide a robust or precautionary evaluation of potential impacts on biodiversity, and its conclusions of no significant effects are not supported by sufficiently detailed evidence.

7.6.1 Habitat loss and fragmentation

The EIAR identifies a range of habitats within and in the immediate environs of the subject site, as mapped by the applicant and reproduced below in Fig. 54.

The mapping confirms that the site does not exist in isolation but forms part of a wider, structurally connected agricultural landscape containing both managed and semi-natural habitats.

Fig. 54: Habitats confirmed on site (Source: Figure 5-8, EIAR)

The EIAR sets out a series of assertions in respect of the habitats present on and adjoining the site. These are addressed individually below.

7.6.1.1 Review of applicant's claims regarding habitats on site

The EIAR sets out a series of assertions in respect of the habitats present on and adjoining the site. These are addressed individually below.

Applicant Claim:

The GA1 habitat (Figure 5-9) constitutes the majority of the Proposed Projectarea and has been actively grazed during some surveys. During the IAS survey it was however noted that recent grazing had not occurred, and the grass had been allowed to grow. Species diversity is very low, and this habitat possesses very limited ecological value.

Fig. 55: Improved agricultural grassland (GA1) habitat on Site (Source: Fig. 5-9 of EIAR)

Rebuttal:

The applicant's characterisation of the site as possessing "very limited ecological value" is not supported when considered in the context of the wider evidence base. Notably, the LVIA submitted as part of the application clearly demonstrates the presence of active grazing (including sheep) within the site and adjacent sites, which directly contradicts the assertion that the lands were not recently grazed. This inconsistency raises questions regarding the reliability of the baseline survey observations.

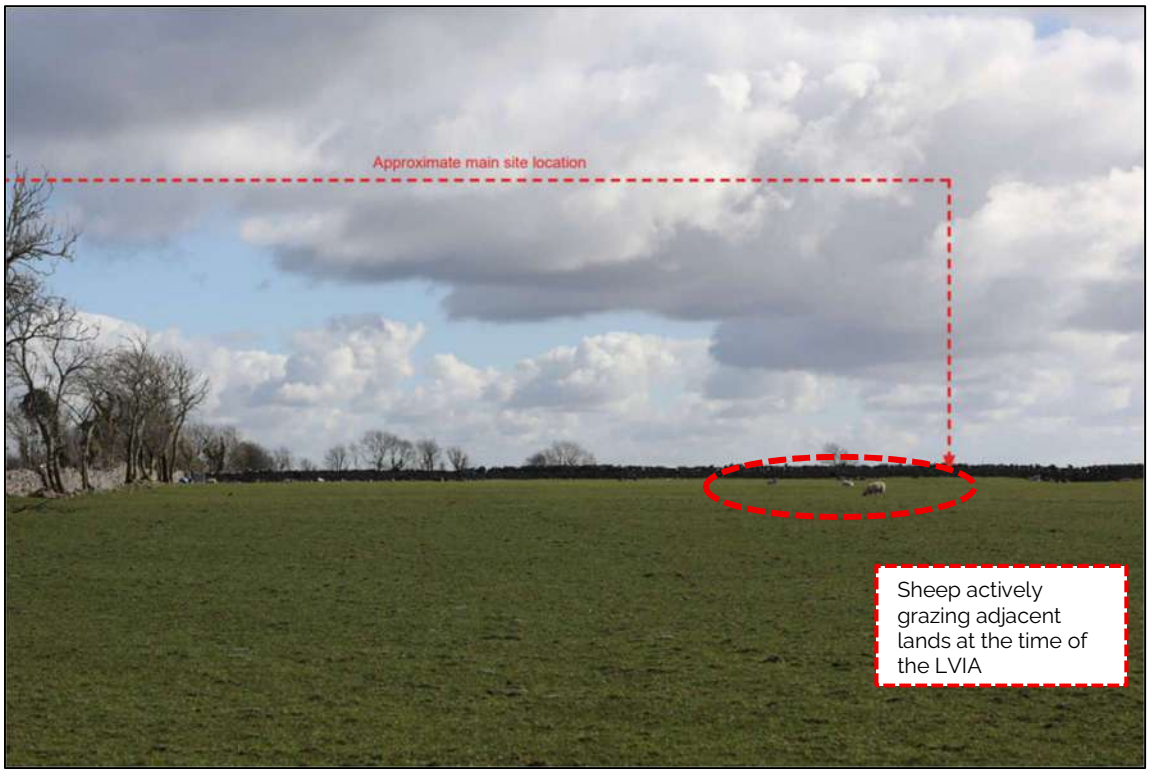


Fig. 56: – Evidence of active grazing (Source: VP05, LVIA Appendix 6)

The presence of active grazing is a material consideration. Grazing regimes directly influence sward structure, vegetation composition, and habitat condition, all of which underpin ecological assessment. The failure to accurately characterise such a fundamental aspect of land management undermines the validity of the conclusions drawn in respect of habitat value.

Furthermore, the EIAR's reliance on species diversity alone as a determinant of ecological value represents an unduly narrow and reductionist approach. Best practice ecological assessment requires consideration not only of species richness, but also of habitat function, structural characteristics, and role within the wider ecological network. In this regard, improved agricultural grassland cannot be dismissed as having negligible value simply on the basis of low botanical diversity.

Such habitats form part of a broader agricultural mosaic and provide important functional roles, including foraging opportunities for birds and mammals, and facilitating species movement across the landscape. This is particularly relevant in intensively managed rural environments, where semi-natural habitats are fragmented and connectivity is heavily dependent on the intervening agricultural matrix. The EIAR fails to undertake any meaningful assessment of these functional attributes. There is no evaluation of the site's role in supporting mobile species, no consideration of its contribution to ecological permeability, and no assessment of its relationship with adjacent higher-value habitats. Instead, the assessment relies on a static and site-bound classification, which does not reflect the dynamic nature of ecological systems.

In addition, the extent and continuity of the grassland across the site, as illustrated in the submitted figures, demonstrates that the lands form part of a coherent and uninterrupted landscape unit. The loss or industrialisation of such lands therefore has implications not only at the site level, but also in terms of wider habitat availability and connectivity.

Accordingly, **the conclusion that the GA1 habitat is of "very limited ecological value" is not adequately substantiated. It is based on incomplete and, in part, inconsistent baseline information, and fails to reflect the functional ecological role of the site within its receiving environment.**

Applicant Claim:

> *The BL1 with WL1 habitat (Figure 5-10) is predominantly made up of two native species: hawthorn (Crataegus monogyna) and brambles (Rubus sp.). The hedgerow is gappy in places but present along the majority of the eastern boundary. This habitat nonetheless has ecological value.*

Fig. 57: Stone wall (BL1) with overlying hedgerow (WL1) present on the Site (Source: Fig. 5-10 of EIAR)

Rebuttal:

The EIAR itself expressly **acknowledges that bat foraging and commuting activity across the site is "notable", particularly along the treelined northern boundary, and further confirms that the loss of linear habitats such as hedgerows and stone walls will reduce connectivity for bats, resulting in a "permanent significant negative impact at the local scale" in the absence of mitigation.**

This admission fundamentally undermines the earlier attempt to downplay the ecological importance of hedgerows on the basis that they are "gappy" or of limited value. On the contrary, the EIAR confirms that these

features are actively used by bats as commuting corridors and are therefore functionally important components of the local ecological network.

There is a clear internal inconsistency within the EIAR. On the one hand, hedgerows are described in qualitative terms as degraded or of limited value; on the other, they are acknowledged as supporting notable bat activity and as being integral to connectivity. These positions are irreconcilable and point to a lack of coherence in the assessment.

Furthermore, while the EIAR identifies the impact as "permanent significant negative" (prior to mitigation), there is no robust demonstration that the proposed mitigation measures will fully offset this loss of connectivity. In particular, there is no evidence-based assessment of how replacement planting or habitat creation will replicate the established linear features in terms of structure, maturity, or functionality, especially for commuting bat species which rely on continuous, sheltered corridors.

The EIAR also fails to assess the temporal dimension of impact. Even if replacement planting is proposed, there will be a substantial time lag—potentially decades—before such features achieve equivalent ecological functionality. During this period, connectivity will remain reduced, with consequent impacts on bat movement and foraging behaviour.

In addition, the assessment is confined to the site boundary and does not consider the role of these linear features within the wider landscape network. The severance of even a single hedgerow can have disproportionate effects where it forms part of a larger connected corridor system. This wider context is not examined.

In summary, the EIAR's own findings confirm that the hedgerow network is of functional ecological importance, particularly for bats. **The attempt to characterise these features as of limited value is therefore not supported by the evidence. The acknowledged permanent loss of connectivity represents a significant impact, which has not been adequately assessed or demonstrably mitigated.**

Applicant Claim:

> *The BL1 with WL2 habitat (Figure 5-11) is predominantly made up of ash (Fraxinus excelsior), and a large presence of ash dieback (Hymenoscyphus fraxineus) was noted on the trees. This habitat has ecological value.*

Fig. 58: Stone wall (BL1) with overlying treeline (WL2) present on the Site (Source: Fig. 5-11 of EIAR)

Rebuttal:

The applicant notes the presence of ash dieback within the treeline but appears to rely on this as an implicit justification for diminishing the ecological value of the feature. This approach is fundamentally flawed. Trees affected by ash dieback do not lose their ecological function in the short to medium term; on the contrary, they can continue to provide significant habitat value, including supporting invertebrates, birds and, critically, bats. This is expressly acknowledged elsewhere within the EIAR. **Section 5.5.4.4.2 confirms that a number of trees along the northern boundary, corresponding to this treeline, have bat roost potential**, and further notes that access works will require the removal of hedgerow and stone wall in proximity to these features. The EIAR therefore accepts that these trees are of functional ecological importance, notwithstanding their condition.

A clear inconsistency arises in the applicant's assessment. On the one hand, the treeline is downplayed due to ash dieback; on the other, it is recognised as containing trees with bat roost potential and forming part of a

commuting and foraging corridor (as established in Section 5.5.4.4.1). These positions are not reconcilable and indicate a selective and inconsistent interpretation of the baseline environment.

Furthermore, the EIAR proposes monitoring and potential future removal of trees where ash dieback progresses beyond certain thresholds. This introduces a **latent impact pathway** which has not been assessed. Should tree removal become necessary in the future, there is potential for loss of roosting habitat and further fragmentation of linear features. The EIAR does not assess this scenario, nor does it consider the cumulative effect of incremental tree loss over time.

The reliance on a commitment to undertake bat roost surveys "if required" at a future stage is not sufficient to address this risk. Such an approach defers assessment of potential impacts rather than evaluating them at the application stage, which is contrary to the requirements of a robust EIAR.

In addition, the EIAR fails to assess the **structural and connectivity role** of this treeline within the wider landscape. As a linear feature aligned along the site boundary, it is likely to function as a key ecological corridor, particularly for bats, which are known to utilise treelines and hedgerows for navigation and shelter. The removal or degradation of even sections of this feature has the potential to disrupt established commuting routes. No landscape-scale connectivity assessment is provided, and no analysis is undertaken to determine the significance of this feature within the broader ecological network. This omission is particularly significant given the EIAR's own acknowledgement of notable bat activity in the vicinity.

Finally, the EIAR does not adequately consider the **temporal dimension of impact**. The progressive decline of ash trees due to dieback, combined with potential removal for safety or operational reasons, may lead to a gradual erosion of the treeline over the lifetime of the development. This represents a long-term fragmentation effect which is not captured in the assessment.

Applicant Claim:

> *The BL3 (Figure 5-12) is a small concrete structure, with a metal roof and fully exposed to the air. It has negligible ecological value.*

Fig. 59: Buildings (BL3) habitat present on site (Source: Fig. 5-12 of EIAR)

Rebuttal:

The blanket assertion that the structure has "negligible ecological value" is not supported by the applicant's own baseline data and represents an unjustified and reductionist conclusion.

The bat survey undertaken as part of the EIAR explicitly identifies the presence of this structure and confirms that it **"was assessed as having low potential for roosting bats"**, while also acknowledging that it **"could be used as a night roost by bats… or provide a site for bats to roost while processing prey"** . This is a materially different conclusion to that presented in the EIAR chapter, which seeks to characterise the structure as having negligible ecological value.

The distinction between "low potential" and "negligible value" is significant. A structure with low roost potential still constitutes a **potential ecological receptor**, particularly in a landscape where alternative roosting opportunities appear limited. The presence of a **static bat detector positioned directly at the doorway of the structure** further confirms that the applicant considered the feature sufficiently relevant to warrant targeted survey effort. This directly contradicts any suggestion that the structure is of no ecological importance. Survey results recorded bat activity in the immediate vicinity of the structure, including multiple species (Leisler's bat, Common pipistrelle, Soprano pipistrelle and Whiskered bat), with **calls recorded inside the structure itself**. While the report concludes that the structure is not regularly used as a night roost, the detection of bat calls within the structure demonstrates **active use of the building by bats**, at least intermittently. This evidences ecological function and cannot reasonably be reconciled with a classification of negligible value.

Furthermore, the assessment appears to rely heavily on the structure's "exposed" location as a basis for discounting its ecological role. This is not a robust or evidence-based approach. Even exposed or semi-exposed structures can provide transitional shelter, opportunistic roosting, or temporary refuge, particularly for species such as pipistrelles and Brown long-eared bats. The bat report itself explicitly acknowledges such potential uses. Critically, the assertion that the structure is "fully exposed to the air" is not supported by the available evidence. As confirmed in the bat report, the structure is roofed with corrugated metal sheeting and therefore cannot be considered fully open or exposed. This is clearly demonstrated in Fig. 60 below, which shows the retained roof structure and partially enclosed internal spaces.

Fig. 60: Photo of the structure – corrugated metal roof evident (Source: Photo 4, Bat Report)

The presence of a roof and enclosed sections materially increase the suitability of the structure for use by bats, providing shelter from weather, reduced light levels, and potential roosting or resting opportunities. The mischaracterisation of the structure as "fully exposed" therefore undermines the applicant's conclusion and further calls into question the reliability of the ecological assessment.

Crucially, no detailed internal inspection, emergence/re-entry surveys, or seasonal roost suitability assessment has been presented in respect of the structure. The conclusion of negligible ecological value is therefore not supported by a proportionate level of survey effort. In the absence of comprehensive survey data, the potential for occasional or seasonal use cannot be excluded.

In addition, the structure must be considered in the context of the wider site, where the EIAR identifies that much of the landscape is **"too exposed to provide ideal foraging conditions for bats"** . In such circumstances, even suboptimal features—such as this building—may assume **increased ecological importance** as intermittent shelter or navigation landmarks within an otherwise open environment. The EIAR also fails to assess the **functional role** of the structure within the wider ecological network. There is no consideration of how its removal or disturbance may affect bat behaviour, particularly in combination with the loss or alteration of other features such as hedgerows and treelines. This absence of cumulative assessment further undermines the reliability of the conclusions reached.

Overall, the applicant's characterisation of the structure as having "negligible ecological value" is contradicted by its own survey evidence, which confirms both **potential suitability for roosting and recorded bat activity within**

the structure. **The assessment therefore materially understates the ecological function of this feature and fails to apply a precautionary approach, particularly in respect of protected species such as bats.**

Applicants Claim:

There is no WS1 habitat within the Site boundary, however, multiple instances are present in the areas immediately surrounding it (e.g. Figure 5-13). Species compositions are typically a mixture of hawthorn, brambles and gorse (Ulex Europaeus). This habitat has ecological value.

The WS1 and WS2 area to the east (Figure 5-14) is comprised of a mixture of gorse and blackthorn (Prunus spinosa). This area has significant ecological value.

Fig. 61: Scrub (WS1) habitat present in the fields adjacent to the Site (Source: Fig. 5-13 of EIAR)

Fig. 62: Scrub and immature woodland (WS1/WS2) habitat in the field to the east of the Site (Source: Fig. 5-14 of EIAR)

Rebuttal:

The applicant's own assessment unequivocally identifies scrub (WS1) and scrub/immature woodland (WS1/WS2) habitats in the immediate vicinity of the site as having ecological value, and in the case of the eastern lands, **"significant ecological value."** This is a critical baseline finding. However, having identified these habitats as ecologically important, the EIAR fails to follow through with any meaningful assessment of how the proposed development may affect them. This represents a fundamental break in the assessment logic.

The approach adopted is overly narrow and artificially constrained by the red line boundary. The absence of WS1 habitat within the application site is relied upon to minimise impacts, yet the EIAR simultaneously acknowledges that such habitats occur immediately adjacent to the site and form part of the receiving environment. Ecological processes do not respect application boundaries. The proximity of habitats of acknowledged ecological importance gives rise to a clear potential for indirect effects, which are not adequately assessed.

There is no evidence of any **zone of influence analysis**, no identification of effect pathways, and no attempt to quantify or even qualitatively assess how impacts may propagate beyond the site boundary. In particular, the

EIAR does not assess the potential for:

- disturbance arising from construction and operational noise;
- light spill and artificial illumination affecting nocturnal species;
- airborne emissions and deposition affecting vegetation and associated fauna;
- hydrological or drainage changes altering local habitat conditions; or
- increased human activity and edge effects degrading habitat quality over time.

These are standard and well-established pathways of impact in ecological assessment, particularly where sensitive habitats are located in close proximity to development. Their absence from the EIAR is a significant omission. This failure is compounded by the lack of any **buffer analysis**. No stand-off distances are defined, no sensitivity gradients are mapped, and no attempt is made to determine how far impacts may extend into these habitats. This is particularly problematic in respect of the WS1/WS2 habitat to the east, which is expressly described as having **"significant ecological value."** In the absence of such analysis, it is not possible to conclude that this habitat will not be adversely affected.

In addition, the EIAR adopts an inconsistent and reductionist approach to ecological value. While these habitats are acknowledged as being of value (and in one case significant value), this recognition is not translated into a corresponding level of assessment or protection. The evaluation appears to be confined to descriptive classification, without any meaningful consideration of **ecological function, species usage, or landscape context**.

This is particularly evident in the treatment of faunal use. The EIAR elsewhere identifies features such as a fox den within the vicinity of the site, which is a clear indicator of active and ongoing faunal utilisation of these habitats. Such evidence elevates the ecological sensitivity of the area and demonstrates that these habitats are not merely of botanical interest but are functionally important within the local ecosystem. Notwithstanding this, the EIAR does not incorporate this information into its assessment of impact pathways or significance. There is also no assessment of **functional linkages** between the application site and these adjacent habitats. Given the agricultural nature of the site and the presence of boundary features such as hedgerows and treelines, it is highly likely that the site forms part of a wider ecological network, facilitating movement and foraging for a range of species. The adjacent WS1 and WS1/WS2 habitats are likely to be integral components of this network. The potential for the proposed development to disrupt or sever these linkages is not examined.

Furthermore, the EIAR fails to consider the **cumulative and synergistic effects** arising from multiple impact pathways acting in combination. For example, the interaction of lighting, noise, and habitat loss or modification may result in a greater overall impact than each effect considered in isolation. No such cumulative analysis is presented.

In effect, the EIAR identifies habitats of ecological and significant ecological value, yet treats them as if they are unaffected by the development by virtue of falling just outside the site boundary. This is not a scientifically or legally robust approach. The absence of a detailed, site-specific assessment of indirect effects, buffer zones, and functional connectivity means that the conclusions reached are not supported by the evidence.

In these circumstances, it cannot be concluded that the proposed development will not give rise to adverse effects on these habitats. On the contrary, the combination of proximity, acknowledged ecological value, and the absence of appropriate assessment introduces a level of uncertainty that is incompatible with the requirements of a robust Environmental Impact Assessment and the principles of proper planning.

Applicant Claim:

The ED1 area (Figure 5-15) overlaps with the proposed access route. The floral ecological quality is low, however, there is a fox den present within this habitat.

Fig. 63: Spoil and bare ground and recolonising bare ground (ED2/ED3) habitat present on Site (Source: Fig. 5-15 of EIAR)

Rebuttal:

The applicant's characterisation of this habitat as being of "low ecological value" is based solely on its floral composition and is therefore fundamentally incomplete. While the vegetation associated with ED1/ED2/ED3 habitats may be limited or early successional in nature, ecological value cannot be determined on botanical criteria alone. The EIAR itself confirms the presence of a fox den within this area, which is a clear and unequivocal indicator of **active faunal use** and functional ecological importance.

The presence of a den represents more than incidental usage; it indicates that the habitat provides shelter, protection, and breeding or resting opportunities for a mammal species within the site. This elevates the ecological sensitivity of the area and requires a more nuanced and detailed assessment than that presented. Notwithstanding this, the EIAR does not undertake any meaningful evaluation of the significance of this feature. There is no assessment of whether the den is active, no consideration of seasonal usage (including potential breeding periods), and no evaluation of how the proposed development—particularly the construction of an access route directly overlapping this habitat—may affect it. The omission of such analysis is particularly significant given that the impact pathway is direct and unavoidable. The proposed access route will result in the disturbance, and likely removal, of the habitat in which the den is located. This constitutes a direct impact on an identified faunal feature, yet the EIAR does not assess the magnitude or significance of this impact in ecological terms. There is no consideration of disturbance effects, displacement, or the potential loss of a resting or breeding site, nor is there any clear identification of appropriate mitigation measures.

Furthermore, the assessment fails to consider the role of this habitat within the wider ecological network. Early successional and disturbed habitats such as ED1/ED2/ED3 can provide important niches for a range of species, including mammals, invertebrates, and ground-nesting birds. Their value is often disproportionate to their botanical diversity, particularly where they provide structural features—such as burrows, bare ground, and varied microhabitats—that are not present in more intensively managed agricultural land. The EIAR does not engage with this functional dimension.

There is also no evidence of any targeted survey effort focused on this feature. The identification of the fox den appears to be incidental, and there is no follow-up assessment to determine its extent, usage, or ecological significance. This is not consistent with best practice, particularly where a development directly intersects with a habitat supporting active faunal use.

In addition, the EIAR does not consider the potential for cumulative effects. The loss of even a single den site may be locally significant where alternative habitats are limited or fragmented. When considered alongside the broader pattern of habitat loss, disturbance, and fragmentation associated with the proposed development, the impact on this feature may contribute to a wider degradation of ecological function.

Overall, the applicant's reliance on a narrow, vegetation-based classification to assign "low ecological value" to this habitat is not supported when faunal usage is taken into account. The confirmed presence of a fox den demonstrates that the habitat performs an active ecological role, and its direct overlap with the proposed access route gives rise to a clear and unassessed impact pathway. In the absence of a detailed, site-specific evaluation of this feature, the conclusions of the EIAR cannot be considered robust or reliable.

Applicant Claim:

> *The ER2/FP1 habitat (Figure 5-16) is a small well-like area, lined with stones and fern species with a hawthorn canopy. There are no works proposed in this area, which is outside of the redline boundary. This habitat has the potential to house different types of fauna.*

Fig. 64: Artificial underground habitat (EU2) present to the northeast of the Site (Source: Fig. 5-16 of EIAR)

Rebuttal:

The applicant acknowledges that this feature has the potential to support fauna; however, no meaningful attempt is made to verify this potential through targeted survey or detailed assessment. This reliance on unverified "potential" rather than evidence-based evaluation represents a clear deficiency in the baseline ecological assessment. Where a habitat is identified as having the capacity to support fauna—particularly where it comprises a sheltered, enclosed, and structurally complex feature such as a well-like underground space—best practice requires that its actual usage be established through appropriate survey methods. No such assessment is presented. The omission is particularly significant given the nature of the feature. Artificial underground habitats of this type can provide suitable conditions for a range of species, including small mammals, amphibians, and potentially bats, due to their stable microclimate, shelter from disturbance, and protection from predation. The presence of a hawthorn canopy further enhances the suitability of the feature by providing cover and integration within the surrounding habitat network. Despite this, the EIAR does not include any inspection, monitoring, or seasonal survey to determine whether the feature is actively used.

Instead, the assessment appears to rely on the fact that no direct works are proposed within the red line boundary as a basis for discounting impact. This is not a valid or robust approach. The absence of direct encroachment does not preclude the potential for **indirect effects**, particularly where a feature lies in close proximity to a

development of this scale and nature. Such effects may arise through a range of pathways, including disturbance from noise and vibration during construction, changes in hydrological conditions, alteration of drainage patterns, light spill, and increased human activity. None of these pathways are examined in the EIAR.

In particular, the hydrological sensitivity of such a feature warrants consideration. A well-like structure lined with stone and supporting ferns is likely to be influenced by local groundwater or surface water conditions. Any alteration to drainage regimes associated with site development, access construction, or groundworks has the potential to affect the moisture balance and ecological function of the habitat. No assessment of this pathway is provided.

There is also no consideration of **functional connectivity**. Features of this nature often act as refugia or stepping stones within a wider ecological network. Their value is not solely derived from their footprint, but from their role in supporting species movement and persistence across the landscape. The EIAR does not assess how this feature interacts with adjacent habitats, nor how disturbance in the surrounding area may affect its suitability over time.

Furthermore, the absence of survey data introduces a level of uncertainty that is not acknowledged in the conclusions of the EIAR. The identification of potential faunal usage without verification should, in accordance with the precautionary principle, trigger a more cautious and robust assessment. Instead, the EIAR proceeds on the implicit assumption that the feature is of limited significance, without evidential basis.

In summary, the applicant has identified a habitat feature with clear potential to support fauna but has failed to undertake the necessary steps to confirm its ecological function. The reliance on the red line boundary to discount impacts, combined with the absence of any assessment of indirect effects or functional connectivity, represents a significant gap in the EIAR. In these circumstances, it cannot be concluded that the proposed development will not give rise to adverse effects on this feature.

Applicant Claim:

Groundwater dependant pond which is present year round (FL3/FL6) (Figure 5-17).

Fig. 65: An example of pond habitat in proximity of the Site (Source: Fig. 5-17 of EIAR)

Rebuttal:

The identification of a groundwater-dependent pond within the vicinity of the site is a matter of considerable ecological significance. Habitats of this nature are inherently sensitive due to their reliance on stable hydrological conditions and are widely recognised as supporting distinct and often specialised ecological communities. Notwithstanding this, the EIAR does not provide a robust or detailed assessment of how the proposed development may affect this feature. The assessment is limited to a descriptive acknowledgement of the pond's presence, without any meaningful evaluation of its ecological function, hydrological regime, or sensitivity to change. There is no analysis of groundwater flow pathways, no characterisation of the source or sustainability of the water supply, and no assessment of the potential connectivity between the site and the pond. In the absence of such information, it is not possible to determine the extent to which the pond may be influenced by site activities.

This omission is particularly significant given the range of potential impact pathways associated with the proposed development. Construction activities, ground disturbance, and the introduction of impermeable

surfaces have the potential to alter local drainage patterns and groundwater recharge. Similarly, accidental releases, surface runoff, or the mobilisation of contaminants may give rise to pollution pathways that could affect water quality within the pond. The EIAR does not assess any of these risks in a site-specific or quantitative manner. Groundwater-dependent terrestrial ecosystems and associated aquatic features are especially vulnerable to even minor changes in hydrological conditions. Small alterations in water level, flow regime, or water quality can result in disproportionate ecological effects, including changes in species composition, habitat degradation, or loss of ecological function. Despite this, the EIAR does not undertake any sensitivity analysis or consider threshold effects in relation to this habitat.

Furthermore, there is no evidence of any targeted ecological survey of the pond itself. The EIAR does not identify whether the pond supports amphibians, invertebrates, or other fauna, nor does it assess its potential role as a breeding or foraging habitat. This is a notable omission, as ponds of this type frequently support species of conservation interest and may form part of wider ecological networks. The absence of such baseline data introduces a significant degree of uncertainty into the assessment.

The reliance on the absence of direct works within the immediate footprint of the pond, if implied, is not sufficient to conclude that impacts will not arise. Indirect effects—particularly those mediated through hydrological and pollution pathways—can extend well beyond the development boundary. The EIAR does not define any zone of influence for such effects, nor does it establish appropriate buffer distances or protective measures.

In addition, there is no consideration of cumulative effects. When viewed in conjunction with other elements of the proposed development, including land use change, soil disturbance, and potential emissions, the risk to sensitive hydrological receptors such as this pond may be increased. This cumulative dimension is not addressed. In summary, while the EIAR identifies the presence of a groundwater-dependent pond, it fails to undertake the level of analysis required to assess its sensitivity or the potential impacts arising from the proposed development. The absence of hydrological assessment, ecological survey, and pathway analysis represents a significant gap. In these circumstances, the conclusion that the development will not adversely affect this habitat is not supported by the evidence, and the potential for significant indirect effects cannot be excluded.

Applicant Claim:

> *The grid connection route is predominately BL3 comprising tarmac roads, these have negligible ecological value.*

Rebuttal:

While it is accepted that sections of the grid connection route comprise existing tarmac roads and artificial surfaces of inherently limited ecological value, the applicant's characterisation is overly simplified and does not accurately reflect the receiving environment as a whole. The EIAR itself identifies the presence of **semi-natural habitats along sections of the route**, including hedgerows (WL1), scrub (WS1), dry meadows and grassy verges (GS2), and stone walls (BL1), particularly at HDD crossing locations and temporary working areas.

These features, although linear and in some cases fragmented, are of ecological relevance and contribute to habitat connectivity and faunal usage within the wider landscape. Their presence demonstrates that the route cannot be considered solely in terms of artificial surfaces, and any assessment based on such a characterisation risks underestimating potential impacts.

Notwithstanding this, the EIAR does not provide a detailed or site-specific assessment of these habitats along the route. There is no comprehensive mapping of their extent, no evaluation of their ecological function, and no assessment of how construction activities—including trenching, HDD works, vegetation clearance, or temporary land take—may affect them. The potential for disturbance, removal, or degradation of these features is therefore not adequately addressed.

Furthermore, the assessment does not consider the **cumulative effect of multiple small-scale interventions** along the route. While individual sections of impact may be limited in isolation, their combined effect on habitat continuity and ecological connectivity may be more significant, particularly in a predominantly agricultural landscape where such features form important ecological corridors.

The reliance on a high-level classification of the route as being of negligible ecological value also results in a lack of appropriate precaution. In the absence of detailed survey data and impact assessment, it cannot be assumed that all sections of the route are of low ecological sensitivity. This is particularly relevant where works extend beyond the existing road footprint into verges, boundaries, or adjoining land. In this context, the precautionary principle should apply. Where uncertainty exists due to incomplete baseline information or limited assessment, the potential for ecological impact should not be discounted. Instead, a more detailed and evidence-based evaluation is required to ensure that all habitats and features of ecological relevance are properly identified and protected.

In summary, while the predominance of artificial surfaces along parts of the route is acknowledged, the EIAR fails to adequately assess the ecological features that are present and the potential impacts arising from the proposed

works. The conclusions reached are therefore not sufficiently robust and do not reflect a precautionary approach to environmental assessment.

Applicant Claim:

> *There are a number of small areas of semi natural habitats present along the grid connection route located at the HDD motorway crossing points and the temporary passing bays. The habitats present include GS2 Dry meadows and grassy verges, WL1 Hedgerows, WS1 Scrub and BL1 Stone walls. The HDD crossings are located on the historic road alignment prior to the motorway construction and new overpasses. As such the Launch and receiving pits are located in areas that have been previously disturbed. Additionally, trimming of foliage within the road corridor may be required.*

Fig. 66: M17 HDD crossing point looking west toward the motorway (Source: Fig. 5-18 of EIAR)

Fig. 67: Eastern M6 HDD crossing point looking south (Source: Fig. 5-19 of EIAR)

Fig. 68: Western M6 HDD crossing point looking north (Source: Fig. 5-20 of EIAR)

Rebuttal:

While the applicant acknowledges the presence of semi-natural habitats along the grid connection route—including dry meadows and grassy verges (GS2), hedgerows (WL1), scrub (WS1), and stone walls (BL1)—these features are subsequently discounted on the basis that the areas have been "previously disturbed". This is not a valid or evidence-based justification for assigning reduced ecological value or sensitivity.

Disturbance history does not equate to ecological insignificance. On the contrary, disturbed or transitional habitats frequently support a range of species and can provide important ecological functions within intensively managed landscapes. Roadside verges, scrub patches, and hedgerow remnants are well recognised as biodiversity resources, often acting as refugia, foraging areas, and movement corridors for a variety of fauna. In agricultural settings such as that surrounding the site, these features may represent some of the **only semi-natural habitat available**, and their ecological importance is therefore heightened rather than diminished.

The EIAR does not undertake any detailed assessment of these habitats. There is no evaluation of species usage, no survey of faunal activity, and no consideration of their role in maintaining ecological connectivity along the route corridor. The reference to "previous disturbance" is used as a proxy for low value, without supporting evidence, and serves to prematurely discount potential impacts.

Furthermore, the EIAR fails to assess the **nature, extent, and duration of proposed works** in these locations. HDD crossings, launch and receiving pits, and associated temporary works areas will inevitably involve ground disturbance, vegetation clearance, and construction activity extending beyond the existing road surface. The potential for direct habitat loss, as well as indirect effects such as compaction, edge disturbance, and alteration of vegetation structure, is not examined in any meaningful way.

The reference to "trimming of foliage" is also insufficiently defined. There is no quantification of the extent of vegetation removal, no identification of affected features, and no assessment of the ecological consequences. In the case of hedgerows and scrub, even partial removal or trimming can disrupt habitat structure, reduce shelter, and sever ecological linkages, particularly where such features function as linear corridors. Importantly, the EIAR does not consider the **cumulative impact of multiple interventions** along the grid connection route. While each individual crossing or working area may be limited in scale, the repeated disturbance of semi-natural habitats at multiple locations has the potential to result in a more significant overall impact. This includes the progressive fragmentation of habitat corridors and the reduction of ecological continuity across the landscape.

There is also no assessment of **temporal effects**, including the duration of disturbance and the capacity for habitat recovery following construction. In the absence of defined reinstatement or enhancement measures, it cannot be assumed that affected habitats will return to their baseline condition or functionality. The photographic

evidence provided (Figures 5-18 to 5-20) clearly demonstrates the presence of established vegetation and habitat structure within these areas. These are not sterile or ecologically inactive environments, but rather components of a functioning landscape mosaic. The EIAR does not reconcile this visual evidence with its conclusion of limited ecological importance.

In summary, the applicant acknowledges the presence of semi-natural habitats but dismisses their significance on the basis of prior disturbance, without undertaking the level of assessment required to support such a conclusion. The absence of detailed survey data, impact quantification, and cumulative analysis represents a clear deficiency. A precautionary approach would require that these habitats be treated as ecologically relevant features, with their potential loss, disturbance, and fragmentation fully assessed.

Applicant Claim:

> *There are a number of trees along the grid connection route, all of which have been assessed for their overall health and value in the accompanying arborist's report. Of the 54 trees assessed none were of high value/quality, 6 were of moderate value/quality, 29 of low value/quality and 19 of such low quality that condition that they will not survive 10+ years. Given the proximity of some trees to the proposed grid connection route, impacts such as root damage may be possible in some cases.*

Rebuttal:

The applicant's reliance on arboricultural classifications of tree quality is misplaced in the context of an ecological assessment. The categorisation of trees as being of "low" or "moderate" quality is derived from considerations of structural condition, amenity value, and lifespan, and does not equate to ecological value or function. Trees that are of limited arboricultural quality may nonetheless provide significant ecological benefits, including habitat provision, foraging opportunities, and connectivity within the wider landscape. In particular, trees located along road corridors and field boundaries often form part of linear habitat networks, functioning as stepping stones or linkages between otherwise fragmented habitats. Even individual or declining trees can support invertebrates, nesting birds, and bat activity, and may contribute to commuting routes when associated with hedgerows or treelines. The EIAR does not assess any of these ecological functions. The emphasis placed on the condition and projected lifespan of the trees is also misleading. Trees affected by age, disease, or structural defects can be of heightened ecological importance, as they may contain features such as cavities, cracks, loose bark, and deadwood, all of which are valuable for a range of species. The suggestion that trees unlikely to survive beyond 10 years are of limited importance fails to recognise this well-established ecological principle.

Furthermore, while the EIAR acknowledges that impacts such as root damage may occur, there is no assessment of the ecological consequences of such impacts. Root damage can lead not only to tree decline or loss, but also to the degradation of associated habitats and microhabitats. The potential for indirect effects, including canopy loss, reduced shelter, and disruption of ecological connectivity, is not considered.

There is also no evidence of any targeted ecological survey of these trees. In particular, no bat roost assessment or detailed inspection for features of ecological interest is referenced in this context, despite the known association between trees and roosting or commuting bats. This omission is notable given the EIAR's broader identification of bat activity within the study area.

In addition, the EIAR does not assess the **cumulative effect of incremental tree loss or damage** along the grid connection route. While impacts to individual trees may be considered minor in isolation, the collective effect of multiple interventions has the potential to reduce habitat continuity and weaken ecological networks across the landscape. This cumulative dimension is not addressed.

The assessment is therefore limited to a narrow, arboricultural perspective and does not provide a comprehensive evaluation of ecological value or impact. In the absence of an ecological assessment of these trees, including their role in habitat provision and connectivity, the conclusion that impacts will be insignificant is not supported.

A precautionary approach would require that all trees, irrespective of arboricultural classification, be considered in terms of their ecological function, and that potential impacts—both direct and indirect—be fully assessed and appropriately mitigated.

7.6.2 Disturbance effects from noise, lighting and human activity

The EIAR acknowledges the presence of ecological receptors within and surrounding the site, including habitats used by birds, bats and terrestrial fauna, yet the assessment of disturbance effects arising from noise, artificial lighting and increased human activity is limited in scope and lacks the level of detail required for a development of this nature and scale. The receiving environment, as established in the biodiversity chapter, is not an isolated or degraded landscape, but rather an active agricultural mosaic defined by hedgerows, treelines, grassland and adjoining semi-natural habitats. Such environments are inherently sensitive to disturbance, particularly where species rely on linear features and low levels of background activity.

In respect of noise, the EIAR does not adequately assess the behavioural response of fauna to both construction and operational noise. While noise levels may be considered acceptable from a human amenity perspective, this does not equate to ecological insignificance. Many species, particularly birds and mammals, are sensitive to changes in ambient noise levels, which can interfere with communication, foraging behaviour, predator detection and breeding success. This is especially relevant in a rural environment where baseline noise levels are relatively low. The EIAR does not provide any species-specific assessment or threshold analysis in this regard, nor does it identify zones of influence within which disturbance effects may occur.

The assessment of lighting impacts is similarly deficient. The introduction of artificial lighting into a predominantly dark rural landscape represents a fundamental change in environmental conditions. This is of particular importance for bat species, which are known to be highly sensitive to light spill and illumination of commuting routes. The EIAR identifies bat activity within the site, including along boundary features such as hedgerows and treelines, yet there is no detailed analysis of how lighting associated with the development may affect these features. There is no lux contour mapping, no identification of sensitive corridors, and no demonstration that dark flight paths will be maintained.

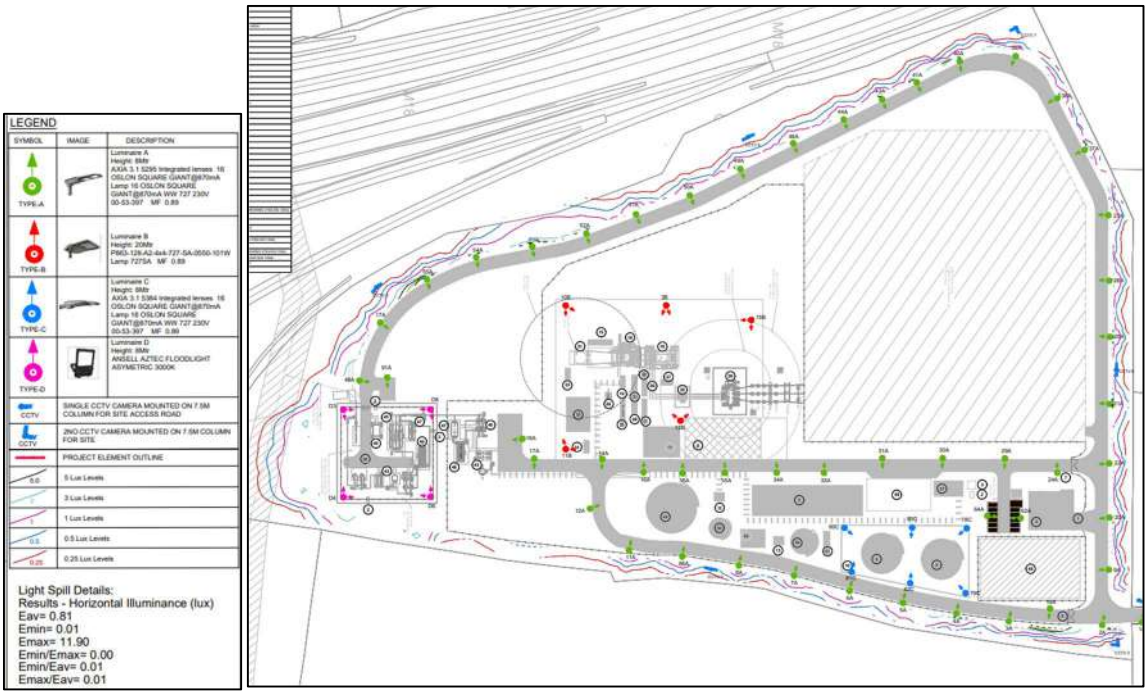


Fig. 69: Lighting layout / predicted light spill (Source: Proposed Site Lighting Layout Drwg No. PEK3-ATK-ZZ-ZZ-DR-EE-90130)

The absence of such analysis is a significant omission. Hedgerows and treelines, which the EIAR itself acknowledges as having ecological value, function as commuting routes for bats and other species. Illumination of these features can result in avoidance behaviour, effectively severing ecological connectivity even where the physical structure remains intact. This represents a form of indirect habitat loss which is not accounted for in the assessment.

Increased human activity associated with both the construction and operational phases also gives rise to disturbance effects which are not adequately assessed. The site, while agricultural in use, is not subject to continuous or intensive human presence. The introduction of a permanent industrial facility will result in a marked increase in activity, including vehicle movements, maintenance operations, and general site presence. Such changes can alter the behaviour of wildlife, leading to displacement from otherwise suitable habitats.

The EIAR does not attempt to quantify or spatially define these disturbance effects. There is no assessment of buffer distances for sensitive species, no consideration of breeding or nesting periods, and no evaluation of cumulative disturbance arising from the combination of noise, lighting and activity. This is particularly relevant in the context of adjacent habitats identified as having ecological value, including scrub and immature woodland to the east, which may support a range of species sensitive to disturbance.

Fig. 70: Habitats confirmed on site (Source: Figure 5-8, EIAR)

Furthermore, the assessment treats disturbance effects in isolation, rather than considering their interaction. In practice, ecological disturbance rarely arises from a single source; rather, it is the combination of noise, light and human presence that gives rise to significant effects. The EIAR does not adopt this integrated approach, resulting in an underestimation of potential impacts.

The lack of a robust disturbance assessment is particularly notable given that the EIAR elsewhere identifies ecological receptors and habitat features of value. There is therefore a disconnect between the baseline characterisation and the impact assessment. The presence of ecological receptors is acknowledged, but the pathways through which they may be affected are not fully explored.

In the absence of detailed, site-specific analysis, the conclusion that disturbance effects will be negligible or not significant is not supported. The assessment does not provide sufficient evidence to demonstrate that birds, bats and terrestrial fauna will not be adversely affected by the combined effects of noise, lighting and increased human activity.

A precautionary approach would require that these disturbance pathways be fully assessed, including the identification of sensitive receptors, the modelling of light and noise propagation, and the evaluation of behavioural responses. In the absence of such analysis, there remains a clear and unresolved risk of adverse effects on biodiversity and ecological networks.

7.6.3 Impacts on protected and notable species

The EIAR identifies the presence of a range of habitats capable of supporting protected and notable species, including birds, bats and amphibians, yet the assessment of impacts on these receptors is limited, fragmented and not sufficiently grounded in a robust understanding of species behaviour or ecological function. The receiving environment, as established in the baseline, comprises a network of agricultural grassland, hedgerows, treelines, scrub and adjoining semi-natural habitats, all of which are known to support protected fauna. Notwithstanding this, the EIAR adopts a largely desk-based and generalised approach to impact assessment, with insufficient consideration of how species actually use the site and its surroundings.

In respect of avifauna, the EIAR does not provide a comprehensive assessment of breeding or wintering bird activity within the site and its immediate hinterland. Agricultural grassland, particularly when actively grazed or managed for silage, can provide important foraging habitat for a range of species, while hedgerows and treelines offer nesting and shelter opportunities. The photographic evidence submitted as part of the LVIA demonstrates active agricultural use of the lands, including grazing, which in turn supports ecological interactions and species usage. However, the EIAR does not translate this baseline into a meaningful assessment of ornithological sensitivity.

There is no detailed evaluation of breeding territories, nesting locations, or seasonal usage patterns, nor is there any identification of species of conservation concern that may be present. Similarly, the potential use of the site by wintering birds, including species reliant on open grassland habitats, is not adequately addressed. The absence of seasonal survey coverage or targeted bird surveys further undermines the reliability of the assessment. In these circumstances, the conclusion that impacts on birds will be negligible is not supported by sufficient evidence. Fig. 70 above identifies the habitats and field patterns supporting bird activities.

The assessment of bat activity is similarly deficient. The EIAR acknowledges that bat foraging and commuting activity is present within the site, particularly along linear features such as hedgerows and treelines. It is further acknowledged that the removal or disturbance of such features would result in a permanent significant negative impact at the local scale in the absence of mitigation. Despite this, the assessment does not fully explore the implications of the proposed development for bat activity. There is no comprehensive mapping of commuting routes, no identification of key foraging areas, and no assessment of how these may be affected by the combined impacts of habitat loss, lighting, and disturbance. This is a significant omission given the sensitivity of bats to changes in landscape structure and light levels. The introduction of artificial lighting, in particular, has the potential to disrupt commuting behaviour and sever established flight paths, even where physical habitat features are retained.

Furthermore, while the EIAR states that no bat roosts were recorded during surveys, it also acknowledges the presence of trees with roost potential and structures that may provide opportunistic roosting opportunities. The absence of confirmed roosts cannot be equated with absence of use, particularly where survey effort, timing or methodology may limit detection. The precautionary principle therefore requires that potential roosting features be treated as ecologically sensitive unless robustly demonstrated otherwise.

Fig. 71: Treelines and hedgerows forming potential bat commuting routes (Source: Fig. 5-10, EIAR)

Fig. 72: Treelines and hedgerows forming potential bat commuting routes (Source: Fig. 5-11, EIAR)

In relation to amphibians and other protected fauna, the EIAR identifies features such as a groundwater-dependent pond and artificial underground structures with the potential to support faunal species. However, there is no detailed survey or assessment of amphibian presence, breeding activity, or habitat suitability. Groundwater-dependent habitats are of particular ecological importance and may support species such as frogs, newts or other aquatic and semi-aquatic fauna. The absence of targeted survey data represents a significant gap in the baseline.

The EIAR does not assess potential impact pathways for these species, including hydrological changes, water quality effects, or disturbance during construction. Nor does it consider the connectivity between aquatic habitats and surrounding terrestrial environments, which is critical for amphibian life cycles. Similarly, the potential use of scrub, hedgerows and grassland habitats by small mammals and other protected fauna is not examined in any meaningful way.

Fig. 73: Groundwater-dependent pond and associated habitats less than 250metres west of the access track (Source: Fig. 5-17, EIAR)]

The approach adopted in the EIAR is therefore characterised by a reliance on absence of evidence rather than evidence of absence. Where surveys have not identified specific species or features, the assessment proceeds on the basis that impacts will be negligible, without adequately considering limitations in survey scope, timing or methodology. This is not consistent with best practice in ecological assessment, particularly where protected species are concerned.

In addition, there is no integrated assessment of how different impact pathways may interact. The combined effects of habitat loss, disturbance, lighting and operational activity have the potential to give rise to cumulative impacts on species, particularly those reliant on interconnected habitats. The EIAR does not address this cumulative dimension, instead considering impacts in isolation.

Overall, the assessment of impacts on protected and notable species is incomplete and lacks the level of detail required to support the conclusions reached. The EIAR does not provide a robust evidential basis to demonstrate that the proposed development will not adversely affect breeding and wintering birds, bat activity and commuting routes, or amphibians and other protected fauna. In the absence of comprehensive survey data and a detailed, site-specific impact assessment, the potential for adverse effects cannot be excluded.

7.6.4 Deficiencies in ecological survey coverage and seasonal timing

The reliability of any ecological impact assessment is fundamentally dependent on the quality, timing and completeness of baseline survey data. In this instance, the EIAR does not demonstrate that surveys have been undertaken in accordance with recognised best practice in terms of seasonal coverage, nor does it provide sufficient evidence that key ecological receptors have been surveyed at appropriate times of year. This represents a critical deficiency, as the absence of seasonally appropriate data introduces a level of uncertainty that undermines the validity of the entire biodiversity assessment.

Ecological survey requirements are inherently seasonal. Many species can only be reliably detected during specific periods, such as breeding seasons for birds, peak activity periods for bats, or spring and early summer windows for amphibians and botanical surveys. The failure to align survey effort with these optimal periods can result in false negatives, whereby species or ecological functions are present but not recorded. This risk is particularly acute in agricultural landscapes such as the subject site, where species usage can vary significantly throughout the year in response to farming cycles, vegetation growth and climatic conditions.

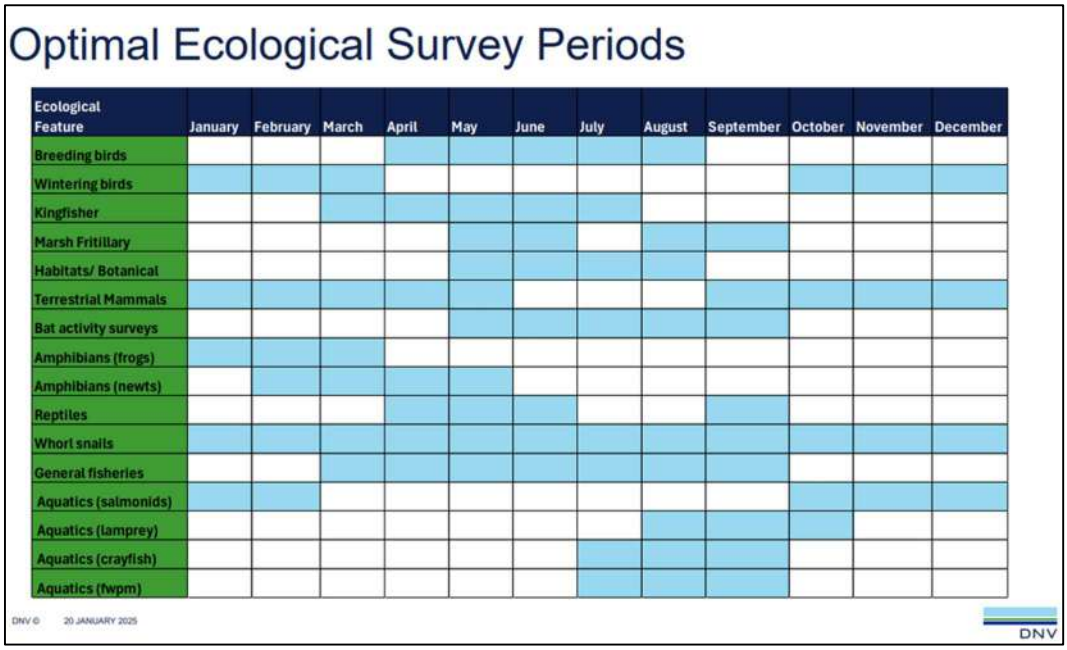


Fig. 74: Optimal survey periods (Source: DNV)

To enable a clear and evidence-based assessment, Table 7 below compares the recognised best practice survey windows (as per DNV guidance) with the actual survey dates undertaken by the applicant, as reported within the EIAR. The table identifies, on a receptor-by-receptor basis, the extent to which survey effort aligns with, or deviates from, accepted ecological survey standards.

The comparison demonstrates a consistent pattern of partial coverage, suboptimal timing, and insufficient temporal replication across multiple ecological receptors.

Ecological Value	Optimal Survey Period (Best Practice)	Applicants Survey Dates	Variance / Deficiency
Breeding birds	March – August	02/05/2025, 23/05/2025, 26/06/2025	Surveys limited to 3 visits; no early season (March–April) or late season (July–August) coverage; insufficient to establish full breeding activity
Wintering birds	November – February	19/12/2024, 30/12/2024, 22/01/2025, 27/02/2025	Generally aligned, however limited number of visits; may not capture variability across full winter period
Bats (activity surveys)	May – September	Static detectors: 04/06/2025 – 17/06/2025	Extremely limited temporal coverage (approx. 2 weeks); does not cover full activity season or seasonal variation
Habitats / Botanical	May – August	07/02/2025 and 06/06/2025	February survey invalid for botanical assessment; single June survey insufficient to capture seasonal diversity
Terrestrial mammals	Optimal spring–autumn	07/02/2025	Single winter survey; reduced detectability; insufficient for robust assessment
Amphibians (frogs/newts)	February – May	01/07/2025	Survey undertaken outside optimal breeding period; high risk of false absence
Reptiles	April – September	Not undertaken / not specified	Not undertaken / not specified
Invasive Species	Spring – early autumn	06/06/2025	Limited to single survey; may not detect seasonal emergence patterns
Trees / Hedgerows	Year-round (optimal growing season for condition assessment)	Year-round (optimal growing season for condition assessment)	Acceptable timing, but limited ecological context provided

Table 7: Material Contravention of Policies and Objectives of the Galway County Development Plan 2022 – 2028

When considered against the benchmark illustrated in Fig. 74, the EIAR does not demonstrate that surveys have been undertaken comprehensively across critical ecological periods. There is no clear justification provided for deviations from best practice, nor any acknowledgement of the limitations arising from incomplete seasonal coverage.

In respect of ornithology, the absence of early and late season breeding surveys raises particular concern. Breeding bird activity extends from March to August and requires repeated survey effort to accurately identify territories and nesting behaviour. The limited survey window presented in the EIAR is insufficient to support robust conclusions regarding species presence or absence.

In respect of bats, the reliance on a short-duration static detector deployment (approximately two weeks in June) represents a significant departure from best practice, which requires surveys across the full May–September activity period. This raises a clear risk that bat commuting routes and foraging patterns have not been fully characterised.

The amphibian survey represents a particularly acute deficiency. The survey was undertaken in July, outside the recognised breeding season (February–May), rendering it unreliable for determining presence or absence. Given the presence of suitable habitat, this constitutes a material gap in the assessment.

Similarly, the approach to habitat and botanical surveys is inadequate, with a February survey included despite this being outside the growing season, and only a single survey undertaken during the appropriate period. This is insufficient to capture species diversity or habitat condition.

More broadly, the EIAR fails to address the implications of these deficiencies. There is:

- no identification of data gaps;
- no assessment of uncertainty; and
- and no application of the precautionary principle.

Instead, the assessment proceeds to draw definitive conclusions regarding the absence of significant ecological effects, despite the absence of a robust evidential basis. This approach is not consistent with established ecological assessment practice.

The EIAR fails to demonstrate that ecological surveys have been undertaken in accordance with recognised best practice in terms of seasonal timing, coverage, and frequency. The deficiencies identified above introduce a high degree of uncertainty regarding baseline ecological conditions.

As a result:

- the presence of protected or notable species cannot be reliably ruled out;
- ecological value is likely to be underestimated; and
- and the assessment of potential impacts is not robust.

Accordingly, the biodiversity assessment does not provide a reliable basis for decision-making and is contrary to the requirements of proper environmental assessment and the precautionary principle.

7.6.5 Ecological connectivity and wider landscape effects

The EIAR adopts a predominantly site-based approach to ecological assessment, focusing on habitats within the redline boundary while failing to adequately consider the role of the site within the wider ecological network. This represents a fundamental limitation, as the receiving environment is characterised by a connected agricultural landscape in which hedgerows, treelines, scrub and grassland collectively function as an integrated ecological system. The assessment does not meaningfully engage with this landscape-scale context, nor does it evaluate how the proposed development may disrupt existing patterns of connectivity.

The baseline information provided in the EIAR clearly identifies the presence of linear features of ecological value, including hedgerows (WL1), treelines (WL2) and stone walls (BL1), both within the site and along its boundaries. These features are widely recognised as critical ecological corridors in agricultural landscapes, facilitating the movement of species such as bats, birds and small mammals between foraging and roosting habitats. The EIAR also acknowledges bat activity along these features and identifies their role in commuting behaviour. However, there is no corresponding assessment of how the removal, fragmentation or disturbance of these features would affect connectivity at a landscape scale.

The proposed development introduces a substantial area of built infrastructure into what is currently a permeable agricultural landscape. The physical footprint of the development, together with associated fencing, lighting and operational activity, has the potential to create both physical and behavioural barriers to species movement. These barrier effects are not limited to the immediate footprint of the development but may extend

into adjacent lands through disturbance and avoidance behaviour. The EIAR does not assess these effects, nor does it define any zone of influence within which connectivity may be affected.

In addition, the assessment does not consider the interaction between the main site and the grid connection route. The latter traverses a series of linear habitats and semi-natural features, including hedgerows, scrub and grassy verges, which contribute to ecological connectivity across the wider area. While the EIAR acknowledges the presence of these features, it does not assess how multiple interventions along the route—such as HDD crossings, vegetation clearance and construction activities—may cumulatively affect habitat continuity. The segmentation of the assessment between different project components therefore results in an underestimation of overall connectivity impacts.

The absence of any form of connectivity analysis is a notable omission. There is no mapping of ecological corridors, no identification of key linkage areas, and no assessment of pinch points or areas of vulnerability within the landscape. Similarly, there is no use of established methodologies such as least-cost path analysis, habitat network modelling, or GIS-based connectivity mapping. In the absence of such analysis, the EIAR cannot demonstrate that the integrity of ecological networks will be maintained.

The potential for barrier effects is particularly significant in the context of species identified or inferred to be present within the site. Bats, for example, are known to rely on continuous linear features for navigation and commuting, and are highly sensitive to fragmentation and lighting. Birds and terrestrial mammals may also avoid areas of increased disturbance or altered habitat structure, leading to effective habitat loss beyond the physical footprint of the development. These behavioural responses are not considered in the assessment.

Furthermore, the EIAR does not consider cumulative landscape effects. The site is located within a wider area that includes existing infrastructure such as motorways and energy-related developments. The introduction of additional infrastructure has the potential to incrementally erode ecological connectivity, particularly where multiple barriers interact. There is no assessment of how the proposed development contributes to this cumulative pattern, nor is there any consideration of the resilience of the ecological network as a whole.

The approach taken in the EIAR therefore fails to recognise that ecological value is not confined to discrete habitat parcels, but is also derived from the connections between them. By focusing narrowly on habitat classification within the site boundary, the assessment overlooks the functional relationships that underpin biodiversity in the wider landscape.

In the absence of a robust, landscape-scale assessment of ecological connectivity, the conclusion that impacts will be minor or not significant is not justified. The EIAR does not provide sufficient evidence to demonstrate that habitat networks will remain intact or that barrier effects will be avoided. A more comprehensive assessment, incorporating connectivity analysis and consideration of cumulative effects, would be required to properly evaluate the implications of the proposed development for ecological networks and landscape function.

7.6.6 Limitations and uncertainty of proposed mitigation measures

The EIAR places significant reliance on mitigation measures, particularly in the form of habitat creation, planting and general landscaping proposals, as a means of offsetting the ecological impacts identified. However, this approach is characterised by a high degree of uncertainty and does not provide a robust or evidence-based basis upon which to conclude that impacts on biodiversity will be adequately avoided or reduced. The mitigation strategy is largely aspirational in nature and does not sufficiently account for the temporal, ecological and management constraints inherent in habitat establishment.

A central weakness in the EIAR is the assumption that newly created or enhanced habitats can effectively replace existing ecological functions within a relatively short timeframe. This is not supported by ecological evidence. Habitats such as hedgerows, scrub and treelines develop their ecological value over extended periods, often decades, through the gradual accumulation of structural complexity and species diversity. Newly planted features cannot replicate these characteristics in the short to medium term, particularly in relation to their function as ecological corridors or their capacity to support fauna. The EIAR does not adequately address this temporal lag. There is no assessment of how ecological function will be maintained in the intervening period between the loss of existing habitats and the maturation of replacement planting. This creates a clear risk of a functional gap, during which ecological connectivity is reduced and species reliant on these features may be displaced or adversely affected. The absence of any phased or transitional mitigation strategy further compounds this issue.

In addition, the success of habitat creation and planting measures is inherently uncertain and dependent on a range of factors, including soil conditions, hydrology, species selection, climate variability and ongoing management. The EIAR does not provide sufficient detail on how these factors have been considered or how successful establishment will be ensured. There is no clear specification of planting regimes, no performance criteria against which success can be measured, and no contingency measures in the event that mitigation fails. The lack of a detailed, enforceable management plan is a further deficiency. Long-term ecological success is dependent not only on initial planting but on sustained management over time, including maintenance, monitoring and adaptive intervention where required. The EIAR does not set out any binding commitments in this

regard, nor does it identify responsibility for implementation or mechanisms for oversight. In the absence of such provisions, there is no certainty that mitigation measures will be delivered or maintained to the standard required. The reliance on mitigation is particularly problematic given the deficiencies identified elsewhere in the EIAR in relation to baseline data and impact assessment. Where the nature and extent of impacts are not fully understood, it is not possible to design effective mitigation measures. In this case, the lack of detailed assessment of ecological connectivity, species usage and disturbance effects means that mitigation proposals are not clearly aligned with identified impact pathways.

Furthermore, the EIAR does not adequately consider the cumulative effectiveness of mitigation measures. While individual measures may be presented as addressing specific impacts, there is no integrated assessment of whether, taken together, they are sufficient to maintain ecological function at a site or landscape scale. The potential for residual impacts, particularly in the short to medium term, is not addressed.

The overall approach adopted in the EIAR is therefore one of mitigation-led justification, whereby uncertain future measures are relied upon to offset clearly identifiable impacts in the present. This is not consistent with the principles of best practice in environmental assessment, which require that impacts be avoided or minimised at source in the first instance, with mitigation measures serving as a secondary and demonstrably effective response.

In these circumstances, the conclusions of the EIAR in relation to the effectiveness of mitigation are not sufficiently robust. The reliance on habitat creation and planting, without adequate consideration of time lag, uncertainty of success, and long-term management requirements, introduces a level of risk that has not been properly assessed. A precautionary approach would require that these uncertainties be explicitly acknowledged and that mitigation measures be supported by detailed design, implementation and monitoring commitments. In the absence of such provisions, it cannot be concluded that the proposed development will not give rise to adverse effects on biodiversity and ecological networks.

7.6.7 Cumulative biodiversity effects

The EIAR does not provide a robust or comprehensive assessment of cumulative effects on biodiversity, notwithstanding the fact that the proposed development is located within an already influenced landscape characterised by existing infrastructure, including major road networks and established energy and utility developments. The absence of a meaningful cumulative assessment represents a significant deficiency, as it fails to consider how the proposed development may interact with existing pressures to give rise to incremental and potentially significant ecological effects.

The receiving environment is not an undisturbed or isolated ecological system. It is a working agricultural landscape intersected by infrastructure such as the M6 and M17 motorways, associated junctions, and other linear developments. These features already exert pressure on ecological connectivity through habitat fragmentation, disturbance, and barrier effects. In such a context, the introduction of an additional large-scale development must be assessed not only in isolation but in combination with these existing influences.

The EIAR does not undertake this analysis in any meaningful way. There is no identification or mapping of existing ecological pressures, no assessment of how the proposed development may contribute to fragmentation or disturbance patterns, and no evaluation of the capacity of the receiving environment to absorb additional impacts. Instead, the assessment focuses narrowly on site-specific effects, without situating these within the broader ecological context.

A key concern in this regard is the potential for incremental degradation of ecological value. While individual impacts—such as the removal of a hedgerow, disturbance from lighting, or localised habitat loss—may be characterised as minor in isolation, their cumulative effect over time and in combination with other developments may be significant. The gradual erosion of habitat networks, reduction in connectivity, and increase in disturbance can collectively undermine the ecological integrity of the landscape. This process of incremental change is not captured in the EIAR. The issue of cumulative disturbance is particularly relevant in relation to species such as bats and birds, which are sensitive to changes in landscape structure and environmental conditions. Existing infrastructure already contributes to background levels of noise, light and human activity. The addition of further sources of disturbance may exceed thresholds of tolerance for certain species, leading to displacement or changes in behaviour. The EIAR does not assess these combined effects, nor does it consider whether the landscape has already reached or is approaching a point of ecological saturation.

Similarly, the interaction between the proposed development and the grid connection route is not considered cumulatively. These elements are assessed separately, despite forming part of a single project. As a result, the combined effects of habitat disturbance, vegetation clearance, and potential fragmentation along the route are not evaluated in conjunction with impacts at the main site. This segmented approach leads to an underestimation of overall effects.

There is also no consideration of future or reasonably foreseeable developments within the wider area. In the absence of such an assessment, it is not possible to determine how the proposed development may contribute

to longer-term trends of ecological change or degradation. This is particularly important in areas experiencing ongoing infrastructure development, where cumulative impacts may arise from multiple sources over time.
The EIAR does not adopt any recognised methodology for cumulative impact assessment. There is no use of scenario analysis, no identification of pathways of cumulative effect, and no attempt to quantify or qualitatively assess combined impacts. The conclusions presented are therefore not supported by a transparent or evidence-based assessment process.

In effect, the EIAR treats the proposed development as if it exists in isolation, which is not reflective of the actual environmental context. This approach is inconsistent with the requirements of proper environmental assessment, which require that cumulative effects be identified, described and assessed in a comprehensive manner.

In the absence of a robust cumulative assessment, it cannot be concluded that the proposed development will not contribute to the incremental degradation of biodiversity or ecological networks within the wider landscape. The lack of analysis in this regard introduces a significant degree of uncertainty and undermines the reliability of the EIAR's conclusions. A precautionary approach would require that cumulative effects be fully assessed, taking into account existing infrastructure, ongoing pressures and potential future developments.

7.7 Ground 7: Genuine risk of major accidents

The EIAR materially understates and inadequately assesses the risk of major accidents associated with the proposed development, notwithstanding its classification as a **lower-tier COMAH establishment** involving high-pressure natural gas infrastructure and substantial on-site fuel storage. While a range of serious accident scenarios are identified, the assessment lacks the depth, transparency and quantitative analysis required for a development of this nature.

7.7.1 Absence of quantified risk modelling and consequence analysis

The EIAR acknowledges that the proposed development gives rise to a range of credible and potentially severe major accident scenarios associated with the storage, handling and transmission of hazardous substances, most notably high-pressure natural gas and LPG. These include **vapour cloud explosions (VCE), jet fires, flash fires, fireballs and boiling liquid expanding vapour explosions (BLEVE)** arising from a variety of failure modes such as instantaneous rupture, sustained leaks, and pipeline failure. As set out in Table 15-5 of the EIAR, these scenarios apply across multiple elements of the development, including the turbine enclosure, gas pipeline, LPG storage tank, LPG road tanker unloading operations, and diesel storage systems

Table 15-5 - Major Accident Hazards at Proposed Project

Installation	Loss of Containment Scenario	Consequence/Event	Reference
Indoor equipment (release of natural gas in turbine enclosure)	Instantaneous failure	VCE (1)	Table 64, HSA TLUP Guidance Document, HSA, 2023
	Continuous leak over 10 minutes	VCE	
	10 mm pipe leak over 30 minutes	VCE	
Natural Gas Pipeline	Rupture of Pipelines	Fireball/Jet fire	Table 40/41 and Table 42, HSA TLUP Guidance Document, HSA, 2023
		VCE	
		Flash fire	
	Pipeline Leak (10% of the pipeline diameter)	Fireball/Jet fire	
		VCE	
		Flash fire	
LPG Tank	Instantaneous release	Fireball	Table 23, HSA TLUP Guidance Document, HSA, 2023
		VCE	
		Flash fire	
	Continuous leak over 10 minutes	Jet fire	
		VCE	
		Flash fire	
	10 mm pipe leak over 30 minutes	Jet fire	
		VCE	
		Flash fire	
LPG Road Tanker	Instantaneous failure	Fireball	Table 24, HSA TLUP Guidance Document, HSA, 2023
		VCE	
		Flash fire	
	Loss of entire contents through largest connection	Jet fire	
		VCE	
		Flash fire	
		Jet fire	Table 25,
	Rupture of unloading house	VCE	HSA TLUP Guidance Document, HSA, 2023
		Flash fire	
	Leak of unloading house 10% of diameter	Jet fire	
		VCE	
		Flash Fire	
	BLEVE (hot)	BLEVE (hot) (2)	
Diesel	Instantaneous failure	Pool fire	

Note:

1. *VCE Vapour Cloud Explosion*
2. *BLEVE Boiling Liquid Expanding Vapour Explosion*

Fig. 75: Major Accident Hazard Scenarios and Consequences (Source: EIAR Chapter 15, Table 15-5)

Despite this, the assessment remains entirely qualitative. The EIAR does not undertake any quantified consequence modelling of these events and does not attempt to translate the identified hazards into measurable or spatially defined impacts. There is no analysis of thermal radiation distances, no modelling of explosion overpressure, and no assessment of gas dispersion under different atmospheric conditions. The absence of defined impact zones or risk contours is particularly notable given that the assessment explicitly references HSA Technical Land Use Planning guidance, which is fundamentally based on such quantitative outputs.

Instead, the EIAR moves directly from identifying serious accident scenarios to concluding that off-site risks are not significant. This conclusion is not supported by any presented evidence. While it is asserted that risk contours do not extend to off-site receptors, no contour mapping, modelling assumptions or calculation outputs are provided to substantiate this claim. In effect, the most critical step in the assessment—namely, determining how far the consequences of a major accident may extend—is omitted.

This is a significant deficiency given the nature of the development. The proposal involves high-pressure gas infrastructure, substantial volumes of stored fuel, and multiple interconnected systems where failure could give

rise to escalation or combined effects. The EIAR itself acknowledges that major accidents are events capable of causing loss of life or permanent environmental damage, yet it does not quantify how such outcomes could manifest spatially within the receiving environment.

In the absence of consequence modelling, it is not possible to determine whether nearby receptors fall within potential impact zones, nor is it possible to verify compliance with COMAH land-use planning principles or to meaningfully assess the adequacy of safety distances. **The assessment therefore lacks the analytical foundation necessary to support its conclusions. As a result, the assertion that the risk to human health and the environment is not significant is not evidence-based and cannot be relied upon.**

7.7.2 Failure to assess risks to nearby receptors and infrastructure

The EIAR does not undertake a meaningful or evidence-based assessment of how major accident scenarios could affect nearby receptors, notwithstanding the rural yet inhabited nature of the receiving environment. While the assessment concludes that off-site impacts are not significant, this assertion is not supported by any mapped analysis, receptor-specific evaluation, or spatial assessment of impact pathways. There is no identification or mapping of nearby dwellings, farm holdings, or other sensitive land uses in the context of the accident scenarios identified, nor is there any attempt to relate these receptors to potential zones of impact arising from events such as vapour cloud explosions, jet fires or fireballs.

This omission is particularly notable given that the EIAR explicitly identifies high-consequence events associated with gas release and ignition, including scenarios capable of generating significant thermal radiation and blast effects. However, the assessment does not examine how such events could interact with the surrounding environment under realistic conditions. There is no consideration of gas dispersion behaviour, prevailing wind conditions, or atmospheric stability, all of which are critical in determining whether flammable gas clouds could migrate beyond the site boundary prior to ignition. Similarly, there is no assessment of the potential for explosion overpressure or radiant heat to affect adjacent lands or infrastructure. The absence of any analysis of nearby infrastructure is also a significant gap. Strategic transport corridors in the wider area, including the motorway network, are not considered in the context of major accident scenarios, despite the potential for such events to have wider safety and operational implications. In the absence of a receptor-based assessment, it is not possible to determine whether surrounding land uses are appropriately separated from the proposed development or whether unacceptable risks may arise.

Overall, the EIAR fails to demonstrate that the consequences of identified major accident scenarios would be contained within the site. **Given the nature of the hazards involved and the absence of any spatial or receptor-focused analysis, the conclusion that off-site risks are not significant is not substantiated and cannot be relied upon.**

7.7.2.1 Major accident and fire hazards

The proposed development constitutes a COMAH-classified installation; however, the EIAR does not demonstrate compliance with the land-use planning requirements of the Seveso III Directive, particularly in relation to the proximity of the development to residential receptors and the adjacent M17/M18 motorway.
The applicant's own assessment indicates that major accident consequence zones extend beyond the site boundary, with the M18 motorway located within the potential impact zone. This raises significant concerns regarding risks to public safety, including passing traffic and nearby receptors. Notwithstanding this, the EIAR relies on a societal risk modelling approach which accepts a statistical expectation of fatalities, an approach which is not consistent with the precautionary principle or the proper planning and sustainable development of the area.

Furthermore, the EIAR does not demonstrate that the facility will be staffed on a continuous 24/7 basis, indicating that early-stage incident response would rely primarily on automated systems and remote monitoring. The fire safety strategy is similarly dependent on automated infrastructure, including pumps, detection systems and deluge systems, yet there is no clear evidence of full automation, redundancy, or fail-safe backup systems in the event of system failure.

There is also no demonstration that the site can provide sufficient on-site firefighting capacity for a duration of 30–60 minutes, which is critical in the period prior to the arrival of external emergency services. This is of particular concern given the rural location of the site and the likelihood of extended emergency response times, with no evidence of site-specific planning, resourcing, or training for local fire services.

In addition, the EIAR does not provide sufficient detail regarding the maintenance, testing, or operational reliability of critical safety systems. Nor does it demonstrate that firewater management and containment systems would perform effectively under worst-case scenarios, giving rise to a credible risk of system failure and associated environmental contamination.

Accordingly, the Board cannot be satisfied that the risks to human health, public safety, and the environment arising from major accidents have been adequately assessed or mitigated.

7.7.3 Over-reliance on qualitative risk scoring

The EIAR relies heavily on a qualitative risk matrix to assess major accident scenarios, assigning consistently low likelihood ratings which in turn generate low overall risk scores. However, these ratings are not supported by any quantitative analysis, empirical failure rate data, or probabilistic risk assessment. The methodology presented is therefore largely subjective, with conclusions derived from assumed compliance with standards rather than demonstrable evidence of risk reduction.

In particular, scenarios involving significant hazards—such as vapour cloud explosions, jet fires and gas releases—are attributed low likelihood ratings without any reference to incident frequency data, pipeline failure statistics, or industry benchmarks. The approach effectively presumes that adherence to design codes, operational procedures and regulatory frameworks is sufficient to render such events highly unlikely. While such measures are clearly important, they do not eliminate risk, particularly in complex industrial systems involving high-pressure gas and multiple potential failure points. This approach is inconsistent with established best practice for COMAH-type developments, where the emphasis is on rigorous, evidence-based risk assessment, including quantitative or semi-quantitative analysis of both likelihood and consequence. High-consequence events, even where infrequent, require detailed examination precisely because of their potential severity. By contrast, the EIAR's methodology tends to downplay these risks through unsupported likelihood assumptions, thereby diluting the significance of the identified hazards.

As a result, **the risk evaluation lacks transparency and robustness and does not provide a reliable basis for concluding that major accident risks are acceptable. The reliance on qualitative scoring in the absence of supporting data undermines the credibility of the assessment and limits its value in informing proper planning and decision-making.**

7.7.4 Inadequate consideration of emergency response capacity

While the EIAR makes reference to the preparation of emergency response plans and the provision of on-site firefighting and safety infrastructure, it does not undertake any substantive assessment of the capacity of local emergency services to respond to a major accident at the proposed development. This represents a critical omission, particularly in the context of a lower-tier COMAH establishment involving high-pressure gas systems and potentially severe accident scenarios.

The assessment contains no analysis of emergency response times from the nearest fire stations, ambulance services, or other relevant responders. There is no consideration of the likely duration required for trained personnel and specialist equipment to reach the site, nor any evaluation of how such response times may be affected by the rural road network, traffic conditions, or the need to mobilise additional regional or national resources in the event of a large-scale incident. In the case of fast-developing hazards such as vapour cloud explosions or jet fires, response time is a critical determinant of consequence, yet this factor is not addressed.
Similarly, the EIAR does not examine site accessibility in the context of an emergency. There is no assessment of whether the local road network can accommodate emergency vehicles, including multiple fire appliances, or whether site access points are adequate for rapid and safe ingress and egress under emergency conditions. The potential for congestion, restricted access, or conflict with other site activities—particularly during construction or fuel delivery operations—is not considered.

The absence of any evaluation of evacuation requirements is also notable. The EIAR does not identify the extent of any potential evacuation zone associated with major accident scenarios, nor does it assess how nearby residents, agricultural operators, or road users would be alerted and safely evacuated in the event of an incident. There is no consideration of vulnerable receptors, including those with reduced mobility, nor any analysis of the capacity of the surrounding road network to facilitate evacuation without causing additional risk.

Furthermore, the EIAR fails to consider the resource implications for local emergency services in responding to a major industrial accident of this nature. Incidents involving high-pressure gas, LPG storage, or large-scale fire events typically require specialist equipment, hazardous materials expertise, and coordinated multi-agency response. There is no assessment of whether such capabilities are available locally, or whether reliance would need to be placed on more distant or national-level resources, with associated delays and logistical challenges. The assessment also does not address the potential for prolonged or escalating incidents, including scenarios involving secondary fires, cascading system failures, or re-ignition risks. In such cases, emergency response may extend over many hours or days, placing sustained demands on emergency services. No consideration is given to how such scenarios would be managed, nor to the potential implications for public safety, environmental protection, or continuity of surrounding land uses.

In addition, there is no evidence of consultation with, or input from, relevant emergency service providers in the preparation of the EIAR. Best practice in the assessment of major accident hazards requires engagement with fire authorities, ambulance services, and other relevant agencies to ensure that response assumptions are realistic and that emergency planning is appropriately aligned with local capacity. The absence of any such evidence further undermines the credibility of the assessment.

Overall, the EIAR fails to demonstrate that an effective and timely emergency response could be mounted in the event of a major accident at the proposed development. Given the nature and scale of the hazards identified, this omission represents a significant deficiency in the assessment of risks to human health and public safety. **Without a clear understanding of emergency response capability, it is not possible to conclude that the consequences of a major accident would be adequately managed or that risks to surrounding receptors would be acceptably controlled.**

7.7.5 Lack of assessment of escalation and combined risk scenarios

The EIAR considers identified major accident scenarios largely in isolation and does not undertake any meaningful assessment of the potential for escalation or cascading ("domino") effects between different elements of the proposed development. This represents a fundamental limitation in the assessment, particularly given the integrated and interdependent nature of the infrastructure proposed, including high-pressure gas pipelines, turbine systems, LPG storage, diesel tanks, and associated transfer and unloading operations. No analysis is provided of how an initiating event in one part of the system could propagate to adjacent plant or storage areas, resulting in a more severe, multi-system incident. For example, there is no examination of scenarios whereby a gas release and subsequent explosion or jet fire could compromise nearby fuel storage tanks, or where a fire involving liquid fuels could escalate to affect gas infrastructure. Similarly, the potential for failure during tanker unloading operations to trigger wider site impacts is not considered. These types of escalation pathways are well-recognised in major hazard industries and are a central focus of COMAH risk assessment.

The EIAR does not identify or assess credible sequences of events involving multiple failures, nor does it consider the interaction between different hazardous inventories on site. There is no evaluation of threshold distances at which heat radiation, overpressure, or projectiles from an աnաչն event could impact adjacent equipment, nor any assessment of the vulnerability of interconnected systems to such effects. The absence of this analysis is particularly concerning given the proximity of different hazardous elements within the site layout and the potential for rapid escalation once an initial loss of containment occurs.

In addition, the assessment does not consider the potential for concurrent or compounded events, such as multiple releases occurring simultaneously or sequentially under adverse conditions. There is no examination of how emergency response capacity—already unassessed, as outlined above—could be affected in such scenarios, nor how the complexity of a multi-faceted incident could influence the scale and duration of consequences.

This segmented approach is inconsistent with established COMAH principles and guidance, which explicitly require the identification and assessment of domino effects and combined risk pathways within and, where relevant, between sites. The purpose of such analysis is to ensure that risk is not artificially compartmentalised and that the true scale of potential major accident hazards is properly understood.

By failing to consider escalation and interaction between hazard sources, the EIAR presents an incomplete and potentially misleading picture of risk. The omission of combined scenario analysis means that the most severe, yet credible, accident pathways have not been evaluated. As a result, the overall level of risk associated with the proposed development is likely to be significantly underestimated, and the conclusions of the EIAR in respect of major accident risk cannot be relied upon.

Furthermore, the EIAR does not assess the interaction between the proposed development and routine gas pipeline inspection, maintenance access, or emergency response requirements. There is no consideration of how ongoing inspection regimes, including aerial surveillance, or access for maintenance and emergency intervention, may interact with site operations or introduce additional risk pathways. The absence of this assessment represents a further gap in the evaluation of combined and operational risk scenarios, particularly in the context of high-pressure gas infrastructure.

7.7.6 Conclusion

The EIAR fails to provide a robust, transparent, or evidence-based assessment of major accident risk associated with the proposed development. The assessment is characterised by a series of fundamental methodological deficiencies, including the absence of quantitative consequence modelling, the lack of any meaningful receptor-based or spatial analysis, the reliance on unsupported qualitative risk scoring, and the failure to consider both emergency response capacity and escalation or domino effects between hazardous elements of the site.

Individually, each of these shortcomings represents a significant gap in the evaluation of risk. Taken together, they point to a systematic underassessment of the potential consequences of major accident scenarios. The EIAR identifies a range of high-consequence events—including vapour cloud explosions, jet fires, and large-scale fuel-related incidents—but does not undertake the level of detailed analysis required to understand how these events could manifest in practice, how far their effects may extend, or who and what may be affected.

In the context of a COMAH-classified development involving high-pressure gas infrastructure and the storage and handling of hazardous substances, such omissions are particularly serious. Established best practice and

regulatory guidance require a precautionary and evidence-led approach to the assessment of low-probability, high-consequence events. This includes the use of quantitative or semi-quantitative methods, clear identification of impact zones, and a thorough understanding of how risks interact with the receiving environment. The EIAR does not meet these standards.

As a result, it has not been demonstrated that the risks arising from major accident hazards would be acceptably controlled, nor that the consequences of such events would be contained within the site or adequately mitigated. **There remains a lack of clarity as to the potential impacts on nearby receptors, critical infrastructure, and the wider environment in the event of a serious incident.**

In these circumstances, it cannot be concluded, on the basis of the information provided, that the proposed development would not give rise to unacceptable risks to human health, property, and the environment. The proposal therefore fails to satisfy the requirements of proper planning and sustainable development, and planning permission should be refused.

7.8 Ground 8: The potential for emissions and noise to travel further during certain meteorological conditions, while pollutants may accumulate locally during calm conditions

7.8.1 Limitations of the EIAR meteorological assessment

The EIAR relies on the AERMOD dispersion model, supported by the AERMET meteorological pre-processor, to assess the dispersion of emissions from the proposed development. While this modelling framework is widely accepted and technically robust in principle, the reliability of its outputs is fundamentally dependent on the quality, representativeness, and application of the meteorological data used. In this regard, the EIAR demonstrates a number of important limitations. AERMET requires detailed meteorological inputs, including hourly observations of wind speed, wind direction, temperature, and cloud cover, together with derived boundary layer parameters such as friction velocity, Monin-Obukhov length, and mixing height. These parameters govern plume behaviour and dispersion characteristics under varying atmospheric conditions. However, the EIAR does not provide sufficient justification that the meteorological dataset used is fully representative of the specific site and its receiving environment.

In particular, the assessment relies on meteorological data derived from a generalised study area centred on Athenry, with surface characteristics averaged over defined radii (e.g. 1 km and 10 km grids). While this approach may be consistent with standard modelling practice, it does not adequately account for **localised microclimatic conditions**, site-specific topography, or land-use variations that may influence wind patterns, atmospheric stability, and pollutant dispersion at the actual development location.

Furthermore, there is limited transparency regarding the temporal scope of the meteorological dataset used. The EIAR does not clearly demonstrate that a sufficiently long-term dataset (e.g. multiple years) has been applied to capture inter-annual variability in weather patterns. The use of a limited or unrepresentative dataset can bias model outputs toward average conditions and fail to reflect less frequent, but environmentally critical, scenarios such as prolonged calm periods or persistent stable atmospheric conditions.

While AERMOD is capable of simulating both stable (inversion) and unstable (convective) atmospheric conditions, including low wind speed scenarios, the EIAR does not demonstrate how these capabilities have been utilised in practice. There is no clear identification of the range of stability classes modelled, nor any presentation of the frequency or distribution of meteorological conditions that are most relevant to worst-case dispersion outcomes. In addition, the selection and derivation of key surface parameters—such as surface roughness, albedo, and Bowen ratio—are based on generalised land-use classifications rather than site-specific measurements. While these are calculated using recognised methodologies, they represent broad approximations and may not fully reflect the actual surface characteristics influencing atmospheric behaviour at the site.

Overall, the EIAR places reliance on a technically advanced modelling system but does not provide sufficient evidence that the meteorological inputs and assumptions are appropriately site-specific, representative, or robust. The absence of detailed justification, sensitivity analysis, or evaluation of data limitations undermines confidence in the dispersion modelling results and, by extension, in the conclusions drawn regarding air quality and noise impacts.

7.8.2 Failure to assess adverse dispersion conditions (worst-case scenarios)

Notwithstanding the use of the AERMOD modelling framework, the EIAR does not demonstrate that it has adequately assessed dispersion under adverse or worst-case meteorological conditions. Instead, the assessment appears to rely on aggregated or "typical" meteorological datasets, without isolating or interrogating those conditions under which environmental impacts are most likely to be significant. While AERMOD is capable of modelling a full range of atmospheric conditions—including stable (inversion) conditions and low wind speeds—the EIAR does not present any explicit analysis of these scenarios or their implications for pollutant dispersion. As outlined in Appendix 7.1, the model includes specific algorithms for stable boundary layers and

low wind speed conditions, where vertical mixing is suppressed and dispersion is significantly reduced. However, there is no evidence that the assessment has focused on these conditions as part of a worst-case evaluation.

In particular, the EIAR does not assess:

- **Temperature inversion events**, which typically occur during clear, calm nights and can trap pollutants close to ground level, leading to elevated concentrations at nearby receptors;
- **Low wind speed conditions**, where limited horizontal dispersion can result in the local accumulation of emissions; and
- **Stable atmospheric conditions**, where reduced turbulence inhibits dilution and prolongs the residence time of pollutants in the local environment.

These conditions are widely recognised as those most likely to give rise to **peak ground-level concentrations**, yet they are not specifically analysed or presented in the assessment. Instead, the EIAR relies on model outputs derived from the full meteorological dataset, which effectively averages dispersion across a range of conditions. This approach risks obscuring short-term or episodic exceedances that may arise under unfavourable meteorological scenarios.

The absence of a clearly defined worst-case assessment has direct implications for the reliability of the predicted impacts. Without isolating the conditions under which dispersion is poorest, it is not possible to determine whether:

- Maximum ground-level pollutant concentrations have been adequately captured;
- Short-term exposure limits (where applicable) could be exceeded;
- Odour or combustion-related emissions could persist or accumulate in the vicinity of sensitive receptors.

This is particularly relevant in a rural setting characterised by low background pollutant levels, where even intermittent periods of poor dispersion may give rise to noticeable and potentially significant effects.

Furthermore, there is no sensitivity analysis presented to demonstrate how model outputs vary under different meteorological scenarios. The EIAR does not explore how changes in stability class, wind speed, or mixing height could influence predicted concentrations, nor does it identify the meteorological conditions associated with peak modelled impacts.

Overall, the EIAR adopts an approach that is centred on **average conditions**, rather than the realistic worst-case scenarios that are of greatest importance in environmental impact assessment. In doing so, it fails to provide a precautionary or sufficiently robust evaluation of dispersion behaviour. This omission undermines confidence in the assessment and raises the likelihood that the potential for elevated ground-level concentrations and persistent emissions under adverse conditions has been materially underestimated.

7.8.3 Potential for long-range transport of noise and air pollutants

The EIAR does not adequately assess the potential for emissions and noise generated by the proposed development to travel beyond the immediate vicinity of the site under certain meteorological conditions. In particular, there is a failure to consider how **downwind transport mechanisms**, atmospheric stratification, and rural baseline conditions may facilitate the propagation of pollutants and noise over extended distances.

Dispersion modelling inherently reflects the influence of prevailing wind direction and speed. Under consistent wind conditions, emissions from point sources such as stacks can be transported **significant distances downwind**, with plume grounding occurring well beyond the site boundary depending on atmospheric stability and terrain. While AERMOD is capable of modelling these effects, the EIAR does not present any clear analysis of **downwind impact zones under specific wind regimes**, nor does it identify the receptors most likely to be affected under prevailing or dominant wind directions.

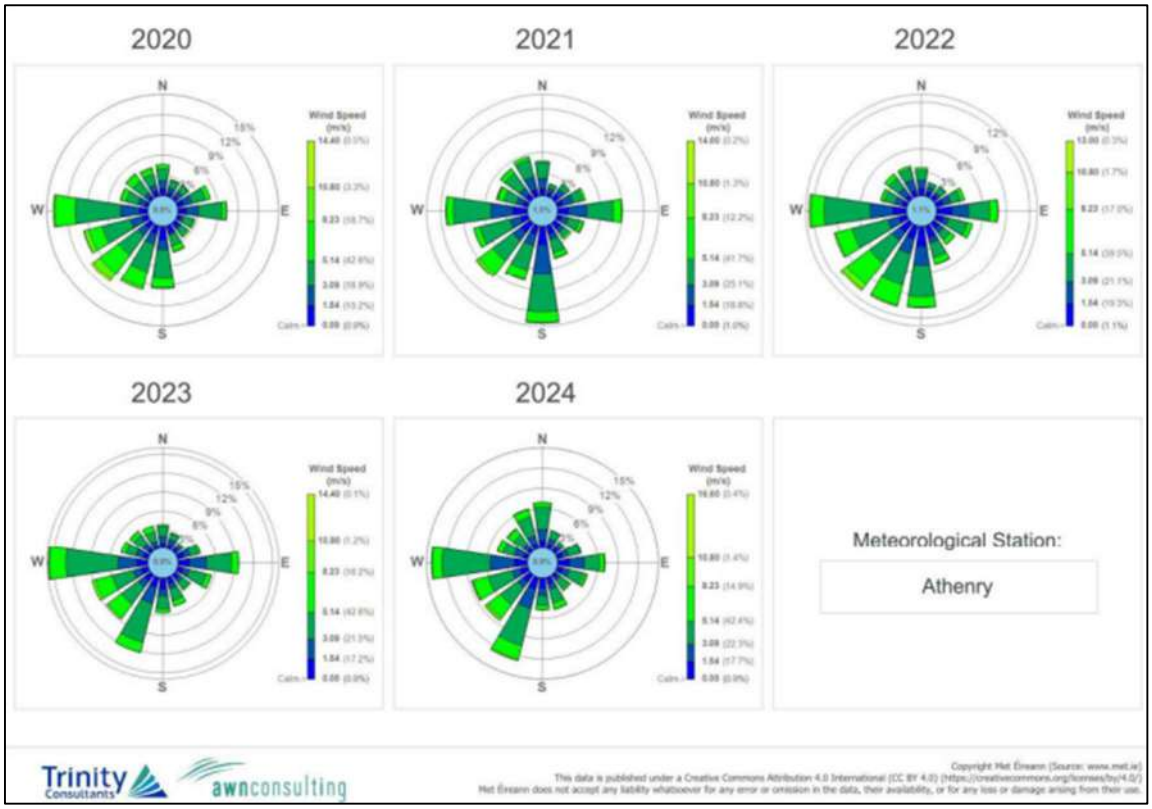


Fig. 76: Wind rose diagrams (2020–2024) from Athenry meteorological station showing prevailing wind direction and speed distribution (Source: EIAR, Chapter 7, AERMET data)

As illustrated in Fig. 76, the meteorological regime is characterised by consistent prevailing wind patterns across multiple years, with a clear dominance of westerly and south-westerly airflows. This demonstrates that emissions arising from the proposed development will not disperse uniformly, but will instead be transported along predictable downwind pathways. Notwithstanding this, the EIAR does not identify or assess the specific receptors located within these prevailing downwind corridors, nor does it evaluate the potential for repeated or preferential exposure arising under these conditions. In effect, the assessment treats dispersion as spatially uniform, whereas the meteorological evidence demonstrates that impacts are likely to be directional, recurrent, and concentrated along specific downwind axes.

This omission is particularly relevant given that the AERMOD framework explicitly accounts for plume behaviour as a function of meteorology, including wind direction and boundary layer characteristics . However, the EIAR does not translate this into a spatially explicit assessment of how emissions may affect receptors located at greater distances from the site under certain conditions.

In addition to air pollutants, the potential for **long-range noise propagation** is not adequately addressed. During night-time periods, stable atmospheric conditions and temperature gradients (including temperature inversions) can significantly enhance the transmission of sound. Under such conditions:

- Sound waves may refract toward the ground, increasing audibility at distance;
- Atmospheric attenuation is reduced, allowing noise to travel further than predicted under neutral conditions; and
- Low background noise levels in rural areas increase the perceptibility of industrial sound.

The EIAR does not assess these effects in any meaningful way. There is no evaluation of **meteorology-dependent noise propagation**, nor any indication that night-time worst-case conditions have been considered in determining likely noise impacts.

Furthermore, the assessment does not consider the potential for **cumulative or repeated exposure** at receptors located beyond the immediate modelled impact zones. Even where predicted concentrations or noise levels are individually compliant with guideline thresholds, repeated exposure under certain wind conditions may give rise to **intermittent but recurring impacts**, particularly in a rural environment where baseline conditions are sensitive. The rural setting of the proposed development is a critical factor in this regard. Low ambient noise levels and generally high air quality mean that:

- Small increases in pollutant concentrations may be more perceptible and environmentally relevant;

- Noise emissions, particularly tonal or intermittent industrial noise, may be more intrusive over longer distances; and
- The receiving environment has a lower capacity to absorb or mask such impacts.

Overall, the EIAR fails to demonstrate that emissions and noise will remain confined to the immediate vicinity of the site under all relevant meteorological conditions. The absence of a detailed assessment of downwind transport, night-time propagation, and cumulative exposure undermines the reliability of the conclusions reached and raises the likelihood that impacts beyond the predicted zones have been underestimated.

7.8.4 Localised accumulation and chronic exposure risks '

The EIAR does not adequately assess the potential for **localised accumulation of pollutants** or the implications of **repeated, chronic exposure** arising under certain meteorological and topographical conditions. While dispersion modelling focuses primarily on predicted concentrations under varying atmospheric states, insufficient attention is given to scenarios where dispersion is minimal and emissions may persist or build up in the local environment over time.

As acknowledged in the modelling framework, stable atmospheric conditions and low wind speeds significantly reduce the dispersion of pollutants by limiting vertical and horizontal mixing . Under such conditions—particularly during calm periods—emissions may remain concentrated near the source, leading to **localised build-up of pollutants at or near ground level**. Despite this, the EIAR does not explicitly assess the extent to which such accumulation may occur, nor does it evaluate the frequency or duration of these conditions within the meteorological dataset.

The potential for localised accumulation is further influenced by **site-specific terrain and landform characteristics**. In rural environments, particularly those with low-lying or partially enclosed features, there is an increased likelihood of pollutant stagnation during calm or stable conditions. The EIAR does not examine whether such features exist within the receiving environment, nor does it assess their potential to exacerbate pollutant retention or reduce dispersion efficiency.

In addition, the assessment focuses predominantly on **short-term or peak concentration metrics**, without adequately considering the effects of **repeated or cumulative exposure over time**. Even where individual modelled concentrations comply with relevant air quality standards, recurring exposure to elevated pollutant levels—particularly under unfavourable meteorological conditions—may give rise to longer-term environmental and health implications. The absence of any analysis of exposure frequency, persistence, or cumulative loading represents a significant gap in the assessment.

This issue is particularly relevant in the context of a rural receiving environment characterised by:

- **Continuous agricultural use**, where grassland and crops may be exposed to airborne pollutants and deposition;
- **Direct pathways to livestock**, including ingestion of contaminated fodder or pasture; and
- **Human receptors** residing in close proximity, who may experience repeated exposure to emissions under certain conditions.

The EIAR does not assess the potential for **pollutant deposition onto agricultural land**, nor does it consider how repeated exposure events may affect soil quality, fodder safety, or compliance with agricultural standards. Similarly, there is no evaluation of the potential implications for human health arising from chronic low-level exposure, particularly in circumstances where pollutants may intermittently accumulate due to poor dispersion.

Overall, the EIAR adopts a predominantly **snapshot-based approach** to impact assessment, focusing on modelled concentration outputs without adequately considering the dynamic and cumulative nature of pollutant behaviour in the environment. The failure to assess localised accumulation and chronic exposure pathways undermines confidence in the conclusion that air quality impacts will be negligible and suggests that the potential for sustained or repeated environmental effects has not been fully or properly evaluated.

7.9 Ground 9: Potential exposure to electromagnetic fields (EMF) associated with underground cabling, possible interference with medical devices such as pacemakers.

The EIAR fails to assess the potential for exposure to electromagnetic fields (EMFs) arising from the proposed development, in particular those associated with underground electrical cabling and associated infrastructure. This omission represents a material deficiency in the assessment of risks to human health and safety, particularly in respect of sensitive receptors, including individuals with implanted medical devices such as pacemakers and implantable cardioverter defibrillators (ICDs).

Electromagnetic fields are an inherent and unavoidable by-product of electrical transmission infrastructure. As set out in the applicant's own supporting material, EMFs are generated wherever electric current flows, including in underground cables, substations, and associated equipment. The proposed development therefore represents a **continuous and permanent source of EMFs within a rural receiving environment**, yet no assessment of these emissions is provided.

The nature of EMFs associated with electricity infrastructure is well established. These fields occur at **extremely low frequency (ELF), typically 50 Hz**, and fall within the non-ionising portion of the electromagnetic spectrum. While such fields are not capable of causing direct cellular damage (e.g. DNA damage), their interaction with electrical systems within the human body and with electronic medical devices is a recognised phenomenon. The issue is therefore not one of ionising radiation or carcinogenicity, but of **functional interference and indirect health effects**, particularly for vulnerable individuals.

The applicant's own referenced material confirms that EMF strength is **highest in close proximity to the source and decreases with distance**. However, critically, it also demonstrates that measurable magnetic fields are present directly above underground cables. For example, as shown in the EirGrid review (see Fig. 77 below), magnetic field strengths directly above underground transmission cables can reach:

- **c. 11.53 µT for 110 kV cables**
- **c. 30.74 µT for 220 kV cables**
- **c. 43.27 µT for 400 kV cables**

These values are recorded at approximately **1 metre above ground level directly above the cable route**, representing a realistic exposure scenario for individuals standing, working, or residing above or adjacent to such infrastructure.

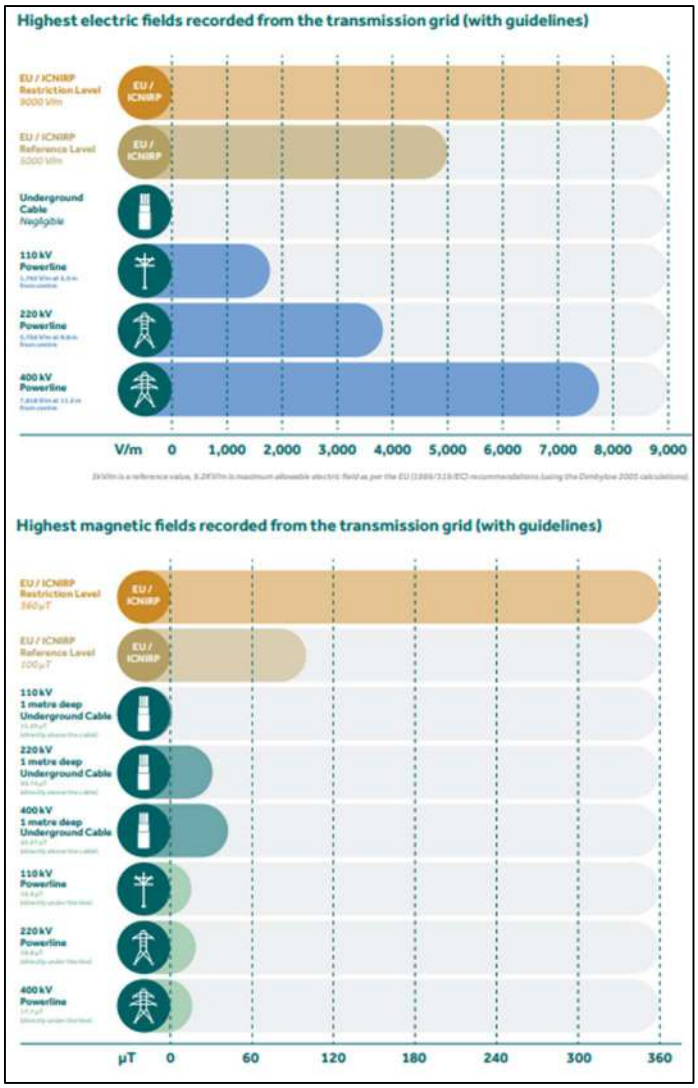


Fig. 77: Highest magnetic fields recorded from transmission grid (with guidelines) – Source: EirGrid EMF Information Brochure, p. 8–9]

While these values are stated to be below EU/ICNIRP guideline limits, this does not obviate the requirement for project-specific assessment. Guideline compliance is not a substitute for site-specific evaluation of exposure pathways, receptor sensitivity, or duration of exposure. The EIAR fails entirely to engage with these issues.

In particular, the EIAR does not assess the implications of **prolonged or repeated exposure** to EMFs arising from fixed underground infrastructure. Unlike transient sources, **underground cables operate continuously and may give rise to chronic exposure conditions, particularly in agricultural settings where individuals may spend extended periods in fields or farmyards located directly above cable routes.** The EirGrid material further illustrates that while field strength reduces with distance, measurable levels persist at increasing offsets (e.g. at 10 m and 20 m distances), indicating a **spatial footprint of exposure beyond the immediate cable alignment**. The EIAR also fails to consider the **distinct behaviour of electric and magnetic fields**. While electric fields associated with underground cables are largely contained by shielding, magnetic fields are not effectively attenuated by soil, buildings, or vegetation and therefore propagate into the surrounding environment. This distinction is critical, as it is the magnetic component of EMFs that is most relevant in the context of exposure from buried infrastructure.

Notwithstanding the general scientific consensus that low-level EMFs are not associated with established adverse health outcomes, both international and national guidance emphasise the need for **continued monitoring, assessment, and precaution**, particularly in relation to sensitive receptors. As set out in the WHO aide-mémoire, while no causal link has been established between low-level EMF exposure and health effects, ongoing research and exposure evaluation remain necessary in light of evolving technologies and exposure scenarios.

Critically, the **Irish regulatory framework explicitly recognises EMF exposure as a potential occupational and public health issue requiring assessment**. The Safety, Health and Welfare at Work (Electromagnetic Fields) Regulations 2016 require that:

- Exposure to EMFs must be **identified and assessed**, including through measurement or calculation.
- The **level, frequency, duration, and type of exposure** must be evaluated;
- Particular account must be taken of **workers or individuals at increased risk**, including those with implanted medical devices; and
- Both **direct and indirect effects**, including interference with medical devices, must be considered.

The EIAR does not demonstrate compliance with any of these requirements.

Of particular relevance is the recognised risk of **interference with active implanted medical devices**, including pacemakers and ICDs. Regulatory and medical guidance confirms that electromagnetic fields can interfere with the operation of such devices, with the risk dependent on proximity to the source and duration of exposure. The HSA guidance explicitly identifies:

> *interference with active implanted medical devices… such as cardiac pacemakers or defibrillators as a potential indirect effect of EMF exposure.*

While modern devices incorporate shielding and filtering mechanisms, this does not eliminate risk under all exposure conditions. Importantly, guidance typically advises maintaining separation distances and avoiding prolonged close exposure to EMF sources. The EIAR does not assess whether such conditions could arise in the context of the proposed development, nor does it identify or map areas where elevated exposure may occur. This omission is particularly significant given the **fixed and linear nature of underground cabling**, which may pass through or adjacent to areas of human activity, including residential properties, farmyards, and agricultural land. Individuals with implanted medical devices may therefore be unknowingly exposed to EMFs during routine activities, without any information or mitigation measures in place.

Furthermore, the EIAR fails to consider **cumulative exposure** arising from multiple EMF sources within the development, including cabling, transformers, and other electrical infrastructure. The regulatory framework requires consideration of simultaneous exposure to multiple sources and frequencies, yet no such assessment is undertaken.

The applicant's reliance on generalised statements regarding compliance with guideline limits (if any such reliance is implied) is insufficient. The EirGrid material itself makes clear that **"*reference levels*" are intended to trigger further investigation**, rather than to serve as definitive thresholds of safety. In the absence of project-specific modelling, it is not possible to determine whether exposure levels at sensitive receptors would approach or exceed these reference levels, or whether mitigation measures would be required.

In summary, the EIAR:

- Fails to quantify or model EMF emissions from underground cabling and associated infrastructure.
- Fails to identify or assess exposure pathways to nearby receptors;

- Fails to consider duration, frequency, or cumulative exposure.
- Fails to assess risks to sensitive receptors, including individuals with implanted medical devices;
- Fails to demonstrate compliance with applicable regulatory requirements; and
- Fails to apply a precautionary approach in the context of scientific uncertainty and recognised interaction mechanisms.

In the absence of such assessment**, it cannot be concluded that the proposed development would not give rise to risks to human health and safety associated with electromagnetic field exposure.** The EIAR is therefore incomplete and unreliable in this regard.

Accordingly, the proposed development is contrary to the proper planning and sustainable development of the area and should be refused.

7.10 Ground 10: Constraints on future development, land use, and property

7.10.1 Constraints arising from underground infrastructure

The proposed development includes the installation of underground electrical infrastructure extending along sections of the local road network in order to connect the facility to the wider grid. This element of the proposal gives rise to significant and long-term planning concerns in respect of land use, access, and the future development potential of adjoining lands, which are not adequately addressed in the EIAR.

As illustrated in Fig. 78**,** the grid connection is routed along narrow rural roads which serve agricultural lands, dispersed dwellings, and potential future development sites. While the use of underground cabling is often presented as having reduced visual impact compared to overhead lines, it nevertheless introduces a **permanent subsurface constraint corridor** which has material implications for the use and development of adjacent lands.

Fig. 78: Proposed Underground Cable Route (Source: EIAR)

The EIAR does not adequately assess the extent to which this underground infrastructure may result in the **sterilisation or restriction of adjoining lands**. The presence of buried high-voltage cables typically gives rise to restrictions on excavation, foundation works, drainage installation, and other ground disturbance activities within a defined proximity of the cable route. These constraints may not be immediately apparent at the time of installation but can have significant implications for landowners over the lifetime of the development. In particular, lands adjoining the local road network—many of which are currently in agricultural use or may be considered for future residential development (including family homes)—may be subject to **practical limitations on access, servicing, and construction**. The EIAR does not identify any safeguarding corridors, easements, or exclusion zones associated with the cable route, nor does it assess how these may affect the ability of landowners to bring forward future planning applications.

A key concern arises in relation to **future access arrangements and road crossings**. In rural areas, it is common for lands to be accessed directly from local roads, often requiring the installation of entranceways, services, and utilities across the roadside verge and underlying ground. The presence of underground electrical infrastructure introduces additional complexity and potential constraints in this regard. Any future requirement to:

- Construct new entrances;
- Upgrade existing access points;
- Install water, wastewater, electricity, or broadband services; or
- Facilitate agricultural crossings or drainage works

may be complicated by the presence of the cable, requiring specialised design, protective measures, or consent from the infrastructure operator.

The EIAR does not assess how such interactions would be managed in practice, nor does it consider the **potential for delay, additional cost, or refusal of access** arising from the need to protect critical infrastructure. This creates a situation of uncertainty for landowners, who may find that their ability to reasonably develop or utilise their lands is constrained by infrastructure over which they have no control.

Furthermore, the routing of the cable along local roads effectively creates a **linear corridor of constraint** across the wider area, with implications extending beyond the immediate footprint of the proposed development site. This is particularly significant in a rural context, where land parcels are often subdivided by roads and where future development potential may depend on the ability to connect across or along these corridors.

The EIAR also fails to consider the **long-term operational and maintenance requirements** associated with the underground cable. Access for inspection, repair, or replacement may necessitate periodic excavation of the road corridor, with associated disruption to access, traffic, and adjoining land uses. There is no assessment of how such activities may affect residents, farm operations, or future development over the lifetime of the infrastructure.

In addition, no clarity is provided in relation to **wayleave agreements, legal rights, or compensation mechanisms** for affected landowners. The absence of this information further contributes to uncertainty regarding the long-term implications of the development for property rights and land use.

Overall, the EIAR presents the underground cabling as a technical component of the development but fails to recognise or assess its **planning and land use implications**. The introduction of permanent underground infrastructure along the local road network has the potential to constrain access, limit development opportunities, and impose ongoing burdens on adjoining landowners. These impacts are material and long-term in nature and have not been adequately evaluated. In the absence of a clear and comprehensive assessment of these issues, it cannot be concluded that the proposed development would not give rise to adverse effects on the proper planning and sustainable development of adjoining lands.

7.10.2 Impacts on agricultural operations and rural land use

The proposed development gives rise to significant concerns in respect of the ongoing use and viability of agricultural lands within the receiving environment. While the EIAR acknowledges the presence of active farming in the area, it does not adequately assess how the introduction of underground infrastructure and associated works may disrupt established agricultural practices, both during construction and over the long term. A primary issue arises in relation to farm severance and fragmentation. The routing of underground cabling along local roads, combined with associated works and infrastructure, has the potential to interfere with the functional operation of farm holdings which are often organised across multiple parcels of land accessed via these roads. In rural contexts, it is common for farmers to rely on frequent movement of machinery, livestock, and materials between fields located on either side of local roads. The presence of buried electrical infrastructure introduces constraints on such movements, particularly where crossings, drainage works, or future alterations to access arrangements are required.

The EIAR does not assess whether protective buffer zones, depth constraints, or access restrictions associated with the cable infrastructure may limit the ability of farmers to carry out routine activities such as:

- Installation or maintenance of field drainage systems;
- Erection of fencing or farm structures;
- Use of heavy agricultural machinery; and
- Land improvement or regrading works.

These activities typically involve ground disturbance and may be restricted or subject to additional controls in the vicinity of underground cables. The absence of any clear guidance or mitigation measures in the EIAR creates uncertainty for landowners as to how normal agricultural practices may be affected.

In addition, the development may give rise to servicing constraints affecting agricultural operations. Farms rely on a range of essential services, including water supply, electricity connections, drainage infrastructure, and increasingly broadband connectivity for modern agricultural management. The presence of underground electrical infrastructure along local roads may complicate the installation, upgrading, or repair of such services, particularly where crossings of the cable route are required. The EIAR does not assess how these interactions would be managed, nor does it consider the potential for delays, additional costs, or operational constraints arising from the need to coordinate with infrastructure operators.

There is also a lack of consideration of operational interference during both construction and maintenance phases. The installation of underground cabling along rural roads typically involves trenching, excavation, and temporary traffic management, which can restrict access to lands, disrupt farm operations, and interfere with time-sensitive agricultural activities such as harvesting, silage production, and livestock movement. While such impacts may be temporary, they can have disproportionate effects in an agricultural setting where timing is critical.

More significantly, the EIAR does not assess the long-term operational implications of maintaining underground infrastructure within an active farming landscape. Future repair or upgrade works may require re-excavation of road corridors, with associated disruption to access and land use. The potential for recurring disturbance over the operational lifetime of the development is not considered. The proposal must also be considered in the context of rural land use sustainability. Agriculture represents not only an economic activity but also a defining characteristic of the landscape and community. The introduction of infrastructure which constrains land use flexibility, introduces uncertainty for farm operations, and imposes additional operational burdens on landowners runs counter to the objective of supporting viable rural economies.

Overall, the EIAR fails to provide a meaningful assessment of how the proposed development would interact with and potentially disrupt agricultural operations. The omission of detailed analysis of farm severance, servicing constraints, and operational interference represents a significant gap in the evaluation of land use impacts. In the absence of such assessment, it cannot be concluded that the proposed development would not adversely affect the continued use and viability of agricultural lands in the area.

7.10.3 Implications for future residential development and servicing

The proposed development gives rise to significant and inadequately assessed implications for the future development potential of lands in the area, particularly in respect of rural housing and associated servicing. The receiving environment is characterised by dispersed one-off housing and a pattern of incremental family-based development, where lands are often retained for future residential use by members of local farming families. The EIAR does not meaningfully consider how the introduction of underground electrical infrastructure along local roads may constrain or complicate such development over the long term. A key issue arises in relation to the ability to bring forward future housing sites on lands adjoining the proposed cable route. In rural areas, the viability of such sites is closely linked to the availability of safe access, services, and the ability to connect across local roads. The presence of underground high-voltage infrastructure introduces an additional layer of constraint which may affect the layout, design, and feasibility of future dwellings. The EIAR does not assess whether such infrastructure may impose restrictions on foundation design, site access, or the routing of services to potential future houses. In particular, the issue of utilities crossing roads containing buried infrastructure is not addressed. Future residential development typically requires the installation of water supply, wastewater connections, electricity, telecommunications, and drainage infrastructure, often necessitating crossings beneath or along local roads. The presence of underground electrical cables may:

- Restrict the locations where such crossings can occur;
- Require minimum separation distances or protective measures;
- Introduce additional technical and regulatory requirements; and
- Necessitate agreement or supervision by the infrastructure operator.

These factors have the potential to complicate or delay the servicing of future residential sites, and may in some cases render otherwise viable sites more difficult or costly to develop. The EIAR provides no clarity on how such interactions would be managed, nor does it assess the implications for future planning applications in the area. There is also a broader issue of long-term uncertainty for landowners. The introduction of permanent underground infrastructure creates an ongoing constraint which extends beyond the lifetime of the construction phase and persists for the operational life of the development. Landowners and prospective applicants are left without clear information regarding:

- The extent of any exclusion or safeguarding zones;
- The requirements for working in proximity to the cable;
- The process for obtaining consent for crossings or connections; and
- The potential costs associated with compliance with such requirements.

This uncertainty may act as a deterrent to future development or may result in additional financial burdens being placed on individuals seeking to develop family lands. Such impacts are particularly significant in a rural context, where the ability to provide housing for future generations is an important aspect of sustaining local communities.

Furthermore, the EIAR does not consider the cumulative effect of multiple constraints arising from the development, including traffic, safety, environmental, and infrastructure-related factors. **When combined with the presence of underground cabling, these factors may further limit the attractiveness and feasibility of future residential development in the area.**

Overall, the EIAR fails to assess how the proposed development would interact with the established pattern of rural housing and the reasonable expectations of landowners in relation to future development. The omission of any meaningful analysis of servicing constraints, access limitations, and long-term uncertainty represents a significant gap in the assessment.

In the absence of such consideration, it cannot be concluded that the proposed development would not adversely affect the future development potential of lands in the area or place undue constraints on rural housing and associated infrastructure.

7.11 Ground 11: Aviation safety and tall structures

The proposed development gives rise to potential aviation safety concerns arising from the presence of tall structures within an open rural landscape, including a stack of approximately 30 metres in height, associated plant infrastructure, and construction-phase crane operations. Notwithstanding these characteristics, the EIAR does not contain any meaningful or evidence-based assessment of aviation safety implications.

The documentation confirms that correspondence issued during the application process included the Irish Aviation Authority (IAA) as a stakeholder; however, it is explicitly stated that no additional responses were received. This does not constitute an aviation safety assessment, nor does it demonstrate that the IAA has reviewed or approved the proposed development from an aeronautical safety perspective. The absence of any substantive engagement, assessment outcome, or conditions arising from aviation authorities represents a significant gap in the evaluation of potential risks.

The proposed stack height of approximately 30 metres, while reduced from an earlier design assumption of up to 42 metres, remains a prominent vertical structure within a flat and open landscape. As illustrated in the submitted visualisations (see Fig. 79 below), the development occupies an elevated and highly visible position within the wider rural context, with long-range visibility across agricultural lands and transport corridors.

Fig. 79: Photomontage of Proposed Development Showing Stack and Overall Vertical Profile (Source: Aerial view 02, digital dimensions)

The EIAR justifies the 30-metre stack height on air quality grounds, noting that a lower height would increase ground-level pollutant concentrations, while a higher structure would result in greater visual impact. However, this optimisation process appears to have been undertaken solely with reference to air quality and visual considerations. There is no evidence that aviation safety formed part of this design assessment, nor that the implications of the finalised height were evaluated in an aeronautical context.

In this regard, reference is made to Irish Air Corps guidance on wind farms and tall structures (2014), which emphasises the need to assess potential interactions with military and low-level aviation, including obstacle impacts, lighting, and operational interference. While the proposed development is not a wind farm, the principles set out in this guidance are directly applicable to tall structures in rural environments. The EIAR does not demonstrate that such guidance has been considered or that any assessment of potential interaction with military or low-level aviation activity has been undertaken. This further highlights the absence of a comprehensive aviation safety assessment.

In addition to the permanent structures, the EIAR does not assess the implications of construction-phase crane operations, which typically exceed the height of the completed development and can represent the greatest aviation hazard. There is no information provided regarding:

- Maximum crane heights;
- Duration of crane use;
- Requirement for obstacle lighting or marking during construction; or
- Notification procedures to aviation authorities.

This omission is significant, as temporary crane structures are widely recognised as posing heightened risks to low-flying aircraft, particularly in rural areas where flight paths may not be formally constrained.

Furthermore, the EIAR does not consider the potential interaction with low-level aviation activity, including emergency medical helicopter operations. It is understood that helicopter movements occur in the wider area, including routine evening flights. Such aircraft typically operate at low altitudes and rely on clear, obstacle-free flight paths, particularly during landing and take-off phases or when responding to emergencies. The presence of tall structures and construction cranes, particularly in an unlit or poorly marked condition, may give rise to obstruction risks under certain conditions, including reduced visibility or night-time operations.

The EIAR also fails to consider the historical and locational context of the site in relation to aviation activity, including its proximity to the former Galway Airport and associated flight paths. While the airport is no longer operational, the surrounding airspace may still be used for general aviation and helicopter movements. No assessment is provided of obstacle limitation surfaces, safeguarding zones, or any residual aviation considerations associated with this context.

In addition, there is no assessment of whether the proposed development would require:

- Aviation obstruction lighting;
- Daytime marking (e.g. high-visibility colouring);
- Publication of the structure in aeronautical information systems; or
- Ongoing notification to aviation authorities.

These are standard considerations for developments involving vertical structures of this scale, yet they are not addressed.

Overall, the EIAR fails to demonstrate that the proposed development has been subject to any formal aviation safety assessment, nor does it provide sufficient information to conclude that the development would not pose a risk to air navigation or emergency aviation operations. The reliance on the absence of a response from the IAA, in lieu of a substantive assessment, is not sufficient. The EIAR also fails to consider the interaction between the proposed development and the operational requirements of the gas pipeline network, including inspection (such as aerial monitoring), maintenance access, and emergency response. These activities are integral to the safe operation of gas infrastructure and may give rise to additional constraints, risks, or access requirements which are not assessed. The omission of this interaction further undermines the completeness of the EIAR in respect of major accident and operational safety considerations.

Given the presence of tall structures, the potential for significant crane heights during construction, the open and exposed nature of the landscape, and the absence of any detailed aviation analysis, it cannot be concluded that the proposed development would not give rise to aviation safety risks.

Accordingly, the proposal is contrary to the proper planning and sustainable development of the area.

7.12 Ground 12: The proposed development, if permitted, would contribute to a level of flexible generation capacity significantly in excess of identified national requirements.

National energy policy clearly recognises the need for additional flexible electricity generation capacity in order to support security of supply and facilitate the transition to a renewable-led energy system. In particular, the Climate Action Plan 2025 (CAP25) and associated national policy framework identify a requirement for the delivery of new flexible gas-fired generation capacity over the coming decade.

As acknowledged in the applicant's own Planning Statement, the CAP25 targets:

> ***The delivery of at least 2GW of new flexible gas plant by 2030 is included as a national target…***

This target is further reflected in the CRU-led Security of Supply Programme, which provides for:

> ***the procurement of at least 2GW of new, flexible, enduring capacity through market mechanisms by 2030***

Accordingly, it is accepted that there is a national policy basis for the provision of flexible generation capacity in principle, and that such infrastructure plays a role in maintaining system resilience during periods of peak demand and low renewable output.

The proposed development would contribute materially to this national target. The Planning Statement confirms that the proposed plant would provide:

> ***a total output capacity of either 325MW or 334MW… with a maximum output capacity not exceeding 334MW (0.334GW)***

On this basis, the proposed development alone would account for approximately **0.33GW**, representing a significant proportion of the identified national requirement of 2GW.

However, the critical issue is not whether additional flexible generation is required in principle, but whether the need for **this particular development** has been demonstrated in the context of existing, permitted, contracted and proposed capacity. In this regard, the EIAR and Planning Statement are materially deficient.

In this regard, it is important to note that the application does not provide a clear, evidence-based demonstration of need for this specific development. The EIAR does not assess existing, permitted, or contracted flexible generation capacity within the system, nor does it place the proposed development within the context of the wider generation pipeline. Furthermore, no analysis is provided to demonstrate that the project would contribute to emissions reduction through the displacement of higher-emitting generation, or that it would improve overall system efficiency. In the absence of such evidence, reliance on general policy support for flexible generation is insufficient to establish a site-specific planning justification, and the need for the proposed development remains unproven.

No attempt is made to quantify:

- the existing baseline of dispatchable and flexible generation capacity on the system,
- the volume of capacity already secured through the capacity market,
- the extent of permitted or under-construction gas-fired generation, or
- the scale of additional projects currently in planning or pre-planning stages.

This omission is particularly significant given that EirGrid confirms that the **T-1 2023/2024 capacity market auction alone delivered 345 MW of new capacity across Ireland and Northern Ireland**[3]. This represents a substantial proportion of the overall national requirement and demonstrates that significant volumes of new generation are already progressing through established market mechanisms.

Furthermore, EirGrid's published Generation Capacity Statements and associated analysis indicate that **over 2,000 MW of new flexible gas-fired generation is already envisaged to be delivered through capacity auctions by 2030**[4]. Crucially, those same documents highlight that the electricity system is characterised not simply by capacity deficits, but by **uncertainty in delivery**, including the withdrawal and termination of previously contracted projects. This reinforces the need for careful, evidence-based assessment of actual system requirements, rather than reliance on high-level policy targets in isolation.

Despite this, the EIAR does not engage with the available EirGrid data, nor does it attempt to place the proposed development within the context of the wider generation pipeline. There is no cumulative assessment of total flexible generation capacity when existing, contracted and proposed developments are considered together.

This objection has therefore sought, at a high level, to identify and quantify the **multitude of existing, permitted and proposed flexible generation projects**, which collectively indicate that the overall pipeline of such development is substantial and may already approach or exceed the identified national requirement of 2GW.

In the absence of any such assessment by the applicant, it is not possible for the decision-maker to determine:

- whether a genuine unmet need exists,
- whether that need has already been substantially addressed by other projects, or
- whether the proposed development would contribute to an **overprovision of flexible generation capacity**.

This represents a fundamental evidential gap. The existence of a general national policy objective or participation in the capacity market does not, in itself, establish a site-specific planning need. Nor does it demonstrate that every individual project within an expanding pipeline is required. In these circumstances, the EIAR fails to demonstrate that the proposed development is necessary to meet an identified and outstanding system requirement. On the contrary, the available evidence indicates that substantial volumes of capacity are already secured or in progress, and that the cumulative position has not been properly assessed.

Accordingly, it is submitted that the proposed development, if permitted, would risk contributing to a level of flexible generation capacity significantly in excess of identified national requirements, and that the application fails to demonstrate a clear and evidence-based justification for the development at this location. On that basis, the proposal is contrary to the proper planning and sustainable development of the area.

7.13 Ground 13: The proposed development would set poor precedents

For the reasons set out above and below, the proposed development, if granted, would set poor precedents for:

1. Permitting piecemeal development in the rural area.
2. Permitting large-scale energy and utility infrastructure in an open countryside location.
3. Permitting development on substandard roads which cannot safely support it.
4. Permitting developments which fail to integrate into the rural landscape.
5. Permitting visually intrusive and incongruous development which fails to integrate into the receiving rural landscape,
6. Permitting development where the EIAR is demonstrably incomplete and lacks robust assessment.
7. For development which impacts adversely on adjoining and surrounding properties.

For the reasons set out above, the proposed development, if granted, would set a poor precedent for future development in the vicinity of this site and in the surrounding area.

Our client asks ACP to protect this area by refusing planning permission thereby avoiding setting a negative precedent for future development in this area.

7.14 Ground 14: The proposed would cause depreciation of site value

Our clients are concerned that the proposed development would adversely impact on the value of their properties site. The potential impact that a proposed development can have on property values is recognised by the Planning Acts which include a reason for refusal reason 10. (c) of the Fourth Schedule 'Reasons for the Refusal of Permission which Exclude Compensation' of the Planning Acts 2000-2015:

> *10. In the case of development including any structure or any addition to or extension of a structure, the structure, addition or extension would— (c) seriously injure the amenities, or depreciate the value, of property in the vicinity.*

The only basis for this scheme to proceed is that the interests of the applicant are placed above those of the area and of our clients' properties.

The High Court in Gleann Fia v An Bord Pleanàla [2019] IEHC 618 has held that it is not necessary to put very detailed information before the Commission that the development as granted would reduce the value of land significantly or adversely affect the enjoyment of land:

> *106. Although no valuation evidence was presented to back up the contention that this "would ... reduce significantly its value", there is nothing in s.37(6)(d)(ii) that mandates the submission of valuation evidence. While the court should not speculate as to the Board's thinking or reasoning, it would not be irrational or*

unreasonable for it to have treated the views expressed by RPS in this passage as plausible and common sense if it also accepted that the greater detail provided in the further information, and the review/approval of the Traffic and Transportation Section of the Council on 24th October, 2018 rendered the development of the pedestrian bridge and walkways more imminent, and more likely that it would be carried out by the Council.

107. Accordingly, I am of the view that there was some evidence before the Board from which it could objectively have come to the view that Condition 1, including the plans and particulars lodged with the further information, and/or Condition 35 could of themselves have led to a reduction in value of the Notice Parties' lands. The weight to be attached to this evidence was entirely a matter for the Board. For this reason, if this were the only criterion in respect of which the applicants made complaint, and was the only ground for seeking judicial review, I would not grant certiorari.

It is the professional opinion of BPS that this scheme would reduce the value of our clients' properties.

7.15 Ground 15: Long-term sustainability, fuel uncertainty and distribution of impacts

The proposed development raises serious concerns regarding its long-term operational profile, fuel dependency, and the broader trajectory of energy infrastructure in the area. While presented as a flexible and responsive generation asset, the EIAR does not adequately address the implications of the plant's likely fuel sources over its operational lifetime, nor the wider consequences for the receiving environment and local community.

The concerns arising from the proposed development can be grouped under three interrelated themes: (i) uncertainty regarding long-term fuel sourcing and operational profile, (ii) the potential for cumulative and evolving infrastructure impacts over time, and (iii) the imbalance between localised environmental impacts and the distribution of wider system benefits. These issues are not separately or adequately addressed within the EIAR and collectively give rise to significant uncertainty as to the long-term sustainability of the proposed development.

A key concern arises in relation to the future availability and source of natural gas. The Corrib gas field, which has historically supplied a significant proportion of Ireland's indigenous gas demand, is widely acknowledged to be in decline. Notwithstanding this, the EIAR does not meaningfully assess how the proposed plant would be fuelled over the medium to long term. In the absence of indigenous supply, the development would likely become increasingly reliant on imported gas, including liquefied natural gas (LNG), which may include higher-emission sources such as fracked gas. This introduces both environmental and energy security concerns which are not evaluated in the application.

In addition, the EIAR identifies the presence of diesel backup systems as part of the proposed development. However, there is no detailed assessment of the frequency or circumstances under which such systems may be utilised, particularly during periods of gas constraint or peak demand. The potential for increased reliance on higher-emission backup fuels over time is therefore not examined, nor are the associated implications for air quality, climate emissions, or local amenity.

The location of the proposed development is also of strategic concern. The site is situated in proximity to significant existing electricity infrastructure, including high-voltage transmission networks. While this is presented as a technical advantage, it also creates the conditions for further energy-intensive or industrial development in the area. In particular, the clustering of generation and grid infrastructure may facilitate or attract additional high-demand uses, such as large-scale data centres or other electricity-intensive industries. The EIAR does not assess this potential for indirect or secondary development, nor does it consider the cumulative implications of such a trajectory for the rural character of the area.

From a planning perspective, this raises fundamental questions regarding the long-term transformation of the area. The introduction of a large-scale peaker plant, combined with existing and potential future infrastructure, risks initiating a pattern of incremental industrialisation which is neither acknowledged nor assessed in the EIAR. There is also a clear disconnect between the impacts borne locally and the benefits derived nationally. The proposed development would introduce significant industrial infrastructure into a rural community, with associated impacts including visual intrusion, noise, traffic, and perceived safety risks. However, there is no evidence that the local community would derive any direct or proportionate benefit from hosting such infrastructure. On the contrary, it is widely recognised that electricity costs in Ireland remain among the highest in Europe, and the development does not provide for any mechanism by which local residents would benefit from reduced energy costs or improved local services.

In this context, the proposal gives rise to a situation whereby the local community is expected to accommodate the environmental, visual, and perceived risk impacts of nationally significant energy infrastructure, without any corresponding local gain. This imbalance is not addressed in the EIAR and is contrary to the principles of sustainable development and fair distribution of infrastructure burdens.

Overall, the EIAR fails to engage with the long-term implications of the proposed development in terms of fuel sourcing, infrastructure clustering, and community impact. It does not assess how the development may evolve over time, how it may interact with broader energy trends, or how it may influence the future character and function of the area.

In particular, the EIAR does not assess how the proposed development may evolve over its operational lifetime, including potential changes in fuel use, operating patterns, or its role within the wider electricity system. Nor does it consider how the cumulative presence of energy infrastructure may influence future land use patterns or the character of the area. This absence of a forward-looking assessment represents a significant gap, as the long-term implications of the development are central to determining its acceptability in planning terms.

In the absence of such analysis, it cannot be concluded that the proposed development represents a sustainable or appropriate form of development in this rural location. On the contrary, it gives rise to a credible risk of long-term adverse consequences for the local community, without commensurate benefit, and should therefore be refused.

7.16 Ground 16: Non-Compliance with Climate Law, EIA Directive, and Environmental Sustainability Requirements

This section summarises the key points of concern from a legal perspective raised in the enclosed legal note prepared by FPLogue Solicitors which supports this appeal.

7.16.1 Failure to comply with Section 15 of the Climate Action and Low Carbon Development Act 2015

Having regard to the obligations arising under Section 15(1) of the Climate Action and Low Carbon Development Act 2015, it is submitted that both the applicant and An Coimisiún Pleanála are required to perform their respective functions in a manner consistent with the national climate objective, approved Climate Action Plans, carbon budgets, and sectoral emissions ceilings.

The EIAR fails to provide sufficient information to enable the competent authority to assess whether the proposed development complies with these statutory obligations. In particular, the EIAR does not demonstrate how the development aligns with the legally binding trajectory towards a climate neutral economy by 2050, nor does it assess the compatibility of the proposed emissions profile with the applicable carbon budgets or sectoral emissions ceilings.

In the absence of such information, the competent authority cannot lawfully conclude that the proposed development is consistent with Section 15(1), and permission must therefore be refused.

7.16.2 Deficiencies in the EIAR in relation to climate assessment

Having regard to Article 5 and Annex IV of the EIA Directive, the EIAR fails to adequately assess the likely significant effects of the proposed development on climate.

The EIAR does not provide:

- A transparent or verifiable breakdown of greenhouse gas emissions;
- Sufficient data on fuel consumption, efficiency, or emissions intensity;
- A robust assessment of lifecycle emissions;
- Information enabling comparison with reasonable alternatives on a like-for-like emissions basis.

This omission is particularly significant given that climate change is expressly identified as a factor requiring detailed assessment under Annex IV of the Directive. The lack of sufficient information prevents both the competent authority and the public from properly evaluating the climate impacts of the development .

7.16.3 Failure to properly assess reasonable alternatives in climate terms

The EIAR fails to assess reasonable alternatives in accordance with the requirements of the EIA Directive, particularly in relation to climate impacts.

In particular, the dismissal of more efficient combined-cycle gas turbine (CCGT) technology is not supported by a comparative assessment of greenhouse gas emissions. There is no analysis of whether alternative technologies would result in materially lower cumulative emissions over the operational lifetime of the development.
This is inconsistent with the requirement to assess alternatives having regard to environmental effects, including climate change, and undermines the credibility of the EIAR.

7.16.4 Incompatibility with national and EU climate trajectories

The proposed development is predicated on continued greenhouse gas emissions to 2050. However, national climate policy and the National Long Term Climate Action Strategy envisage a near-zero or net-negative emissions electricity sector by 2035.

The EIAR does not reconcile this fundamental inconsistency. On the contrary, it assumes a constant emissions profile over the lifetime of the development, which is directly at odds with the legally binding trajectory towards decarbonisation.

7.16.5 Failure to demonstrate environmental sustainability (EU Taxonomy)

Having regard to the requirements of EU law, including Regulation (EU) 2020/852 (the Taxonomy Regulation), the proposed development has not been demonstrated to constitute an environmentally sustainable activity. There is no evidence that the development:

- Meets the applicable greenhouse gas emissions thresholds;
- Makes a substantial contribution to climate change mitigation; or
- Avoids significant harm to climate objectives.

On the contrary, the available information indicates that the development is likely to exceed applicable emissions thresholds and therefore constitutes a development which would significantly harm climate mitigation objectives.

7.16.6 Conclusion

Having regard to the foregoing, the proposed development:

- Is not supported by an EIAR which complies with the EIA Directive;
- Has not been demonstrated to be consistent with Section 15 of the 2015 Act;
- Is incompatible with national and EU climate objectives; and
- Does not constitute environmentally sustainable development.

The proposed development therefore conflicts with the proper planning and sustainable development of the area.

7.17 Ground 17: Material contravention of Galway County Development Plan 2022 - 2028

The proposed development would materially contravene the following policies and objectives of the Galway County Development Plan 2022 – 2028.

CDP Objective / Policy	Description	Contravention
EG1 – Enhancement of Electricity Infrastructure	*Support and promote the sustainable improvement and expansion of electricity infrastructure, subject to landscape, residential, amenity and environmental considerations*	The proposal fails to satisfy these qualifying criteria. Significant adverse impacts arise in respect of residential amenity, landscape character, human health, and environmental quality. The EIAR does not robustly demonstrate that these impacts can be avoided or mitigated.
EL 1 – Key Employment Locations	*… To ensure development is compatible with the enhancement, preservation and protection of the environment and recognised cultural resources; …*	The proposed development fails to demonstrate compatibility with the receiving environment. As set out in Grounds 2–7, the development would give rise to significant adverse impacts on landscape character, rural amenity, biodiversity, and cultural heritage. The introduction of a large-scale industrial energy facility into a predominantly agricultural and residential rural area represents a fundamental conflict with the existing environmental and cultural context, rather than its enhancement or protection. The EIAR does not adequately assess or mitigate these impacts, and therefore the

		proposal is contrary to the requirements of Policy EL1.
EL 2 – Strategic Economic Corridor	*In relation to the Strategic Economic Corridor the Planning Authority will take steps to: • Reserve lands to support nationally and regionally significant activities and to attract specialist enterprise development that is large scale of high value; • Facilitate opportunities for employment and technology-based uses; • Ensure that development is compatible with the enhancement, preservation and protection of the environment and cultural resources recognised within the corridor; • Identify sites of adequate size and location to accommodate necessary infrastructure or support activities which would not be appropriate in proximity to centres of population or sensitive environments or environmentally sensitive economic activities;*	The site is not appropriate having regard to its proximity to established residential receptors and rural land uses. The proposal represents an incompatible industrial intrusion into a receptor-rich rural environment and misinterprets the conditional nature of this policy.
AQ1 – Ambient Air Quality	*To promote the preservation of best ambient air quality compatible with sustainable development in accordance with the EU Ambient Air Quality and Cleaner Air for Europe (CAFÉ) Directive (2008/50/EC) and ensure that all air emissions associated with new developments are within Environmental Quality Standards as set out in the Air Quality Standards Regulations 2011 (SI No. 180 of 2011) (or any updated/superseding documents).*	The EIAR relies on standard modelling and does not adequately assess worst-case meteorological conditions or cumulative exposure. The Planning Authority cannot be satisfied that air quality and public health will be protected.
AQ2 – Assessment of Air Quality	*To require developments which would have the potential to have adverse impacts on air quality to carry out assessments of the impact of the development on air quality.*	The assessment lacks robustness, particularly in relation to cumulative impacts, long-term exposure, and uncertainty in dispersion modelling, undermining confidence in its conclusions.
AQ3 – Air Quality Mitigation	*To require the use of appropriate mitigation measures such as dust dampeners to minimise the potential impacts of developments on air quality*	Mitigation measures are generic and unproven in the context of worst-case scenarios. There is no evidence that impacts can be reduced to acceptable levels in all conditions.
NP1 – Galway County Council Noise Action Plan 2019-2023	*To implement the Galway County Council Noise Action Plan 2019-2023 (and any subsequent Plan) in order to avoid, prevent and reduce the harmful effects, including annoyance, due to environmental noise exposure.*	The development introduces significant industrial noise into a quiet rural environment. The EIAR does not adequately address cumulative, tonal, or low-frequency noise, nor demonstrate effective mitigation for nearby receptors.
CC1 – Climate Change	*Support and facilitate the implementation of European, National and Regional objectives for climate adaptation and mitigation taking into account other provisions of the Plan (including those relating to land use planning, energy, sustainable mobility, flood risk management and drainage) and having regard to the Climate mitigation and adaptation measures.*	The proposal represents long-term fossil fuel infrastructure (to 2050), with inadequate assessment of lifecycle emissions, carbon lock-in, and consistency with national decarbonisation targets.
CC2 - Transition to a low carbon, climate-resilient society	*It is a policy objective of the Planning Authority to support the transition to a competitive, low carbon, climate-resilient and environmentally sustainable economy by 2050, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency*	The proposed development comprises a fossil fuel-based gas-fired power plant with an operational lifespan extending to 2050, which is inherently inconsistent with the objective of transitioning to a low-carbon economy. While the applicant seeks to position the development as supporting renewable energy integration, this does not offset the direct and ongoing greenhouse gas emissions arising from combustion. The EIAR fails to adequately assess lifecycle emissions, carbon lock-in effects, or alignment with evolving national decarbonisation targets. In this context, the

		development would prolong reliance on fossil fuels and undermine the achievement of a low-carbon, climate-resilient energy system, contrary to Policy CC2.
CC8 – Climate Action and Development Location	*To implement, through the plan and future local areas plans, policies that support and encourage sustainable compact growth and settlement patterns, integrate land use and transportation, and maximise opportunities through development location, form, layout and design to secure climate resilience and reduce carbon dioxide and greenhouse emissions.*	The proposed development is located in an unzoned, rural and car-dependent area, removed from any established settlement or sustainable transport network. The siting of a large-scale industrial facility in this location is fundamentally inconsistent with the principles of compact growth and integrated land use and transport. The development would generate significant vehicular movements, including HGV traffic, reinforcing car dependency and associated emissions. Furthermore, the dispersed rural location undermines climate resilience and represents a pattern of development expressly discouraged by the Development Plan. Accordingly, the proposal fails to align with the spatial and climate objectives of Policy CC8.
NHB 1 - (Natural Heritage and Biodiversity of Designated Sites, Habitats and Species)	*Protect and where possible enhance the natural heritage sites designated under EU Legislation and National Legislation (Habitats Directive, Birds Directive, European Communities (Birds and Natural Habitats) Regulations 2011 and Wildlife Acts) and extend to any additions or alterations to sites that may occur during the lifetime of this plan. Protect and, where possible, enhance the plant and animal species and their habitats that have been identified under European legislation (Habitats and Birds Directive) and protected under national Legislation (European Communities (Birds and Natural Habitats) Regulations 2011 (SI 477 of 2011), Wildlife Acts 1976-2010 and the Flora Protection Order (SI 94 of 1999). Support the protection, conservation and enhancement of natural heritage and biodiversity, including the protection of the integrity of European sites, that form part of the Natura 2000 network, the protection of Natural Heritage Areas, proposed Natural Heritage Areas, Ramsar Sites, Nature Reserves, Wild Fowl Sanctuaries (and other designated sites including any future designations) and the promotion of the development of a green/ ecological network.*	The EIAR and Natura Impact Statement fail to provide sufficient scientific certainty that the proposed development will not adversely affect the integrity of European sites, either alone or in combination with other plans or projects. As set out in Ground 6, there are material deficiencies in ecological survey scope, seasonal coverage, and the assessment of impact pathways, including hydrological and air quality effects. The reliance on mitigation measures is not supported by robust evidence of effectiveness, and key uncertainties remain unresolved. In this context, the competent authority cannot exclude the potential for adverse effects on designated sites and protected species, contrary to the requirements of Policy NHB 1 and the Habitats Directive.
NHB 4 - Ecological Appraisal of Biodiversity	*Ensure, where appropriate, the protection and conservation of areas, sites, species and ecological/networks of biodiversity value outside designated sites. Where appropriate require an ecological appraisal, for development not directly connected with or necessary to the management of European Sites, or a proposed European Site and which are likely to have significant effects on that site either individually or cumulatively.*	The EIAR does not provide a sufficiently robust or comprehensive ecological appraisal to satisfy the requirements of this policy. As set out in Ground 6, there are deficiencies in survey coverage, seasonal timing, and assessment of cumulative effects. The potential for indirect impacts on European Sites via hydrological pathways and atmospheric emissions is not adequately assessed, and reliance is placed on assumptions rather than evidence. Accordingly, the assessment fails to demonstrate, beyond reasonable scientific doubt, that significant effects on ecological receptors can be avoided.
NHB 5 - Ecological Connectivity and Corridors	*Support the protection and enhancement of biodiversity and ecological connectivity in nondesignated sites, including woodlands, trees, hedgerows, semi-natural grasslands, rivers, streams, natural springs, wetlands,*	The proposed development would result in the disturbance, fragmentation, and potential loss of ecological features that contribute to local biodiversity and connectivity, including hedgerows,

	stonewalls, geological and geo-morphological systems, other landscape features and associated wildlife areas where these form part of the ecological network and/or may be considered as ecological corridors in the context of Article 10 of the Habitats Directive	agricultural habitats, and wider landscape linkages. The EIAR does not adequately assess the functional role of these features as ecological corridors, nor does it demonstrate that connectivity can be maintained post-development. Proposed mitigation measures are limited and lack certainty in delivery and effectiveness. As such, the development would undermine ecological connectivity at a local and wider landscape level, contrary to Policy NHB 5.
NR1 – Protection of Strategic Roads	*To protect the strategic transport function of national roads and associated national road junctions, including motorways through the implementation of the 'Spatial Planning and National Roads Guidelines for Planning Authorities' DECLG, (2012) and the TransEuropean Networks (TEN-T) Regulations*	The proposed development would generate significant volumes of construction and operational traffic, including HGV movements, which would interact with both the national road network and substandard regional and local roads. The EIAR and accompanying transport assessment rely on theoretical capacity assumptions and do not adequately reflect the constrained geometry, limited visibility, and existing safety issues of the local road network. There is insufficient evidence that the receiving road network can safely accommodate the scale and nature of traffic generated. Furthermore, the assessment fails to robustly address cumulative impacts, abnormal load deliveries, and real-world operational conditions. In this context, the proposal would undermine the safety, function, and carrying capacity of the road network, contrary to the requirements of Policies NR1, NR3 and NNR2.
NR3 – Traffic and Transport Assessment (TTA) and Road Safety Audit (RSA)	*Require all applications for significant development proposals which have the potential to impact on the National Road Network to be accompanied by a Traffic and Transport Assessment (TTA) and Road Safety Audit (RSA), carried out by suitably competent persons, in accordance with the TII's Traffic and Transport Assessment Guidelines and TII Publications (Standard) GE-STY-01024 (Road Safety Audit) respectively*	
NNR2 – Safeguard Regional and Local Roads	*To safeguard the carrying capacity and safety of the County's regional and local road network*	
Core Strategy	Ensure development is compatible with the receiving environment and represents proper planning and sustainable development[5]	The proposal introduces a large-scale industrial use into an unzoned rural area characterised by residential and agricultural uses, resulting in a fundamental land-use conflict and overdevelopment of the site.

Table 8: Material Contravention of Policies and Objectives of the Galway County Development Plan 2022 – 2028

8.0 Conclusion

In light of the foregoing, it is respectfully submitted that there is a clear and consistent body of planning precedent, both at the level of An Coimisiún Pleanála and across major infrastructure decisions, which supports the refusal of large-scale energy and industrial developments where fundamental issues arise in relation to site suitability, environmental assessment, public safety, and residential amenity.

The proposed Cashla Peaker Plant exhibits many of the same core deficiencies that have led to refusal in comparable cases, including:

- ***Failure to Properly Assess Alternatives and Need:***
  The applicant has failed to robustly justify the selection of an open-cycle gas turbine (OCGT) technology, or to demonstrate that this fossil fuel-based development represents the most appropriate or sustainable option. The alternatives assessment is superficial and does not comply with the requirements of the EIA Directive, particularly in the context of climate policy and long-term energy transition.

- ***Project Splitting and Deficient Cumulative Assessment:***
  The proposal relies on a fragmented consent strategy, whereby the generating plant, grid connection, and gas connection are advanced separately, despite forming a single interdependent project. This undermines transparency and prevents a comprehensive assessment of cumulative environmental effects, contrary to established planning and EIA principles.

[5] Not a direct quotation from the Core Strategy.

- ***Traffic, Access, and Abnormal Load Risks:***
  The development depends on the transport of abnormal loads and significant construction traffic along a rural road network that has not been demonstrated to be suitable or capable of accommodating such movements. The absence of definitive route assessments, bridge capacity verification, and third-party consents gives rise to serious and unresolved concerns regarding feasibility and public safety.

- ***Major Accident Hazard and Public Safety Concerns:***
  The application fails to adequately address the risks associated with fire, explosion, and major accident scenarios, particularly in the context of nearby residential receptors. The reliance on qualitative assessment, without robust modelling of worst-case scenarios or clear demonstration of appropriate separation distances, is inconsistent with best practice and raises significant land-use planning concerns.

- ***Inadequate Assessment of Environmental Sensitivities:***
  The site is located in an area identified as environmentally sensitive, including karst geology and potential hydrological pathways. The assessment of groundwater vulnerability, surface water connectivity, and ecological risk is insufficiently detailed and does not provide the level of scientific certainty required to support a grant of permission.

- ***Adverse Impacts on Residential Amenity and Rural Character:***
  The introduction of a large-scale industrial energy facility, including a 30m stack, continuous plant infrastructure, lighting, and associated activity, would fundamentally alter the character of this rural area. The impacts on nearby residential properties in terms of visual intrusion, noise, disturbance, and loss of amenity have not been adequately assessed or mitigated.

Collectively, these issues demonstrate that the proposed development would give rise to significant and unacceptable impacts, while also failing to meet the required standards of environmental assessment, transparency, and planning justification.

Furthermore, it is considered that the applicant has failed to adequately respond to the substantive issues raised during pre-application consultation with An Coimisiún Pleanála and prescribed bodies. These included concerns regarding technology selection, karst geology, traffic and abnormal load feasibility, hydrological risk, visual impact, and the omission of key project components from the application. The failure to meaningfully address these matters represents a significant deficiency in the application and undermines confidence in the overall proposal.

Accordingly, the precautionary principle, the need to safeguard public safety and residential amenity, and the requirement for robust, transparent, and legally compliant environmental assessment all converge to support the refusal of permission in this case.

Having regard to the National Planning Framework, the Regional Spatial and Economic Strategy, the Galway County Development Plan 2022–2028, and all documentation submitted with the application, it is submitted that there are serious and fundamental concerns which necessitate refusal of permission. These include:

- **Firstly**, there is a fundamental failure to establish the principle of development at this location. The applicant has not demonstrated that a fossil fuel-based peaker plant is appropriate in this rural setting, nor that the site is suitable having regard to nearby receptors, environmental sensitivities, and policy context.

- **Secondly**, the application documentation, including the EIAR, is inadequate and deficient, particularly in relation to alternatives assessment, major accident risk, hydrology, and cumulative effects. It does not provide a sufficiently robust basis for informed decision-making.

- **Thirdly**, the proposed development gives rise to serious traffic and access concerns, including the feasibility of abnormal load delivery and the suitability of the surrounding road network, which remain unresolved.

- **Fourthly**, the proposal would result in significant adverse impacts on residential amenity and rural character, through the introduction of industrial infrastructure into a predominantly agricultural and low-density residential area.

- **Fifthly**, the application fails to adequately address major accident hazards and land-use planning risks, including fire, explosion, and off-site consequences, particularly in proximity to sensitive receptors.

- **Sixthly**, the reliance on a segmented project approach undermines the integrity of the environmental assessment process and prevents a full and proper evaluation of cumulative impacts.

In summary, the proposed Cashla Peaker Plant represents an inappropriate, inadequately justified, and insufficiently assessed development that would give rise to unacceptable environmental, safety, and amenity

impacts. The application fails to comply with the principles of proper planning and sustainable development and does not meet the requirements of national or EU environmental assessment law.

Accordingly, it is respectfully submitted that planning permission should be refused.

9.0 Recommendation

The proposed development should be refused for the following reasons:

1. Having regard to the location of the proposed development within an unzoned rural area characterised by agricultural land use and dispersed residential settlement, it is considered that the applicant has failed to adequately demonstrate that the principle of a large-scale fossil fuel-based electricity generating station at this location is acceptable. The proposal would represent an inappropriate and incompatible form of industrial development in a rural setting, resulting in a fundamental land-use conflict and overdevelopment of the site. The proposed development would therefore be contrary to the Core Strategy of the Galway County Development Plan 2022–2028, including the requirement that development be compatible with the receiving environment, and would materially contravene Policies EL1 and EL2 relating to environmental compatibility and appropriate siting within the Strategic Economic Corridor. The development would therefore be contrary to the proper planning and sustainable development of the area.

2. Having regard to the reliance on open-cycle gas turbine (OCGT) technology, the absence of a robust assessment of reasonable alternatives, and the proposed operational lifespan extending to 2050, it is considered that the development would be inconsistent with national and regional climate policy objectives relating to decarbonisation and the transition to a low-carbon energy system. The proposed development would therefore materially contravene Policies CC1, CC2 and CC8 of the Galway County Development Plan 2022–2028, which seek to support climate mitigation, reduce greenhouse gas emissions, and promote sustainable development patterns. The development would therefore be contrary to the proper planning and sustainable development of the area. In this regard, it is noted that the EIAR fails to provide sufficient information to enable the competent authority to assess compliance with Section 15(1) of the Climate Action and Low Carbon Development Act 2015, including alignment with carbon budgets, sectoral emissions ceilings, and the national climate objective. In the absence of such information, the competent authority cannot lawfully conclude that the proposed development is consistent with its statutory climate obligations.

3. Having regard to the interdependent nature of the proposed development, including the peaker plant, gas connection, and grid connection infrastructure, and the fact that these elements are being advanced through separate consent processes, it is considered that the application constitutes an impermissible segmentation of a single project. In the absence of a comprehensive and integrated assessment of cumulative environmental effects, the proposed development would be contrary to the requirements of the EIA Directive and would undermine the environmental protection objectives of the Galway County Development Plan 2022–2028, including Policy EG1, which requires that infrastructure development be subject to appropriate environmental safeguards. The proposed development would therefore be contrary to the proper planning and sustainable development of the area.

4. Having regard to the nature and scale of the proposed development, the requirement for the delivery of abnormal loads, and the characteristics of the surrounding road network, it is considered that the applicant has failed to demonstrate that the road infrastructure is capable of safely accommodating the construction and operational traffic associated with the development. The absence of confirmed haul routes, bridge capacity assessments, and third-party consents gives rise to serious concerns regarding traffic safety. The proposed development would therefore endanger public safety and would materially contravene Policies NR1, NR3 and NNR2 of the Galway County Development Plan 2022–2028, which seek to protect the safety, function, and carrying capacity of the road network. The development would therefore be contrary to the proper planning and sustainable development of the area.

5. Having regard to the nature of the proposed development involving the storage and use of hazardous substances, including natural gas and diesel, the proximity of sensitive receptors, and the absence of robust quantitative risk assessment, worst-case scenario modelling, and demonstration of appropriate separation distances, it is considered that the applicant has failed to adequately assess and mitigate the risk of major accidents, including fire and explosion. The proposed development would therefore pose an unacceptable risk to public safety and would be contrary to Policy EG1 of the Galway County Development Plan 2022–2028, which requires that infrastructure development be subject to environmental and safety considerations. The development would therefore be contrary to the proper planning and sustainable development of the area.

6. Having regard to the location of the site within a karst limestone landscape, the potential for complex groundwater flow pathways, and the concerns raised by prescribed bodies, it is considered that the applicant has failed to adequately characterise and assess hydrogeological risks. In the absence of detailed and site-specific investigation and modelling, it cannot be concluded that the proposed development would not give rise to groundwater contamination or adverse impacts on water resources. The proposed development would therefore be contrary to environmental protection objectives of the Galway County Development Plan

2022–2028, including Policy EG1, and would be contrary to the proper planning and sustainable development of the area.

7. Having regard to the proximity of residential properties to the proposed development, the scale and industrial nature of the facility, including a 30m stack, plant infrastructure, lighting, and associated activity, it is considered that the development would result in significant adverse impacts on residential amenity, including visual intrusion, noise, disturbance, and loss of rural character. The proposed development would therefore materially contravene Policies EG1 and EL1 of the Galway County Development Plan 2022–2028, which require the protection of residential amenity and environmental quality. The development would therefore seriously injure the amenities of property in the vicinity and would be contrary to the proper planning and sustainable development of the area.

8. Having regard to the scale, height, and industrial character of the proposed structures, and their location within an open rural landscape, it is considered that the development would constitute a visually intrusive and incongruous feature, materially detracting from the rural character of the area. The proposed development would therefore materially contravene Policies EG1 and EL1 of the Galway County Development Plan 2022–2028, which seek to protect landscape character and visual amenity. The development would therefore be contrary to the proper planning and sustainable development of the area.

9. Having regard to the deficiencies identified in the Environmental Impact Assessment Report, including in relation to alternatives assessment, traffic, hydrology, major accident risk, and cumulative effects, it is considered that the EIAR does not provide a sufficiently robust or complete assessment of the likely significant environmental effects of the proposed development. In the absence of such information, the Planning Authority cannot be satisfied that the proposed development would not have significant adverse effects on the environment and would therefore be contrary to Policy EG1 and the environmental protection objectives of the Galway County Development Plan 2022–2028. The development would therefore be contrary to the proper planning and sustainable development of the area.

10. Having regard to the issues raised during pre-application consultation by An Coimisiún Pleanála and prescribed bodies, including concerns relating to technology selection, karst geology, traffic, hydrological pathways, visual impact, and project scope, it is considered that the applicant has failed to adequately address these matters in the submitted application. This failure undermines the validity and robustness of the proposal and conflicts with the requirements of Policy EG1 of the Galway County Development Plan 2022–2028. The proposed development would therefore be contrary to the proper planning and sustainable development of the area.

11. Having regard to the uncertainty regarding the long-term operation of the plant, including potential reliance on alternative fuels such as imported LNG or diesel, and the potential for the development to facilitate further high-demand infrastructure in the area, it is considered that the full long-term environmental and planning implications of the development have not been adequately assessed. The proposed development would therefore be contrary to Policies CC1 and CC2 of the Galway County Development Plan 2022–2028, which seek to support a transition to a low-carbon and sustainable energy system, and would be contrary to the proper planning and sustainable development of the area.

12. Having regard to the absence of any detailed assessment of the capacity of local emergency services to respond to a major industrial incident at the site, including response times, access constraints, and resource availability, it is considered that the application fails to demonstrate that the risks associated with the development can be adequately managed. The proposed development would therefore pose a risk to public safety and would be contrary to Policy EG1 of the Galway County Development Plan 2022–2028. The development would therefore be contrary to the proper planning and sustainable development of the area.

13. Having regard to the provisions of Section 15(1) of the Climate Action and Low Carbon Development Act 2015, as amended, which require that the competent authority perform its functions in a manner consistent with the most recent Climate Action Plan, carbon budgets, sectoral emissions ceilings, and the national climate objective, it is considered that the applicant has failed to demonstrate that the proposed development would be compatible with these statutory requirements. In the absence of sufficient information to assess the consistency of the proposed development with national climate obligations, the Board cannot be satisfied that the development would contribute to or be consistent with the transition to a climate neutral economy. The proposed development would therefore be contrary to national climate policy and to the proper planning and sustainable development of the area.

14. Having regard to the requirements of Article 5 of Directive 2011/92/EU, as amended, it is considered that the Environmental Impact Assessment Report (EIAR) submitted with the application is deficient in that it does not provide adequate information in relation to: (i) the quantification and assessment of greenhouse gas emissions arising from the proposed development; (ii) the likely significant effects of the proposed development on climate, and; (iii) the assessment of reasonable alternatives having regard to environmental effects, including climate change. In the absence of such information, the Board cannot carry out a lawful environmental impact assessment or reach a reasoned conclusion on the likely significant effects of the proposed development on

the environment. The proposed development would therefore be contrary to the requirements of the EIA Directive and to the proper planning and sustainable development of the area.

Signed:

Brendan Buck

BPS Planning Consultants LTD
Members of the Irish Planning Institute
24 April 2026

Appendices:

- The Athenry Peaker Plant Concern Group's accompanying submission.
- Legal submission from Fred Logue of FP Logue LLP.
- Cillín Environmental – 'Considerations of Planning Application 324113 to An Coimisiun Pleanála for the Development of an Open Cycle Peaker Plant & 220 kV Sub-Station at Rathmorrissy Athenry, Co. Galway & Connection to 220kV Sub-Station at Cashla by Bord Gáis Energy'.

ATHENRY
Peaker Plant
Concern Group

FORMAL SUBMISSION / OBJECTION TO AN COIMISIÚN PLEANÁLA

Re: Strategic Infrastructure Development Application

ACP CASE REFERENCE NO: 324113

Cashla Peaker Plant Development located in Pollnagroagh and Rathmorrissy, Athenry, Co. Galway.

{Construction of an OCGT power plant Above Ground Installation and ancillary development}

Submitted by:
Athenry Peaker Plant Concern Group,

c/o Chair, Oliver Freeney, Castlelambert, Athenry, Co. Galway, H65RX77

Date: 24th April 2026

SUBMISSION OVERVIEW

Introduction and Statement of Concerns

This submission is made by the Athenry Peaker Plant Concern Group on behalf of residents in the Athenry area in respect of the proposed Strategic Infrastructure Development application **(ACP Ref: 324113) for the Cashla Peaker Plant at Pollnagroagh and Rathmorrissy, Co. Galway.**

The proposed development comprises a large-scale fossil fuel electricity generation facility, including an open cycle gas turbine (OCGT) plant and generator with ancillary equipment including a 30m high stack as well as extensive associated industrial infrastructure, and connections to the national gas and electricity networks.

The Concern Group identifies serious and fundamental concerns regarding the proposed development, including:

- The adequacy, completeness and reliability of the Environmental Impact Assessment Report (EIAR)
- The failure to properly assess risks to human health, including sensitive populations
- The potential for significant adverse impacts on groundwater, air quality, and the wider environment
- The long-term climate implications of permitting fossil fuel infrastructure to 2050
- The unsuitability of the site in proximity to a growing residential and community area
- The incompatibility of the development with proper planning and sustainable development
- A fragmented project and consenting approach, whereby interdependent elements of the development — including gas infrastructure, grid connection and associated works — are subject to separate consent processes, thereby preventing a complete, integrated and lawful assessment of the project as a whole and its cumulative and in-combination environmental effects.

Structure of Submission

This submission is presented as a single, integrated package comprising the following:

Athenry Peaker Plant Concern Group Submission

This document sets out the principal grounds of objection, structured under key planning, environmental, and legal headings. It identifies critical concerns relating to:

- Environmental Impact Assessment deficiencies
- Human health impacts
- Hydrogeology and water protection
- Air quality and emissions
- Climate compliance
- Landscape and visual impact
- Site suitability and land-use conflict

Basis of Submission – Core Concerns

This submission is based on a detailed review of:

- The Environmental Impact Assessment Report (EIAR)
- Natura Impact Statement (NIS)
- Planning Statement and supporting documentation
- Relevant national and European planning, environmental, and climate law

Based on this review, it is submitted that the proposed development gives rise to the following critical concerns:

- Non-compliance with the Environmental Impact Assessment Directive, including failure to provide a complete and reliable assessment of environmental effects
- Failure to demonstrate proper planning and sustainable development
- Significant risks to human health, particularly through air quality impacts and inadequate assessment of sensitive receptors
- Unacceptable risks to groundwater and water quality, with insufficient protection measures

- Inadequate and unreliable EIAR, including inconsistencies, omissions, and lack of transparency
- A fragmented and piecemeal consenting strategy, preventing a lawful and cumulative assessment of impacts

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Conclusion and Overarching Concern

For the reasons set out in this submission and the accompanying expert reports, it is the position of the Athenry Peaker Plant Concern Group that the application is materially deficient.

The information provided does not allow An Coimisiún Pleanála to be satisfied that:

- The proposed development would not give rise to significant adverse environmental or human health effects, or
- The development complies with the requirements of proper planning and sustainable development

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1. Introduction

We, the Athenry Peaker Plant Concern Group, comprising residents and stakeholders, submit this formal objection to the proposed Cashla Peaker Plant development located in Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway.

This submission has been prepared following a detailed review of the Environmental Impact Assessment Report (EIAR), including the Non-Technical Summary, technical appendices, and supporting documentation, together with relevant national and European planning, environmental, and climate policy frameworks. The Environmental Impact Assessment Report (EIAR) submitted with the application has been reviewed in detail, and significant deficiencies have been identified.

The proposed development raises **significant concerns** in relation to:

- Environmental protection
- Public health
- Climate policy compliance
- Proper planning and sustainable development

This submission sets out **detailed grounds of objection** under structured headings aligned with the EIAR and relevant planning considerations and is supported by independent technical and planning reports which should be read in conjunction with this document.

The proposed development gives rise to significant planning, environmental and human health issues, as set out in detail in this submission.

This submission also reflects the lived experience and concerns of residents in the Athenry area, who will be directly affected by the proposed development over its operational lifetime. The issues raised are not abstract or theoretical, but relate to the health, environment and quality of life of an established and growing community.

2. Executive Summary

The proposed development represents a large-scale industrial energy installation in a rural agricultural setting of high environmental sensitivity. It is submitted that the proposed development is not consistent with the proper planning and sustainable development of the area. The assessment presented in the EIAR is characterised by significant deficiencies in methodology, scope and evidential basis.

This submission identifies **fundamental deficiencies** in the Environmental Impact Assessment Report (EIAR), including failures in methodology, assessment scope, and compliance with European environmental law.

2.1 Key Grounds of Objection

The proposed development gives rise to the following principal grounds of objection:

- Conflict with national and EU climate obligations
- Failure to adequately assess reasonable alternatives, including site, technology and system-level options
- Significant risk to groundwater and water quality within a highly vulnerable karst environment
- Potential adverse impacts on air quality and human health, including sensitive receptors
- Industrialisation of a sensitive rural landscape and unacceptable visual intrusion
- Increased noise, traffic and environmental disturbance within a receptor-rich environment
- Major accident risk associated with gas infrastructure, including fire, explosion and contaminated firewater
- Failure to adequately assess cumulative and in-combination effects
- A fragmented project and consenting approach, whereby interdependent elements of the development — including gas infrastructure, grid connection and associated works — are advanced through separate processes, resulting in the absence of a complete and integrated assessment of the project as a whole and its cumulative and in-combination environmental effects
- Material inconsistencies and omissions within the EIAR

Across multiple environmental topics, the EIAR relies on assumed operational scenarios and mitigation measures rather than a robust worst-case assessment.

This approach undermines the reliability of the assessment and is not consistent with the requirements of the Environmental Impact Assessment Directive.

2.2 Climate and Policy Conflict

The proposed development facilitates the continued operation of fossil fuel infrastructure to at least 2050, which coincides with Ireland's legally binding objective to achieve a climate neutral economy under national and EU law.

In this context, the introduction of new long-term gas-fired generation infrastructure gives rise to a clear and unresolved conflict with statutory climate obligations and the required trajectory for greenhouse gas emissions reduction.

While national policy recognises a transitional role for gas in ensuring energy security, such policy support is conditional and does not provide a blanket justification for the establishment of new fossil fuel infrastructure, particularly where:

- The development is proposed to operate over a long-term horizon to 2050
- No clear pathway to decarbonisation has been demonstrated
- The risk of carbon lock-in has not been adequately assessed

The proposed development is materially inconsistent with the Galway County Development Plan 2022–2028, including policies relating to electricity infrastructure, environmental protection, biodiversity, water quality and residential amenity. These issues are examined in detail in Chapter 3.2 (Material Contravention of the Galway County Development Plan). These policies must be read collectively. The EIAR does not demonstrate that the proposed development can be accommodated without giving rise to significant environmental effects or conflict with these objectives.

In the absence of a clear, evidence-based demonstration of compatibility with climate obligations and Development Plan policy, it has not been established that the proposed development represents proper planning and sustainable development.

2.3 Environmental Sensitivity and Site Suitability

The proposed development is located within an environmentally sensitive receiving environment characterised by:

- Highly vulnerable **karst limestone geology**
- Direct hydrological connectivity to groundwater-dependent ecosystems
- Rural residential settlement and agricultural land use
- Proximity to schools, sports facilities, and community infrastructure
- A low-lying, open landscape with limited capacity to absorb large-scale industrial development

Karst environments are inherently complex and unpredictable, with rapid and direct pathways between surface and groundwater. This significantly increases the risk associated with any potential contamination event and requires a precautionary approach.

In this context, the siting of a large-scale fossil fuel electricity generation facility, including gas infrastructure and significant fuel storage, gives rise to **heightened environmental risk**.

The EIAR does not provide sufficient certainty regarding:

- Groundwater flow pathways and connectivity
- The potential for contaminant transport in a karst system
- The effectiveness of proposed mitigation measures in a worst-case scenario

In addition, the site is in proximity to a **receptor-rich environment**, including residential dwellings, schools, and recreational facilities. This increases the sensitivity of the receiving environment and the potential significance of any adverse effects.

The combination of:

- High environmental vulnerability
- Sensitive receptors
- Long-term industrial activity

renders the site inherently unsuitable for the proposed development. These issues are examined in detail in Chapter 3.7 (Water Environment & Hydrogeology) and Chapter 3.5 (Population & Human Health).

The EIAR does not demonstrate that the proposed development can be accommodated at this location without giving rise to significant environmental effects.

2.4 Overall Assessment and Residual Uncertainty

Having regard to the foregoing, it is submitted that the proposed development has not been demonstrated to be capable of being accommodated within the receiving environment without giving rise to significant adverse effects.

Across multiple environmental topics, including groundwater, air quality, human health, climate, and cumulative impacts, the assessment presented in the EIAR is characterised by:

- Incomplete baseline information
- Reliance on assumed operational scenarios
- Lack of robust worst-case analysis
- Dependence on mitigation measures to avoid significant effects

In this context, the EIAR does not provide **complete, precise and definitive findings** capable of removing reasonable scientific doubt regarding the absence of significant adverse impacts.

Furthermore, the cumulative effect of:

- A highly sensitive receiving environment

- Proximity to multiple sensitive receptors
- Long-term operation of fossil fuel infrastructure

gives rise to a level of environmental risk that has not been adequately assessed or mitigated.

The applicant has not discharged the burden of proof required to demonstrate that the proposed development would not give rise to significant adverse environmental effects or that it is compatible with the requirements of proper planning and sustainable development.

In these circumstances, the Board cannot be satisfied that the proposed development would not give rise to significant adverse effects.

2.5 Conclusion and Request

Having regard to the deficiencies identified in the EIAR, the sensitivity of the receiving environment, and the failure to demonstrate compliance with statutory planning, environmental and climate obligations, it is submitted that the proposed development does not represent proper planning and sustainable development.

In particular, the applicant has not demonstrated, based on complete, precise and definitive information, that the proposed development would not give rise to significant adverse environmental effects.

In circumstances where:

- Significant uncertainty remains
- Environmental effects have not been adequately assessed
- Compliance with statutory obligations has not been established
- The suitability of the site has not been demonstrated

An Coimisiún Pleanála cannot be satisfied that the proposed development would be acceptable. Accordingly, permission must be refused.

3. Grounds of Objection

3.1 Introduction to Grounds of Objection

This chapter sets out the principal grounds of objection to the proposed development, having regard to the Environmental Impact Assessment Report (EIAR), supporting documentation, and relevant national and European planning, environmental and climate law.

The following sections identify **significant deficiencies** in the assessment of the proposed development across multiple environmental topics, including:

- Climate and policy compliance
- Consideration of reasonable alternatives
- Population and human health
- Air quality
- Water environment and hydrogeology
- Landscape and visual impact
- Noise, traffic and general amenity
- Cumulative and in-combination effects

In each case, it is submitted that the EIAR fails to provide a **complete, precise and definitive assessment** of likely environmental effects.

Across multiple disciplines, the assessment is characterised by:

- Incomplete baseline data
- Reliance on assumptions rather than demonstrated evidence
- Absence of robust worst-case scenario analysis
- Dependence on mitigation measures to avoid significant effects

This approach is not consistent with the requirements of the Environmental Impact Assessment Directive, which requires that the likely significant effects of a project be fully identified, described and assessed prior to the grant of consent.

Accordingly, the EIAR does not provide a reliable or sufficient basis upon which the competent authority can carry out a lawful assessment of the proposed development.

In addition, the proposed development is advanced through several separate but interrelated consent processes, including gas infrastructure, grid connection and associated works. This approach results in a degree of project fragmentation which limits transparency and constrains the ability to undertake a comprehensive assessment of cumulative and in-combination effects, contrary to the requirements of the EIA Directive and established case law.

The level of public engagement associated with the proposed development is also notable. A dataset comprising 1,056 submissions (as of 23rd April 2026) has been compiled (see Appendix A), indicating a high level of concern within the receiving environment. The issues raised are consistent with those identified throughout this submission, including concerns relating to environmental risk, human health, climate policy and the suitability of the site.

In summary, while Chapter 1 of the EIAR provides an overview of policy context and methodology, it does not satisfy the requirement to demonstrate that the proposed development represents proper planning and sustainable development. The reliance on high-level policy, in the absence of a robust site-specific justification, together with the issues identified in relation to need (Chapter 5, Policy, Climate Law and Legal Compliance), climate alignment and cumulative assessment, materially undermines the adequacy and reliability of the EIAR.

These issues should be read cumulatively and in conjunction with one another. Where deficiencies arise across multiple environmental topics, the reliability of the EIAR as a whole is materially undermined.

The interactions matrix presented in the EIAR is qualitative in nature and does not provide a robust or quantitative assessment of combined environmental effects. There is no clear methodology demonstrating how interactions between impacts — including traffic, noise, air emissions and visual effects — have been assessed in combination. As a result, the EIAR does not adequately represent the cumulative burden on the receiving environment.

The EIAR places reliance on future regulation through the Environmental Protection Agency (EPA) to control emissions and environmental performance. However, regulatory oversight is inherently reactive and dependent on monitoring, reporting and enforcement. It does not eliminate environmental risk nor guarantee that operational impacts will align with modelled outcomes. In these circumstances, reliance on EPA licensing cannot substitute for a robust and precautionary environmental assessment at planning stage.

3.2 Material Contravention of the Galway County Development Plan

The proposed development materially contravenes the Galway County Development Plan 2022–2028.

The Development Plan forms the statutory framework for assessing proper planning and sustainable development. While certain policies support infrastructure provision, these must be read in conjunction with environmental protection, residential amenity, and landscape objectives.

In this case, the proposed development gives rise to clear and material contravention of multiple Development Plan policies

Policy G1 – Electricity Infrastructure

Policy G1 supports the enhancement of electricity infrastructure subject to environmental, landscape and residential amenity considerations.

The proposed development gives rise to significant adverse impacts on residential amenity, landscape character, human health and environmental quality. The EIAR does not demonstrate that these impacts can be avoided or mitigated.

The proposal therefore fails to satisfy the requirements of Policy G1.

Policy EL1 – Key Employment Locations

Policy EL1 requires that development is compatible with the protection and enhancement of the environment and cultural resources.

The introduction of a large-scale industrial energy facility into a rural agricultural landscape represents a fundamental conflict with the receiving environment.

The proposal is therefore contrary to Policy EL1.

Policy EL2 – Strategic Economic Corridor

Policy EL2 supports the Oranmore–Athenry Strategic Economic Corridor as a location for strategic infrastructure. However, this policy does not override the requirement to demonstrate proper planning and environmental acceptability at a site-specific level.

In this case, the proposed development fails to demonstrate that it can be accommodated without giving rise to significant adverse environmental effects.

Accordingly, reliance on Policy EL2 does not justify the proposed development.

Policy NHB5 – Natural Heritage and Biodiversity

Policy NHB5 seeks to protect ecological networks and maintain ecological connectivity.

The EIAR does not adequately assess ecological corridors or demonstrate that connectivity can be maintained post-development.

The proposal is therefore contrary to Policy NHB5.

Policies NR1, NR3 and NNR2 – Roads and Traffic

These policies seek to protect the safety, function and capacity of national, regional and local roads and require robust traffic assessment.

The proposed development generates significant traffic volumes, including HGV movements, and the EIAR does not demonstrate that the receiving road network can safely accommodate this traffic.

The proposal is therefore contrary to Policies NR1, NR3 and NNR2.

Core Strategy

The Core Strategy requires that development is compatible with the receiving environment and represents proper planning and sustainable development.

The proposal introduces a large-scale industrial use into an unzoned rural area characterised by agricultural land use and dispersed residential settlement.

This represents a fundamental land-use conflict and is contrary to the Core Strategy.

Policies WQ1 and WQ3 – Water Protection

Policies WQ1 and WQ3 require the protection of water quality and groundwater resources, particularly in vulnerable environments.

The site is located within a karst limestone environment with high groundwater vulnerability, and the EIAR does not demonstrate that contamination risks can be avoided.

The proposal is therefore contrary to Policies WQ1 and WQ3.

DM Standard 5 – Residential Amenity

DM Standard 5 requires that development does not adversely affect residential amenity.

The proposed development gives rise to impacts including noise, visual intrusion, air emissions and traffic disturbance.

The proposal is therefore contrary to DM Standard 5.

In circumstances where a proposed development materially contravenes the Development Plan and gives rise to significant environmental impacts and uncertainty, **the Board cannot be satisfied that it represents proper planning and sustainable development.**

3.3 Project Description, Scale and Operational Uncertainty

Chapter 2 of the EIAR sets out the description of the proposed development. While this provides a detailed technical overview, it does not adequately address the physical scale, operational uncertainty and long-term environmental implications of the development at this specific location. These deficiencies have direct implications for the assessment of environmental effects and the determination of proper planning and sustainable development.

3.3.1 Scale and Nature of the Development

The proposed development comprises a large-scale industrial energy installation, including turbine buildings, ancillary plant structures, cooling systems, control buildings, yard areas and associated infrastructure.

The development includes a stack of significant height (approximately 30 metres), a telecommunications mast of 36m together with large industrial buildings and plant equipment of substantial scale and massing. The overall development footprint represents a significant industrial presence within a rural agricultural setting.

The scale, form and industrial character of the development are not reflective of the receiving environment, which is defined by dispersed residential settlement, agricultural land use and rural amenity.

The introduction of this level of infrastructure represents a significant and incompatible change in land use and landscape character and is not consistent with the established pattern of development in the area. This raises serious concerns regarding the suitability of the proposed development in this location.

3.3.2 Operational Characteristics

The development is described as a “peaker plant”, intended to operate intermittently during periods of high electricity demand.

However, the operation of the plant is inherently demand-driven and dependent on system conditions. There is no guarantee that operation will be limited in frequency or duration.

In the context of increasing electricity demand, including demand from large energy users, there is potential for more frequent and prolonged operation than suggested.

This uncertainty is not adequately addressed in the EIAR and undermines the reliability of the environmental assessment, which is based on assumed operational scenarios. This has direct implications for the assessment of noise, air emissions and cumulative impacts.

3.3.3 Lifespan and Long-Term Implications

The proposed development has an operational lifespan extending to 2050.

This represents a long-term commitment to fossil fuel infrastructure at a time when national and EU policy is focused on rapid decarbonisation of the energy system.

The EIAR does not adequately assess the implications of this long operational timeframe, including the risk of fossil fuel lock-in and the compatibility of the development with long-term climate objectives.

This raises serious concerns regarding consistency with national climate policy and long-term planning objectives. This issue is further addressed in Chapter 4 (Policy, Climate Law and Legal Compliance) of this submission.

3.3.4 Fuel Use and Emissions

The development is primarily gas-fired but also provides for the use of backup fuels, including diesel.

This introduces additional environmental risk, particularly in relation to emissions, fuel storage and the potential for accidental release.

There is uncertainty regarding the frequency and duration of operation on different fuel types over the lifetime of the development, particularly in circumstances where system demand may increase.

This uncertainty is not fully addressed within the EIAR and has direct implications for air quality, climate impact and environmental risk. As a result, the potential for adverse environmental effects cannot be fully assessed.

3.3.5 Associated Infrastructure and Project Fragmentation

The proposed development forms part of a wider infrastructure network, including gas supply infrastructure and grid connection works, which are subject to separate consenting processes.

This includes connection to the existing gas transmission network and high-voltage electricity infrastructure, both of which extend beyond the immediate site.

This fragmented approach reduces transparency and limits the ability to fully assess cumulative and in-combination effects.

In these circumstances, the competent authority is not provided with a single, coherent assessment of the full extent and impact of the development, thereby undermining the integrity of the Environmental Impact Assessment process.

The separation of gas, grid and generation infrastructure into multiple consent processes gives rise to project fragmentation.

In O'Grianna v An Bord Pleanála, it was held that such fragmentation is not permissible where it prevents a full assessment of environmental effects.

Accordingly, the EIAR does not provide a complete, integrated or reliable basis upon which the competent authority can carry out a lawful assessment of the proposed development.

3.3.6 Conclusion on Project Description

While Chapter 2 of the EIAR provides a detailed description of the proposed development, it does not adequately address key issues relating to scale, operational uncertainty, long-term implications and project fragmentation.

In particular, the introduction of large-scale industrial infrastructure, including high vertical elements such as the stack and extensive plant structures, represents a significant and incompatible change to a rural receiving environment.

These deficiencies undermine the reliability of the environmental assessment and raise significant concerns regarding the suitability of the proposed development in this location.

The issues identified in this section should be read in conjunction with Chapter 3.4 (Alternatives assessment) and Chapter 4 (Policy, Climate Law and Legal Compliance).

In these circumstances, the EIAR does not provide a reliable or complete description of the proposed development, and the Board cannot be satisfied that the likely significant effects have been fully identified or assessed.

3.4 Alternatives assessment

The EIAR does not provide a robust, transparent or comprehensive assessment of reasonable alternatives and, accordingly, fails to demonstrate compliance with Article 5(1)(d) of the Environmental Impact Assessment Directive.

The identification of broad zones rather than specific sites, the reliance on infrastructure-led selection, the exclusion of locations based primarily on proximity to infrastructure, and the inconsistent application of environmental criteria collectively demonstrate that the alternatives assessment is fundamentally deficient. Environmental constraints such as limestone geology, groundwater vulnerability, proximity to receptors and COMAH risk were used to exclude alternative sites but are also present at the selected site, without equivalent weight being applied. In these circumstances, it has not been demonstrated that the proposed development represents the most appropriate or least environmentally impactful solution.

3.4.1 Site Selection

The site selection process is primarily infrastructure-led, with emphasis placed on proximity to existing gas pipelines and electricity grid infrastructure rather than environmental suitability or proper planning considerations. The EIAR confirms that site selection was constrained to areas in the vicinity of the existing Mayo–Galway gas pipeline and the 220kV Cashla substation, and that the selected site was chosen due to the intersection of these networks.

To identify a suitable location, the EIAR defines four broad zones east of Galway City:

- North of Carrowmoneash (Station Road, N67)
- Carnmore / Lissarulla area (north of the M6 extending west to Cashla)
- Grange East (east of Ballymoneen / Claregalway area)
- Along the M6 corridor (north-east of Derrydonnell North to the M6/M18 interchange)

However, the EIAR does not present a detailed assessment of specific alternative sites within these zones. No structured comparison, ranking or scoring of individual sites is provided, and no clear or transparent methodology is outlined for how sites were identified, assessed or eliminated.

As a result, site selection appears to have been driven primarily by infrastructure convenience rather than environmental or planning suitability. Proximity to existing gas and electricity infrastructure may inform site selection but does not establish the suitability of a site for large-scale industrial development.

This approach gives rise to a constrained and potentially pre-determined site selection process, in which environmental considerations are secondary to infrastructure availability. In the absence of a transparent, evidence-based and comparative assessment of alternative sites, it is not possible to conclude that the selected site represents the most appropriate location.

A review of historical aerial imagery (Appendix E) indicates that the site has undergone progressive land modification over a relatively recent period. This introduces additional uncertainty in relation to baseline environmental conditions and further reinforces the need for a robust and transparent alternatives assessment.

In these circumstances, the EIAR does not demonstrate that site selection was carried out in a manner consistent with the requirements of the Environmental Impact Assessment Directive.

3.4.2 Basis for Exclusion of Alternative Sites

The EIAR indicates that alternative locations were excluded based on environmental, planning and infrastructural constraints. These include:

- Proximity to European (Natura 2000) sites
- Archaeological sensitivity
- Presence of limestone pavement
- Ecological and landscape sensitivity
- Proximity to existing industrial or COMAH-designated facilities
- Distance from existing gas and grid infrastructure

However, the assessment demonstrates that proximity to infrastructure was the overriding and determinative factor in the exclusion of alternative sites. Locations situated further from existing gas pipelines or electricity infrastructure were effectively screened out at an early stage, irrespective of their environmental suitability or planning merits.

This approach introduces a clear methodological bias into the site selection process. By prioritising infrastructural convenience over environmental protection and proper planning considerations, the range of alternatives considered was artificially constrained from the outset.

As a result, the assessment is not a genuine evaluation of reasonable alternatives, but rather a constrained exercise within a predefined infrastructure corridor. This materially limits the scope of the assessment and undermines its objectivity, as potentially more suitable sites may have been excluded without adequate consideration.

In these circumstances, the EIAR does not demonstrate that alternative sites were assessed on a fair, consistent or transparent basis, nor that the selected site represents the most appropriate location from an environmental or planning perspective.

3.4.3 Inconsistent Application of Environmental Criteria

While environmental constraints were cited as a basis for excluding alternative sites, comparable or equivalent constraints are present at the proposed Rathmorrissy site.

In particular:

- The proposed site is located within a karst limestone environment, characterised by high groundwater vulnerability and rapid subsurface flow pathways
- The surrounding area comprises rural residential receptors and agricultural land uses, indicating sensitivity to environmental disturbance
- The development introduces a COMAH-classified installation, giving rise to risks associated with hazardous materials
- The site is located within a rural landscape of high amenity value, with limited existing industrial development

These constraints are directly comparable to those used to exclude alternative sites, including limestone-related sensitivity, environmental designation and proximity to sensitive receptors.

However, the EIAR does not demonstrate that these constraints have been afforded equal or equivalent weight in the assessment of the proposed site. There is no transparent or consistent methodology presented to explain how environmental criteria were applied across alternative locations or how competing constraints were balanced.

This indicates that environmental criteria have been applied inconsistently and selectively within the site selection process. Constraints which were treated as determinative in excluding alternative sites do not appear to have been applied with the same level of scrutiny to the selected site.

In effect, this gives rise to a situation where the proposed site is subject to a lower threshold of environmental acceptability than alternative locations. Such an approach is not consistent with a fair, objective or evidence-based assessment of reasonable alternatives.

The planning history of the Cashla area clearly demonstrates the presence of long-standing environmental constraints at this location. Previous planning proposals, including Galway County Council Planning Ref. 09/303, identified environmental sensitivities and constraints affecting the area. These constraints are directly comparable to those relied upon to exclude alternative sites. However, the EIAR does not demonstrate that such constraints have been afforded equivalent weight in the assessment of the proposed site. This demonstrates a notable lack of uniformity in the implementation of environmental criteria. In these circumstances, the EIAR does not demonstrate that environmental considerations have been applied in a consistent, transparent or rational manner across all potential sites. This materially undermines the credibility of the alternatives assessment and further supports the conclusion that the process was constrained and infrastructure-led rather than environmentally led.

Accordingly, it has not been demonstrated that the selected site represents the most appropriate or least environmentally impactful option.

3.4.4 Incomplete Assessment of Alternative Sites

The assessment of alternative sites is incomplete and lacks transparency.

There is no evidence of a national or regional-level site selection exercise, nor is there a clear or structured methodology outlining how alternative sites were identified, assessed or eliminated. The EIAR does not provide a clear audit trail for site selection and does not include any detailed comparative analysis between potential locations.

In particular, the assessment fails to identify specific candidate sites within the defined zones and does not provide any meaningful evaluation of their relative environmental, planning or technical merits. There is no comparative matrix, ranking system or reasoned justification explaining why particular sites were discounted or why the selected site was preferred.

This absence of a structured and evidence-based assessment prevents any independent verification of the site selection process. It is not possible to determine whether alternative sites were assessed on an equal basis, or whether potentially more suitable locations were prematurely excluded.

The lack of transparency and absence of a clear audit trail give rise to significant concerns regarding the objectivity and robustness of the assessment. In effect, the EIAR does not demonstrate that a genuine consideration of reasonable alternatives has taken place.

In these circumstances, the competent authority is not provided with sufficient information to enable a fully informed assessment of alternative sites or to determine whether the proposed location represents the most appropriate option.

This represents a material deficiency in the EIAR and is not consistent with the requirements of the Environmental Impact Assessment Directive, which requires a clear and reasoned comparison of reasonable alternatives.

3.4.5 Technology and System Alternatives

The EIAR does not adequately consider alternative technologies or system solutions capable of providing flexibility within the electricity system.

The assessment is largely confined to variations of gas-fired generation and does not reflect the full range of available alternatives. There is limited or no meaningful evaluation of:

- Energy storage solutions, including battery storage and other emerging technologies
- Demand-side response and load management measures
- Grid reinforcement and enhanced interconnection
- Renewable-led system solutions capable of meeting peak demand

These alternatives are increasingly recognised as critical components of modern electricity systems and are central to national and European energy and climate policy. However, the EIAR does not provide any substantive analysis of their technical feasibility, environmental implications or potential to meet the stated need for the proposed development.

The absence of such assessment represents a significant omission. The consideration of reasonable alternatives under the Environmental Impact Assessment Directive is not limited to variations of the proposed technology but extends to fundamentally different approaches capable of achieving the same objective.

By confining the assessment to gas-based solutions, the EIAR adopts a narrow and pre-determined approach which excludes potentially lower-impact and lower-carbon alternatives from consideration.

In addition, the EIAR does not provide any comparative analysis between the proposed Open Cycle Gas Turbine (OCGT) technology and more efficient alternatives, such as Combined Cycle Gas Turbine (CCGT). No assessment is provided in relation to differences in efficiency, emissions or overall environmental performance.

The issue of technology selection was identified at pre-planning stage, where queries were raised regarding the choice of OCGT technology in place of more efficient alternatives, including CCGT, and the implications of this choice in the context of climate policy. It is also noted that this issue was raised during Section 37B pre-application consultations with An Coimisiún Pleanála, including meetings held on 20 January 2025 and 28 May 2025, where the appropriateness of the proposed technology and the consideration of more efficient alternatives were expressly queried.

This is particularly significant given that the choice of technology was identified as a material issue at pre-application stage. The failure to address this issue within the EIAR indicates that a key aspect of the alternatives assessment has not been adequately examined.

In circumstances where a material issue is identified at pre-application stage but not subsequently addressed within the EIAR, this indicates that the Applicant was on notice of the need to justify the selected technology but has failed to do so.

In these circumstances, the EIAR does not demonstrate that the proposed technology represents the most appropriate or least environmentally impactful solution. The assessment of technological and system alternatives is incomplete, lacks transparency and is not consistent with the requirements of the Environmental Impact Assessment Directive.

3.4.6 Do-Nothing Scenario

The “do-nothing” scenario is addressed in a limited and largely policy-led manner and does not provide a robust or evidence-based assessment of how electricity demand could be met in the absence of the proposed development.

The EIAR does not undertake any meaningful evaluation of alternative system responses, including the potential role of renewable energy generation, energy storage, demand-side management or grid-based solutions. There is no analysis of how these measures, either individually or in combination, could contribute to meeting peak demand or enhancing system resilience.

Instead, the assessment assumes the necessity of the proposed development without critically examining whether the identified need could be addressed through alternative means. This approach does not constitute a genuine "do-nothing" scenario, but rather a continuation of the preferred project pathway.

The purpose of the do-nothing scenario is to provide a baseline against which the environmental effects of the proposed development can be properly understood, and to assess whether the development is necessary in the context of reasonable alternatives. In the absence of a substantive assessment, this function is not fulfilled.

Accordingly, the EIAR does not provide a meaningful or objective evaluation of the do-nothing scenario and fails to demonstrate that the proposed development is the most appropriate response to the identified need.

This represents a further deficiency in the assessment of alternatives and is not consistent with the requirements of the Environmental Impact Assessment Directive.

3.4.7 Conclusion on Alternatives

The EIAR does not provide a robust, transparent or comprehensive assessment of reasonable alternatives.

The identification of broad zones rather than specific sites, the reliance on infrastructure-led site selection, the exclusion of locations based primarily on proximity to infrastructure, and the inconsistent application of environmental criteria collectively demonstrate that the alternatives assessment is fundamentally deficient.

The assessment of alternative sites is incomplete and lacks transparency, with no clear methodology, no comparative analysis and no verifiable audit trail. The assessment of technological and system alternatives is similarly inadequate, being confined largely to gas-based solutions and failing to consider the full range of available lower-impact alternatives. The "do-nothing" scenario is not meaningfully assessed and does not provide a credible baseline against which the necessity of the proposed development can be evaluated.

These deficiencies are not procedural or minor in nature. The assessment of reasonable alternatives is a core requirement of the Environmental Impact Assessment process and is essential to ensuring that the least environmentally damaging option is identified and assessed.

In this regard, the Court of Justice of the European Union has confirmed in cases such as ***Holohan v An Bord Pleanála*** and ***Commission v Ireland*** that the assessment of alternatives must be sufficiently detailed, reasoned and evidence-based to enable the competent authority to carry out a fully informed assessment of environmental effects.

In the absence of a transparent, comparative and evidence-based assessment of alternative sites, technologies and system solutions, the EIAR does not comply with Article 5(1)(d) of the Environmental Impact Assessment Directive.

The planning history of the Cashla (Athenry) area, including Galway County Council Planning Ref. 09/303, further highlights long-standing environmental constraints at this location. In this context, the failure to undertake a robust and transparent assessment of alternative sites is particularly significant, as it has not been demonstrated that these known constraints have been appropriately avoided or mitigated through site selection.

Accordingly, it has not been demonstrated that the proposed development represents the most appropriate or least environmentally impactful solution. This represents a fundamental and material deficiency in the EIAR and significantly undermines the ability of the competent authority to carry out a lawful environmental assessment.

3.5 Population & Human Health

The assessment of population and human health within the EIAR is not sufficiently robust and does not provide a comprehensive or integrated evaluation of potential impacts arising from the proposed development. The approach adopted relies heavily on conclusions drawn from other environmental topics without constituting an independent or integrated assessment of human health effects.

This is inconsistent with the requirements of the Environmental Impact Assessment Directive, which requires the direct and indirect effects of a project on population and human health to be identified, described and assessed in a clear, coherent and integrated manner.

The EIAR fails to adequately assess the combined and cumulative effects of multiple environmental stressors — including air emissions, noise, traffic and potential accident risk — which are considered in isolation within separate technical chapters without meaningful evaluation of how they interact or affect the receiving population.

The assessment is further undermined by reliance on uncertain operational assumptions, including limited plant operation, without adequately considering the potential for increased frequency or duration of operation over the 25-year lifespan to 2050. In these circumstances, the EIAR does not provide a complete, precise and definitive assessment of likely significant effects on population and human health, as required under the EIA Directive and confirmed in *Holohan v An Bord Pleanála*.

3.5.1 Absence of Direct Health Impact Assessment

The EIAR does not include a standalone or dedicated Health Impact Assessment and therefore does not provide a comprehensive evaluation of the potential effects of the proposed development on population and human health.

The assessment of human health within the EIAR is derived from conclusions presented in separate environmental chapters — air quality, noise, traffic and climate — without being brought together to evaluate their combined effects on health. This fragmented approach does not reflect real-world exposure conditions, where receptors are subject to multiple environmental stressors simultaneously.

The NTS (Chapter 4) acknowledges that significant adverse impacts are anticipated during construction in relation to disruption to access for residents, businesses and community assets, including Lisheenkyle National School (NTS 4.1.1). Despite this acknowledgement, no integrated health impact assessment is provided that consolidates these construction-phase effects with the long-term operational exposure risks.

Key issues not addressed in the EIAR include:

- Long-term exposure to combustion-related air pollutants over the operational lifespan to 2050

- Vulnerability of sensitive population groups including children, older persons and those with pre-existing conditions
- Indirect health effects including psychosocial impacts from proximity to a COMAH-classified industrial facility
- Indoor air quality and the contribution of external pollutant infiltration to sustained domestic exposure
- Combined health burden from simultaneous exposure to air emissions, noise, lighting and traffic over the lifetime of the development

In *Holohan v An Bord Pleanála*, the Court confirmed that human health must be assessed as an integral component of environmental assessment, including direct, indirect and cumulative effects. The absence of a standalone and integrated health assessment represents a clear failure to comply with this requirement.

3.5.2 Exposure Pathways

The proposed development gives rise to multiple potential exposure pathways for the surrounding population:

- Air emissions from gas and diesel combustion, including nitrogen oxides (NO_x), particulate matter ($PM_{2.5}$, PM_{10}) and carbon monoxide (CO)
- Noise and vibration from operational, start-up and emergency scenarios
- Potential groundwater contamination within a highly vulnerable karst limestone environment serving private domestic and agricultural water supplies
- Risk of accidental events at a COMAH-classified installation, including fire, explosion and release of hazardous substances (see Section 3.5.6 and Section 3.7)
- Artificial lighting disrupting sleep and nocturnal amenity for nearby residents
- Traffic-related impacts during construction, including road closures affecting access to residential properties and community facilities (NTS 4.1.1, 10.2.1)

Air emissions represent the primary long-term exposure pathway. The NTS (Section 7.2.3) confirms that operational phase air dispersion modelling assessed NO_2, CO and SO_2 at residential receptors. However:

- Modelling assumed specific operational scenarios and does not assess a worst-case continuous operational profile
- The potential for short-term concentration spikes during start-up and shut-down phases — when emissions may be significantly elevated — is not assessed
- The NTS does not assess indoor air quality or the contribution of external pollutants infiltrating residential buildings, where most exposure time occurs

- Meteorological variability, including low wind speeds, temperature inversions and stable atmospheric conditions, can result in locally elevated ground-level concentrations not captured by average-based modelling
- The assessment does not consider prevailing wind direction and the potential for repeated exposure at specific downwind residential locations

The NTS (Section 12.1) confirms the presence of six private water abstractions for agricultural and domestic purposes within the study area, in an environment underlain by a Regionally Important Aquifer. The implications of a fuel spill or construction-phase contamination event for these private supplies are not assessed as a health exposure pathway.

Athenry Golf Club is identified in the EIAR as a community receptor approximately 2.8km from the site. It is not included in the air quality dispersion model, noise assessment, human health assessment or major accident assessment. This omission is significant: the golf course lies within the prevailing downwind direction under dominant south-westerly wind conditions and is an outdoor environment where users engage in sustained physical activity over several hours, resulting in elevated inhalation rates. The failure to assess this receptor represents a material gap.

3.5.3 Proximity to Residential Receptors and Vulnerable Groups

The surrounding area contains dispersed residential settlement, schools, sports facilities and other community infrastructure, all of which increase the sensitivity of the receiving environment. The study area applied within the EIAR — extending to approximately 500 metres from the site boundary — is unduly restrictive in the context of a rural landscape characterised by dispersed settlement patterns, where receptors are distributed across the wider landscape rather than concentrated in a compact settlement core.

Vulnerable population groups require specific consideration:

- Children have developing respiratory and immune systems, increased breathing rates relative to body size, greater susceptibility to air pollutants, and greater potential for long-term cumulative exposure
- Older persons and those with pre-existing respiratory or cardiovascular conditions are less resilient to repeated exposure events and more likely to experience adverse effects even within average-based modelled thresholds
- Residents proximate to the site are exposed simultaneously to air emissions, operational noise, artificial lighting, traffic disturbance and perceived safety risk from a COMAH-classified installation — none of these are assessed in combination

The NTS (Section 4.1.1) confirms that significant adverse construction-phase impacts are anticipated for residents along Lisheenkyle East Road and for Lisheenkyle National School. These effects are described as temporary and limited to the construction phase. However, no

assessment is provided of the transition from construction-phase disturbance to long-term operational exposure for the same residential and school receptors over a lifespan to 2050.

The EIAR does not specifically assess the likely effects on vulnerable groups, does not adopt a precautionary approach in circumstances of operational uncertainty, and does not evaluate real-world combined exposure. This is a material deficiency.

3.5.4 Sensitive Community Receptors – Schools and Sports Facilities

The following schools are located within approximately 2.5 to 3.5km of the proposed development:

- **Lisheenkyle National School** (approx. 2.81km) {Approx.250 students} — confirmed in the NTS (Section 4.1.1) as a community asset subject to significant adverse construction-phase impacts
- **Presentation College**, Athenry (approx. 2.52km) {Approx. 1100 students}
- **Clarin College** (approx. 3.13km) {Approx. 1100 students}
- **Gaelscoil Riada** (approx. 3.39km) {Approx 180 students}
- **Coláiste na hEachréidh** (approx. 3.46km) {Approx 260 students}
- **Athenry Primary School** (approx. 3.49km) {Approx 520 students}

The following recreational and sporting facilities are within the wider receiving environment:

- **Athenry Athletic Club** (approx. 1.7km) Approx. 1000 members
- **Athenry Football Club** (approx. 2.26km) Approx. 800 members
- **Carnaun GAA Sports complex** (approx. 2.69km) Approx. 800 members
- **Raheen Sports complex** (approx. 2.80km) Approx. 1000 members
- **Athenry Golf Club** (approx. 2.8km) — Approx. 1050 members

These receptors share common characteristics that increase their sensitivity and the importance of adequate assessment:

- Regularly occupied for extended periods by children, young people and community members
- Locations of outdoor activity and physical exertion, which increases inhalation rates and therefore exposure to air pollutants
- Subject simultaneously to air quality, noise, visual intrusion, lighting and traffic impacts, none of which are assessed in combination

The NTS (Section 4.1.1) acknowledges that the cable installation and associated road closures will have a significant adverse impact on Lisheenkyle National School during construction. No assessment is provided of the long-term operational effects on this or any other school receptor. The EIAR does not provide an adequate assessment of the impact of the proposed development on nearby schools and community facilities. The potential for cumulative and long-term impacts on children, young people and the wider community has been underestimated.

3.5.5 Cumulative and Long-Term Effects

Receptors are not exposed to environmental factors in isolation but to a combination of air emissions, noise, traffic, lighting, visual intrusion and perceived risk over extended periods. The EIAR does not provide a coherent evaluation of how these factors may interact or compound to affect population and human health over the operational lifespan to 2050.

Key cumulative and long-term concerns not addressed in the EIAR:

- The development operates as a peaker plant, producing intermittent emissions profiles with repeated start-up and shut-down cycles. These episodic concentration spikes may not be captured by average-based modelling but contribute to adverse health outcomes over time
- The NTS (Chapter 8) confirms the development will emit greenhouse gases and other pollutants throughout operation to 2050 with no site-specific monitoring required for climate (NTS 8.5). No assessment of long-term cumulative health burden from sustained exposure over 25 years is provided
- The NTS (Section 16.1) states that no cumulative effects with the wider Athenry Local Area Plan are anticipated. However, this does not address the cumulative health burden arising from simultaneous exposure to air emissions, noise and other stressors from the Peaker Plant itself, nor does it address the combined effect with the proposed Gannow Windfarm (Pl. Ref. 25/61412) on the same population
- Psychosocial impacts — including stress, anxiety and reduced quality of life arising from proximity to a large-scale COMAH-classified industrial installation — are not assessed, despite being recognised in environmental health literature as contributing to overall health and well-being
- The absence of a binding operational limit means that operation may be significantly more frequent than assessed, increasing cumulative exposure beyond modelled levels

In circumstances where uncertainty exists regarding cumulative and long-term impacts, a precautionary approach is required. The EIAR does not demonstrate that such an approach has been applied.

3.5.6 Uncertainty and Operational Assumptions

The assessment of population and human health is subject to significant uncertainty arising from reliance on assumed operational scenarios rather than clearly defined and enforceable parameters.

The EIAR presents the development as a peaker plant intended to operate intermittently. However:

- There is no binding limitation on the frequency, duration or intensity of plant operation
- Operation is inherently demand-driven and cannot be reliably predicted over a 25-year lifespan
- The NTS (Section 3.1.3.1) confirms a time-limited lifespan to 31 December 2050 — but does not limit annual operating hours
- The NTS (Section 7.2.3) models air quality assuming continuous 8,760-hour operation for dispersion modelling, while the climate chapter assumes approximately 100 hours per year for greenhouse gas calculation — these are fundamentally inconsistent assumptions producing a discrepancy of up to 40–50 times in emissions (see Section 3.6.7)
- The EIAR relies on future EPA Industrial Emissions Licence controls to guarantee compliance — such controls are reactive and cannot eliminate environmental risk or guarantee alignment with modelled predictions
- No robust worst-case operational scenario is assessed, including sustained or continuous operation, peak demand periods, or failure of mitigation systems

In circumstances where uncertainty regarding potential impacts on population and human health exists, the precautionary principle requires that the absence of adverse effects be demonstrated based on complete, precise and definitive findings. This standard has not been met.

3.5.7 Conclusion on Population and Human Health

The EIAR does not provide a comprehensive or reliable assessment of potential impacts on population and human health. The following deficiencies are material:

- No standalone Health Impact Assessment has been provided
- Environmental stressors are assessed in isolation without integrated evaluation of combined health effects
- Vulnerable population groups — children, older persons, those with pre-existing conditions — are not specifically assessed

- The study area of approximately 500m is unduly restrictive for a rural dispersed settlement pattern
- Sensitive receptors including Lisheenkyle National School, six schools within 3.5km, and five sports and recreational facilities are not adequately assessed
- Athenry Golf Club is excluded from the air quality model, noise assessment and major accident assessment despite lying in the prevailing downwind direction
- Cumulative and long-term health effects over the 25-year operational lifespan are not assessed
- Inconsistent operational assumptions across air quality and climate chapters undermine the reliability of the assessment (see Section 3.6.7)
- Psychosocial impacts from proximity to a COMAH-classified installation are not considered

The proposed development also gives rise to concerns in relation to compliance with DM Standard 5 (Residential Amenity) of the Galway County Development Plan 2022–2028, which requires that development does not adversely affect the amenity of adjoining properties or give rise to unacceptable impacts on existing communities. Having regard to the findings set out in this section, it has not been demonstrated that these requirements can be satisfied.

Accordingly, it cannot be concluded with confidence that the proposed development will not give rise to significant adverse effects on population and human health. The EIAR does not provide a complete, precise and definitive assessment of these effects as required under the EIA Directive.

3.6 Air Quality and Climate

The assessment of air quality and climate within the EIAR does not adequately address the full extent of emissions arising from the proposed development and does not demonstrate consistency with national and European climate policy. It is based on uncertain and internally inconsistent operational assumptions and does not sufficiently consider long-term or cumulative impacts.

In particular, the EIAR does not adequately assess emissions from all combustion sources associated with the development, and the climate and air quality chapters apply fundamentally different operational assumptions to the same combustion process. The EIAR does not provide a complete, precise and definitive assessment of likely significant effects on air quality and climate.

3.6.1 Air Emissions and Local Air Quality

The proposed development will give rise to air emissions from the combustion of natural gas and, as a backup fuel, low sulphur diesel. The NTS (Section 7.2.3) confirms that the operational air quality assessment evaluated NO_2, CO and SO_2 at residential receptors and concluded that concentrations comply with ambient air quality standards. The following concerns apply:

- The NTS (Section 2.2) confirms that the gas turbine will operate on low sulphur diesel as a backup fuel, with mandatory testing anticipated for up to 18 hours per annum under the EirGrid Grid Code. Diesel combustion produces higher emissions of NO_x and particulate matter than gas. The EIAR does not clearly assess the frequency or potential duration of diesel operation beyond mandatory testing, nor does it assess the cumulative health effect of repeated diesel start-up events on nearby receptors
- The NTS (Section 7.2.3) confirms that the operational assessment modelled one turbine on natural gas only. Emissions from diesel operation are described as assessed separately, but the health implications of diesel-specific pollutants — including ultrafine particulate matter — are not adequately addressed
- The EIAR does not adequately assess the potential for stack downwash effects that may result in elevated ground-level pollutant concentrations in the immediate vicinity of the site
- Meteorological conditions — including low wind speeds, temperature inversions and stable atmospheric conditions common in low-lying Galway landscapes — can limit dispersion and result in locally elevated concentrations at specific receptor locations not captured by average-based modelling
- The EIAR does not assess the potential for atmospheric deposition of pollutants on agricultural land, which is the primary land use surrounding the site
- Athenry Golf Club (approx. 2.8km) lies within the prevailing downwind direction under dominant south-westerly wind conditions and was not included in the air quality dispersion model. This represents a material omission for an outdoor recreational receptor subject to sustained physical activity and elevated inhalation rates

- The EIAR does not consider indoor exposure conditions. Individuals spend the majority of their time indoors, where external pollutants may infiltrate buildings and contribute to sustained exposure at residential receptor locations

The NTS (Section 7.1) states that baseline air quality in the vicinity of the project is good, with key pollutants well below applicable standards. This does not address the **cumulative effect** of adding a new emission source to an area that currently has low baseline pollutant concentrations — any addition represents a deterioration relative to baseline, which is not adequately assessed in the context of vulnerable receptors.

3.6.2 Operational Uncertainty and Emissions

The proposed development is described as a peaker plant, but its operation is inherently demand-driven and dependent on electricity system conditions. There is no binding limitation on the frequency or duration of plant operation.

- The NTS (Section 3.1.3.1) confirms that plant lifespan is limited to 31 December 2050 but does not limit annual operating hours
- The NTS (Section 8.2.2) states that the Proposed Project will provide 0.325 GW or 0.334 GW of flexible gas capacity — at full continuous operation, this output level would generate substantially higher emissions than those assessed under an assumed limited operational profile
- The EIAR does not assess a worst-case scenario involving sustained or continuous operation, including the potential for prolonged operation during periods of extended low renewable output, which is the very scenario the plant is designed to address
- Should electricity demand increase — including demand associated with data centres and large energy users — the plant may operate significantly more frequently than assumed, increasing emissions, noise and cumulative exposure beyond modelled levels
- The EIAR relies on future EPA Industrial Emissions Licence conditions to ensure compliance. Such controls are reactive and dependent on monitoring and enforcement. They do not eliminate environmental risk or guarantee alignment with modelled predictions

In the absence of a clearly defined operational envelope with enforceable limits on annual operating hours, the potential for adverse air quality impacts may be significantly underestimated.

3.6.3 Climate Impact and Policy Conflict

The proposed development has an operational lifespan extending to 31 December 2050. Under the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland is legally required to achieve climate neutrality by 2050. The European Climate Law establishes the same legally binding objective for the EU. The continued operation of new fossil fuel infrastructure over this entire timeframe raises fundamental questions regarding consistency with these obligations.

The Galway County Development Plan 2022–2028 supports the transition to a low-carbon economy and requires that development proposals align with national climate objectives. The NTS (Section 8.4) acknowledges that the residual GHG effect is direct, long-term, negative and slight. Even on the applicant's own assessment, the climate effect is negative and long-term. In the absence of a clear decarbonisation pathway, the introduction of fossil fuel infrastructure operating to 2050 is not consistent with these objectives.

3.6.4 Failure to Demonstrate Compatibility with Climate Neutrality

The proposed operational lifespan coincides with the statutory objective of achieving a climate neutral economy. It is not sufficient to rely on general policy support for flexible generation. The following must be clearly demonstrated:

- How the development's cumulative emissions over its lifetime are reconciled with Ireland's carbon budgets
- What enforceable operational or emissions limits apply to ensure consistency with the net-zero trajectory
- How the development would operate within a climate neutral framework if it is still operational in 2049 or 2050

The EIAR does not provide this assessment. The NTS (Section 8.2.2) states that GHG emissions are equivalent to 0.04% of Ireland's total 2024 emissions when annualised over the project lifespan. This calculation relies on the **assumption of approximately 100 hours** of operation per year. As demonstrated in Section 3.6.7 below, this assumption is internally inconsistent with the air quality chapter, which models continuous operation. In the absence of this assessment, it has not been demonstrated that the proposed development is consistent with national and EU climate law.

3.6.5 Reliance on Future Fuel Switching

The NTS (Section 8.6) refers to the potential for future use of biomethane as a fuel source and notes that GNI's strategy is to fully decarbonise the gas network by 2045. This is presented for information only and the EIAR explicitly states that the climate and air quality assessments have not relied on this material.

However, this speculative future fuel switching cannot be considered a valid or reliable mitigation measure:

- There is no binding commitment to switch fuels at any point during the operational lifespan
- The NTS (Section 3.1.3.4) confirms that HVO was rejected as a backup fuel due to limited availability and supply reliability concerns — the same supply uncertainty applies to biomethane
- No evidence is provided regarding the technical feasibility of conversion, the timeline for biomethane availability at the required scale, or the enforceability of any future transition commitment

- The NTS (Section 8.6) acknowledges that achieving the 2030 biomethane target represents only approximately 12% of projected networked gas — this does not support a reliable assumption of decarbonised fuel supply for this facility

3.6.6 Cumulative Climate Impact and Carbon Lock-In

The proposed development represents additional fossil fuel generation capacity within the national electricity system. The EIAR does not adequately assess:

- The risk of carbon lock-in, whereby the existence of long-term fossil fuel infrastructure committed to operation until 2050 delays or displaces investment in low-carbon alternatives
- The cumulative climate impact of introducing new gas-fired infrastructure alongside other existing or planned flexible generation developments
- The effect on Ireland's sectoral emissions ceiling for electricity, which the NTS (Section 8.1) confirms is 3 Mt CO_2e for 2030 — a 75% reduction requirement. The additive effect of the Peaker Plant on this ceiling is not assessed under a realistic operational scenario

3.6.7 Inconsistency in Operational Assumptions

The air quality and climate assessments within the EIAR are based on fundamentally different operational assumptions applied to the same combustion process. This inconsistency is material and undermines the reliability of both assessments.

- **Chapter 7 (Air Quality):** The NTS (Section 7.2.3) confirms that the operational air quality assessment involved dispersion modelling of pollutant emissions from one turbine on natural gas. The standard methodology for dispersion modelling assumes continuous or near-continuous operation to establish a conservative worst-case for ground-level concentrations — equivalent to up to 8,760 hours per annum.
- **Chapter 8 (Climate):** The NTS (Section 8.2.2) states that total GHG emissions are equivalent to 0.04% of Ireland's 2024 national emissions when annualised over the project lifespan. On the basis of the reported 21,000 tCO_2e for approximately 100 hours of operation, this implies a climate assessment based on approximately 100 hours per year of operation.

Both air pollutants and greenhouse gases arise from the same combustion of natural gas. These emissions scale directly with fuel use and operating hours. It is not logically consistent to assume continuous operation for the purposes of air quality modelling while simultaneously assuming minimal operation for climate assessment.

A simple scaling exercise illustrates the magnitude of this inconsistency: at the reported rate of approximately 21,000 tCO_2e per 100 hours, continuous operation at 8,760 hours per annum would result in emissions in the order of 1.8 million tCO_2e — not 21,000 tCO_2e. This represents a discrepancy of approximately 85 times. Even at a more conservative intermediate operational profile, the climate assessment materially understates the potential emissions of the facility.

This inconsistency raises serious concerns regarding the validity of both the air quality and climate assessments and further undermines confidence in the reliability of the EIAR.

3.6.8 Failure to Include All Combustion Sources in Emissions Assessment

The proposed development includes an Above Ground Installation (AGI) comprising multiple combustion units, including a series of boilers (the NTS (Section 2.3(b)) confirms 10 boiler flues, each approximately 5.67m above ground level). These boilers are explicitly described as part of the project and constitute operational emission sources. However:

- The EIAR confines its emissions and greenhouse gas assessment primarily to the main gas turbine and backup generator
- Emissions from the 10 AGI boilers are not quantified or assessed in the air quality chapter or the climate chapter
- The NTS (Section 2.3(b)) also confirms the presence of two pressure reduction kiosks with vents at 5.24m and 3.72m above ground level — the emission implications of these venting events are not assessed
- This represents **a material omission** from the emissions inventory and means that the EIAR's conclusions on air quality, climate impact and regulatory compliance cannot be relied upon

3.6.9 Conclusion on Air Quality and Climate

The EIAR does not provide a robust or reliable assessment of air quality and climate impacts. The following deficiencies are material:

- Internally inconsistent operational assumptions between the air quality and climate chapters, producing a discrepancy of up to 85 times in emissions depending on actual operating hours
- Emissions from the 10 AGI boilers and venting infrastructure are not assessed
- No worst-case operational scenario is modelled for either air quality or climate
- No clear decarbonisation pathway or enforceable emissions cap is provided for operation to 2050
- Athenry Golf Club omitted from air dispersion model despite lying in the prevailing downwind direction
- Reliance on speculative future fuel switching as a climate mitigation measure
- No assessment of atmospheric deposition of pollutants on agricultural land

In Friends of the Irish Environment v Ireland, the Supreme Court emphasised the requirement for clear, evidence-based compliance with climate obligations. The reliance on uncertain and inconsistent operational assumptions in the EIAR does not meet this standard. In ClientEarth v United Kingdom, it was confirmed that compliance with air quality obligations must be ensured in practice, not assumed. The EIAR does not demonstrate this.

These issues represent a material deficiency in the EIAR and raise serious concerns regarding the acceptability of the proposed development.

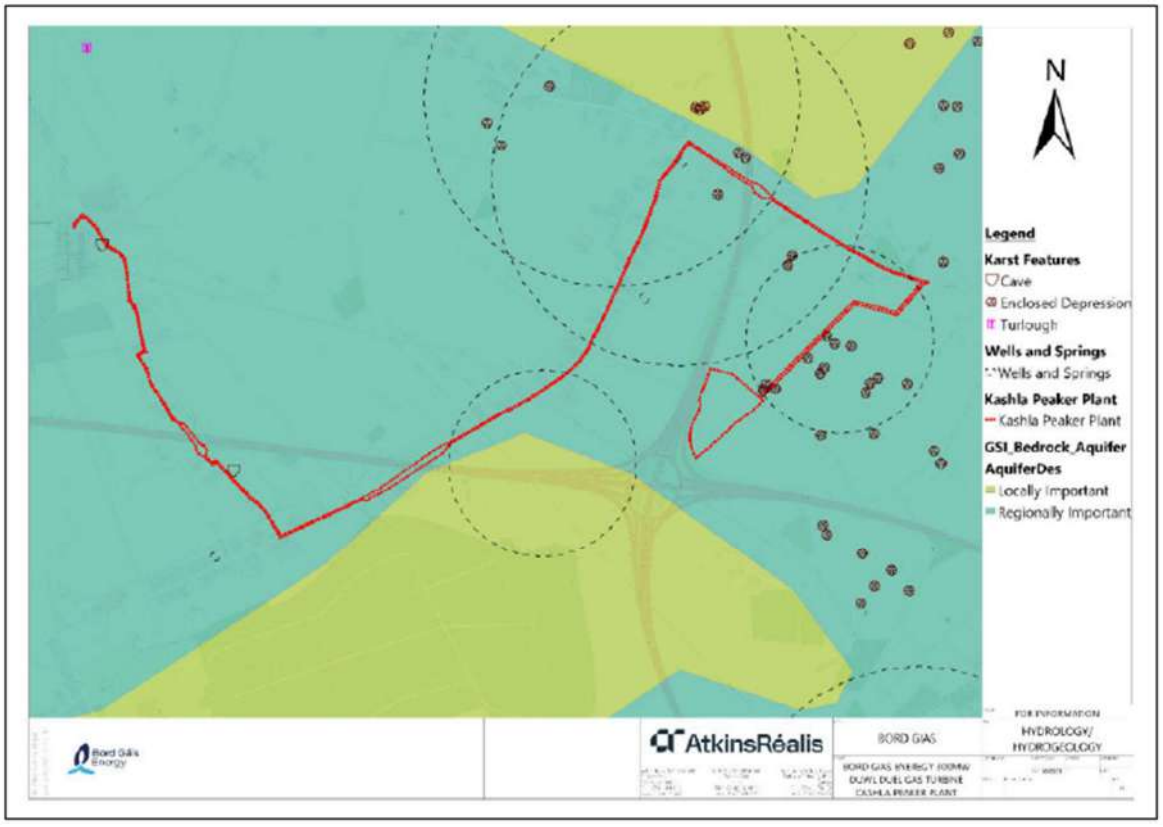
3.7 Water Environment & Hydrogeology

The assessment of the water environment and hydrogeology within the EIAR does not adequately reflect the sensitivity of the receiving environment or the potential risks arising from the proposed development. The location of the development within a karst limestone setting gives rise to significant uncertainty and risk in relation to groundwater protection which is not fully addressed.

The NTS (Chapter 12) confirms the following baseline conditions of direct relevance to this assessment:

- The bedrock aquifer beneath the site is designated as a Regionally Important Aquifer
- Karst formations are present at the site
- Part of the development is underlain by the Galway Bay Groundwater Dependent Terrestrial Ecosystem (GWDTE), which is connected to a Special Area of Conservation
- Six private water abstractions for agricultural and domestic purposes exist in the area
- There are no identified surface water bodies within 2km of the site, confirming that groundwater is the primary hydrological receptor (NTS 12.1)

These confirmed baseline conditions establish a highly sensitive receiving environment in which the precautionary principle must be applied to the fullest extent. In Sweetman v An Bord Pleanála, the Court established that adverse effects must be excluded beyond reasonable scientific doubt. The EIAR does not meet this standard.



Applicants EIAR fig. 11-15 Showing the Karst Features of the site- Regional Important. .

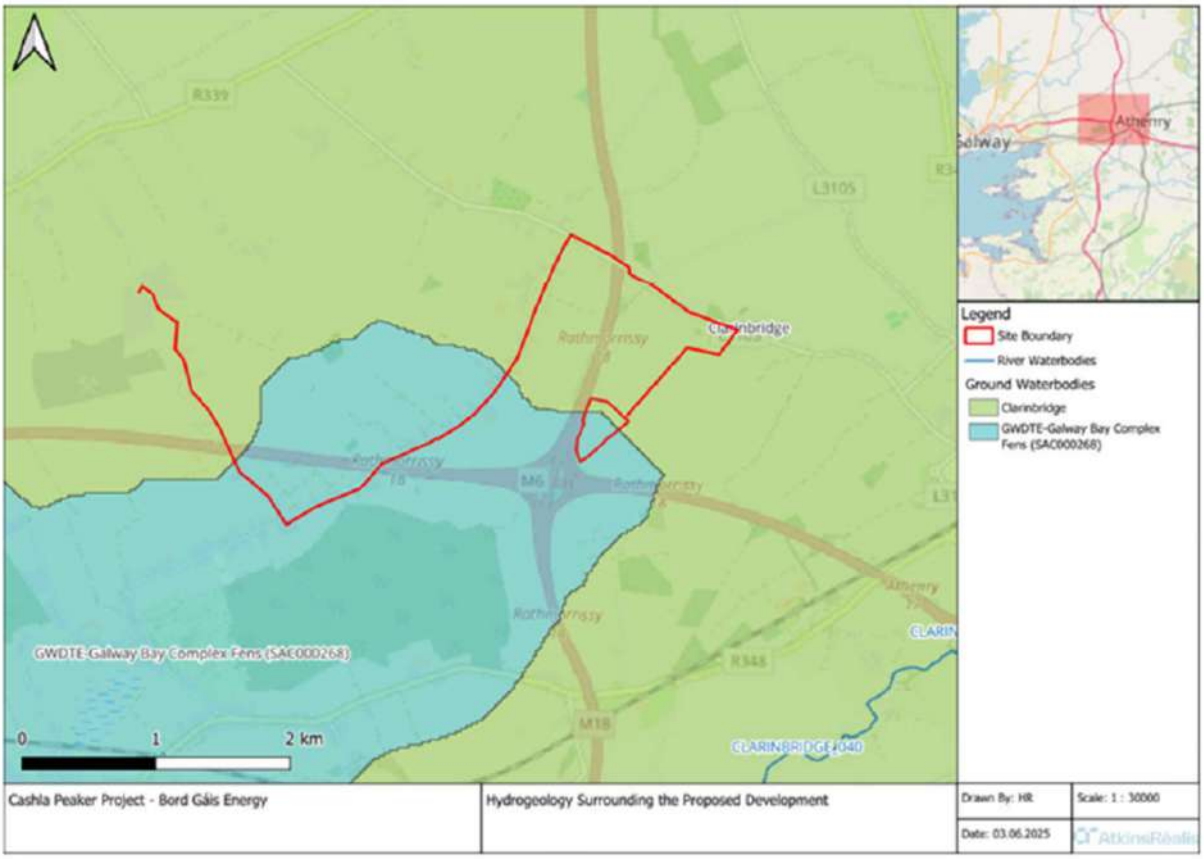
3.7.1 Karst Limestone Environment

The proposed development is located within a karst limestone geological setting. Karst systems are characterised by fissured bedrock, swallow holes, underground conduits and rapid groundwater flow. They are highly vulnerable to contamination because:

- There is direct hydraulic connection between surface activities and groundwater
- Natural filtration and attenuation of pollutants is severely limited compared to other geological settings
- Contaminants can travel rapidly and unpredictably through the subsurface, increasing the risk of widespread groundwater contamination from even small releases
- Once contaminated, karst groundwater is difficult or impossible to remediate

The NTS (Section 12.1) confirms that potential for karst formations is present at the site and that the **Galway Bay GWDTE** — which underlies part of the development and is connected to a **Special Area of Conservation (SAC)** — is a designated groundwater-dependent ecosystem directly below the site footprint. The ecological and water quality risks arising from this proximity are not fully integrated into the water environment assessment.

The characteristics and behaviour of karst limestone environments, including the inherent limitations of containment-based mitigation in such settings, are further detailed in Appendix D of this submission.



Applicants EIAR fig. 12-3 Showing the GWDTE which is connected to a SAC.

3.7.2 Groundwater Vulnerability and Receptors

The NTS confirms the presence of six private water abstractions for agricultural and domestic purposes within the area (NTS 12.1). These represent directly sensitive receptors for whom groundwater is the primary water supply. The EIAR does not:

- Identify the specific locations of these six private abstractions or assess their proximity to potential contamination pathways
- Assess the risk to these private drinking water supplies from accidental contamination during construction or operation
- Evaluate the potential impact on livestock and agricultural productivity from groundwater contamination, which would affect farms reliant on these private supplies
- Assess the potential for construction activities — including the 8.1km UGC trench and the HDD operations beneath the M6 and M17 motorways — to disrupt groundwater flow regimes and affect the yield and reliability of existing private wells

A review of historical aerial imagery (Appendix E of this submission) indicates that the site has undergone progressive land modification, including potential alteration of drainage patterns and ground conditions. In a karst limestone environment, where groundwater pathways are highly sensitive to surface conditions, such modification introduces additional uncertainty in relation to infiltration, flow pathways and groundwater vulnerability that has not been adequately addressed in the EIAR baseline assessment.

3.7.3 Potential Contamination Pathways

The proposed development introduces multiple potential contamination pathways of particular concern in a karst setting:

- **Diesel fuel storage:** The NTS (Section 2.2) confirms two above-ground bunded tanks with a combined capacity of 5,470 tonnes (6,670m³) of low sulphur diesel. This is the largest single contamination risk on the site. In a karst environment, bund failure or overtopping during an extreme weather event could result in rapid subsurface migration of diesel to groundwater before effective response is possible
- **Propane gas storage:** The NTS (Section 2.2) confirms 1 tonne of propane stored for turbine start-up, sufficient for approximately 30 start events. The implications of a propane release event in a karst setting are not assessed
- **Firewater runoff:** The NTS (Section 2.3(a)) confirms the construction of underground firewater retention tanks. In a fire or explosion event at a COMAH facility, contaminated firewater runoff is a primary pollution risk. The overflow risk from firewater containment in a karst environment — where subsurface flow is rapid and unpredictable — is not assessed
- **Construction phase runoff:** Earthworks across the 19.17-hectare greenfield site and 8.1km cable corridor will generate surface water runoff with the potential to mobilise soil contaminants and disturb shallow karst features
- **Alkaline concrete runoff:** Construction concrete washout water is highly alkaline. In a karst environment, even minor releases can adversely affect groundwater quality due to limited natural buffering capacity. This pathway is not assessed in the EIAR
- **Operational leakages:** Oils, lubricants, coolants and chemical storage associated with turbine, substation and water treatment plant operation represent ongoing low-level contamination risks over the 25-year operational lifespan

3.7.4 Limitations of the EIAR Assessment

The EIAR relies heavily on mitigation measures to conclude that groundwater impacts will not be significant. The following limitations apply:

- The NTS (Section 12.2.1) states that groundwater monitoring may be required pending completion of a Detailed Piling Risk Assessment and Hydrogeological Assessment. These assessments have not been completed prior to the planning application, meaning the groundwater baseline has not been fully characterised
- The EIAR assumes that mitigation measures will function as intended in a highly unpredictable subsurface environment. The complexity and variability of karst subsurface flow pathways means that the effectiveness of containment and drainage mitigation cannot be guaranteed
- The EIAR does not include any quantified assessment of potential failure scenarios, including bund failure, overtopping of drainage systems, leakage from fuel or chemical storage, or accidental discharge of contaminated firewater. In a karst environment, even minor failure events can result in rapid and uncontrolled migration of pollutants
- The EIAR relies on a Stage 1 Flood Risk Assessment and concludes that further assessment is not required. However, this does not address groundwater-related flood risk, which is particularly relevant in a karst limestone environment with subsurface flow connectivity. The absence of a Stage 2 assessment represents a significant gap
- The sensitivity of the site was identified at pre-planning stage, including the presence of karst limestone and the requirement for detailed investigation of potential subsurface features such as caves. The EIAR does not demonstrate that a comprehensive investigation of karst features has been completed or that associated risks have been fully characterised prior to submission
- The NTS (Section 12.2.1) confirms that construction is primarily above groundwater level and that ‘impacts will be negligible with best practice and mitigations. This qualitative conclusion is not supported by a quantified assessment of failure scenarios and does not account for the inherent unpredictability of karst hydrogeology

3.7.5 Surface Water and Groundwater Interaction

In karst systems, the interactions between surface and groundwater can be complex, with surface water features directly connected to groundwater pathways through swallow holes and conduits. The NTS confirms no surface water bodies within 2km of the site (NTS 12.1), which means groundwater is the sole hydrological receptor. This increases rather than decreases the significance of groundwater protection, as there is no surface water dilution pathway to mitigate the consequences of a contamination event.

The EIAR does not fully explore the potential for contamination of the groundwater system through direct infiltration from hardstanding, drainage systems or construction activities, nor does it assess how disruption of the existing surface drainage regime across a 19.17 hectare greenfield site may alter subsurface flow patterns in the karst limestone beneath.

3.7.6 Risk to Water Quality, Agriculture and Human Health

Groundwater contamination in a karst environment has the potential to cause rapid, widespread and irreversible impacts on:

- Private domestic drinking water supplies — the NTS confirms six private abstractions in the area (NTS 12.1), none of which are individually assessed in the EIAR
- Agricultural water supply for livestock and irrigation — the site is surrounded by agricultural land and the loss of groundwater quality would affect farm operations across the wider area
- The Galway Bay GWDTE, which underlies part of the site and is connected to Galway Bay Complex SAC (NTS 12.1) — groundwater contamination reaching this ecosystem could constitute a breach of the Habitats Directive
- Human health, through the consumption of contaminated private groundwater supplies or through contact with contaminated land during construction and maintenance activities

In karst environments, groundwater contamination may be difficult or impossible to remediate once it occurs, increasing the significance of even low-probability risk events. The EIAR does not reflect this irreversibility in its risk assessment or in the significance classifications applied to groundwater impacts.

3.7.7 Long-Term and Cumulative Risk

The proposed development has an operational lifespan extending to 2050. Over this timeframe:

- The potential for cumulative low-level contamination from operational leakages, drainage system deterioration and gradual infrastructure ageing increases significantly
- Contamination events in karst environments may not be immediately detectable and may persist or spread over time before being identified
- The EIAR does not assess the implications of long-term degradation of containment infrastructure — bunds, tanks, drainage systems — over the 25-year operational lifespan
- No long-term groundwater monitoring programme is specified in the EIAR that would enable early detection of contamination events before they reach sensitive receptors

3.7.8 Precautionary Approach and Legal Standard

In *Waddenzee Case (*C-127/02), the Court established that where doubt remains as to the absence of adverse effects, consent cannot be granted. Adverse effects must be excluded based on complete, precise and definitive findings. This principle was reaffirmed in Sweetman v An Bord Pleanála.

Given the inherent uncertainty associated with karst hydrogeology, the presence of the Galway Bay GWDTE directly beneath the site, the six unassessed private water abstractions in the area, the 5,470-tonne diesel storage risk, and the absence of completed Detailed Piling Risk Assessment and Hydrogeological Assessment at the time of submission, this standard has not been met.

The EIAR does not provide sufficient scientific certainty to exclude adverse effects on groundwater and does not demonstrate that a precautionary approach has been applied.

3.7.9 Conclusion on Water Environment and Hydrogeology

The EIAR does not provide a sufficiently robust or reliable assessment of the risks to groundwater arising from the proposed development. The following deficiencies are material:

- The Detailed Piling Risk Assessment and Hydrogeological Assessment confirmed as necessary in the NTS (Section 12.2.1) had not been completed at the time of submission
- The six private water abstractions in the area are not individually assessed
- The 5,470-tonne diesel storage risk and contaminated firewater runoff risk are not assessed as failure scenarios in a karst setting
- Alkaline concrete runoff during construction is not assessed
- The Galway Bay GWDTE, which underlies part of the site and is connected to a SAC, is not assessed as an ecological groundwater receptor in the water environment chapter
- No quantified worst-case or failure scenario assessment is provided
- No long-term groundwater monitoring programme is specified
- The Stage 1 Flood Risk Assessment does not address karst groundwater flood risk

The proposed development is not demonstrated to comply with WQ Policy 1 (Water Quality Protection) and WQ Policy 3 (Groundwater Protection) of the Galway County Development Plan 2022–2028, which require the protection of surface and groundwater resources in vulnerable karst environments and the prevention of pollution of aquifers and water supplies.

Having regard to the precautionary principle established in Sweetman v An Bord Pleanála and Waddenzee Case, and to the confirmed presence of a Regionally Important Aquifer, the Galway Bay GWDTE and six private water abstractions within the receiving environment, it has not been demonstrated that the proposed development will not result in adverse effects on the water environment. This represents a material deficiency in the EIAR and raises serious concerns regarding the suitability of the proposed development in this location.

3.8 Landscape & Visual Impact

The assessment of landscape and visual impact within the Environmental Impact Assessment Report (EIAR) does not adequately reflect the sensitivity of the receiving environment or the extent of change arising from the proposed development.

The proposed development comprises a visually prominent, industrial-scale complex characterised by significant height, massing and vertically dominant elements. These include a 36m telecommunications mast, a 30m exhaust stack, turbine buildings, associated plant infrastructure, lighting and ancillary development. Taken together, these elements introduce a substantial industrial presence into a predominantly rural agricultural landscape.

The scale, form and spatial extent of the development represent a fundamental change in landscape character. The proposal is not a minor or incremental addition to an established industrial setting, but rather a new and visually dominant complex within an open and sensitive rural environment. The EIAR does not adequately acknowledge the magnitude of this change.

A detailed independent peer review of the Landscape and Visual Impact Assessment (LVIA) has been undertaken and is included at Appendix C – Landscape and Visual Impact Assessment Peer Review. This review identifies several methodological limitations and concludes that the extent, prominence and significance of visual effects are likely to be materially underestimated. In particular, the review highlights concern regarding the treatment of visibility, the reliance on vegetation screening, the assessment of receptor sensitivity, and the lack of a comprehensive evaluation of lighting and cumulative effects.

The planning history of the wider Cashla area further reinforces the sensitivity of this location. Previous proposals, including Galway County Council Planning Ref. 09/303, identified environmental and landscape constraints associated with this area and raised concerns regarding its capacity to accommodate large-scale industrial development. These constraints remain relevant and are not adequately addressed within the EIAR.

In these circumstances, it is submitted that the EIAR does not provide a robust or reliable assessment of landscape and visual effects and does not demonstrate that the proposed development can be accommodated without giving rise to significant adverse impacts on landscape character and visual amenity.

3.8.1 Overview of Assessment

The EIAR assesses the likely landscape and visual effects of the proposed development, including effects on landscape character, visual amenity, sensitive receptors and cumulative landscape change. The assessment considers the physical characteristics of the proposed development, the extent of visibility from the surrounding area, and the sensitivity and capacity of the receiving landscape.

The EIAR concludes that, following the implementation of mitigation measures, the resulting landscape and visual effects will be not significant or will be limited in extent.

However, the LVIA peer review identifies several significant concerns regarding the methodology, analysis and conclusions presented in the EIAR.

In particular, the review highlights:

- The treatment of Zone of Theoretical Visibility (ZTV) mapping, including over-reliance on vegetation-filtered scenarios
- The lack of emphasis on the bare-earth ZTV, which indicates a substantially greater extent of visibility
- The reliance on existing and proposed vegetation as a primary means of screening, without adequately distinguishing between baseline conditions and mitigation measures
- The limited assessment of visual effects at early stages of development, before mitigation planting has established
- The absence of a detailed assessment of lighting and night-time visual effects
- Insufficient consideration of cumulative landscape and visual impacts
- Limited assessment of the combined visual effect of multiple components of the development

The review notes that vegetation within the study area is variable, seasonal and subject to ongoing agricultural management, and therefore cannot be relied upon to provide consistent or effective screening. In this context, the vegetation-filtered ZTV may not accurately represent actual visibility conditions, particularly during winter months or in areas where vegetation is limited or discontinuous.

The review further concludes that the extent of visibility, particularly when assessed using the bare-earth ZTV, is significantly greater than indicated in the EIAR, extending across a wider area of the surrounding rural landscape, including areas in proximity to Athenry.

In addition, the EIAR does not adequately assess the visual effects arising from the combined presence of multiple vertically dominant structures, including the 30m exhaust stack and 36m telecommunications mast, nor does it fully consider how these elements will be perceived together as a unified industrial complex.

The reliance on mitigation planting as a primary means of reducing visual impact is also identified as a key limitation. Such planting requires time to establish, may not achieve the intended level of screening, and is inherently less effective in relation to tall vertical structures which extend above the skyline.

It is therefore submitted that the EIAR underestimates both:

- The sensitivity of the receiving rural landscape
- The magnitude and extent of visual change arising from the proposed development

In these circumstances, the conclusions of the EIAR in relation to landscape and visual impact are not supported by the evidence and are materially deficient.

3.8.2 Description of the Development – Height, Massing and Vertical Elements

The proposed development comprises a cluster of large-scale industrial structures rather than a single discreet element. This distinction is critical, as the combined visual effect of multiple structures is significantly greater than the sum of individual components.

The development includes:

- A 36m telecommunications mast
- A 30m exhaust stack
- Turbine buildings and associated plant infrastructure
- Air intake and exhaust structures
- Tanks up to approximately 15.4m in height
- Substation and electrical infrastructure
- Security fencing, lighting and ancillary structures

These elements collectively form a visually dominant industrial complex, characterised by substantial height, bulk and spatial extent.

The telecommunications mast represents the tallest structure within the development, exceeding the height of the primary stack. In the context of a low-lying rural landscape with limited vertical development, this introduces a new and highly prominent vertical feature that will be visible over long distances.

The 30m exhaust stack similarly represents a significant vertical intrusion into the skyline. When viewed in combination with the telecommunications mast and other structures, these elements will create a layered and visually complex skyline, resulting in increased visual prominence, skyline intrusion and reduced visual coherence within the landscape.

The physical footprint of the proposed development is also a significant factor in assessing landscape and visual impact. Approximately 64% of the site will be occupied by built development, including buildings, hardstanding, internal roadways and associated infrastructure, with only approximately 36% of the site remaining available for landscaping or planting.

This level of site coverage represents a substantial transformation of the site from a permeable, vegetated agricultural landscape to a predominantly engineered and industrial surface. The extent of hardstanding and built form limits the opportunity for meaningful landscape integration and significantly constrains the effectiveness of mitigation measures.

In particular:

- The scale of built development reduces the capacity for screening
- The limited area available for planting restricts landscape buffering
- The industrial character of the development cannot be mitigated through vegetation alone

The EIAR places significant reliance on landscape planting and vegetation screening as a primary mitigation measure. This reliance is not supported by the physical characteristics of the site or the nature of the proposed development.

Firstly, the effectiveness of planting is inherently time dependent. Newly planted vegetation requires a prolonged period to establish and mature. During the early operational years of the development, when visual impacts are at their most pronounced, mitigation planting will not provide effective screening. The EIAR does not adequately assess this temporal gap.

Secondly, the extent of built development significantly limits the scope for meaningful planting. With approximately 64% of the site covered by infrastructure, the remaining area available for landscaping is insufficient to provide effective screening or integration.

Thirdly, planting is inherently incapable of screening vertically dominant structures. Elements such as the 30m exhaust stack and 36m telecommunications mast extend well above the height of any proposed vegetation and will remain visible over long distances. As such, planting cannot mitigate skyline intrusion or visual dominance.

The LVIA peer review identifies further limitations in relation to vegetation-based mitigation. It notes that vegetation within the study area is variable in height, density and continuity, and is subject to seasonal variation and active management. Hedgerows may be reduced or removed over time and assumed vegetation heights used in the assessment may not reflect actual conditions on the ground.

The review also highlights that the EIAR does not clearly distinguish between existing vegetation and proposed planting. This distinction is critical, as existing vegetation forms part of the baseline environment, whereas proposed planting is a mitigation measure whose effectiveness is uncertain and cannot be assumed.

Furthermore, vegetation is largely ineffective in mitigating night-time visual impacts. Artificial lighting associated with the development, including floodlighting and security lighting, will extend beyond physical screening and contribute to light spill and skyglow, which cannot be contained by planting.

There is also no certainty that proposed planting will be maintained or will achieve the intended level of effectiveness over the lifetime of the development. Factors such as maintenance, land management practices, disease and climatic conditions introduce additional uncertainty.

The LVIA peer review further emphasises that the proposed development comprises several distinct but interrelated components, including the peaker plant, above-ground installation, substation infrastructure and associated lighting. The combined visual effect of these elements as a unified development is not fully assessed within the EIAR.

This is a significant omission. The visual impact of the development must be assessed as a whole, considering the interaction between its various components, rather than considering each element in isolation.

The clustering of multiple vertically dominant structures, combined with extensive built coverage and associated lighting, results in a development that is visually prominent, industrial in character and fundamentally at odds with the receiving rural landscape.

In these circumstances, the EIAR does not adequately assess the true scale, massing or visual dominance of the proposed development, and significantly overstates the effectiveness of mitigation planting. As a result, the magnitude of landscape and visual effects arising from the development is materially underestimated.

3.8.3 Policy Context – Galway County Development Plan 2022–2028

The proposed development is located within the administrative area of Galway County Council and is therefore subject to the Galway County Development Plan 2022–2028.

The Development Plan establishes a clear policy framework for the protection of landscape character, visual amenity and rural environmental quality. These policies are not aspirational; they form part of the statutory basis upon which development proposals must be assessed.

The LVIA peer review confirms that the Development Plan seeks to:

- Protect the **intrinsic character** and **visual quality of the rural landscape**
- Ensure that new development is appropriately sited and **integrated into the receiving environment**
- Avoid development that would result in **significant adverse impacts on landscape character** or visual amenity
- **Safeguard** the setting of rural settlements and the wider countryside
- **Maintain** the open and undeveloped **character of rural areas**

These objectives are directly engaged by the proposed development.

Conflict with Landscape Character Objectives

The receiving landscape is characterised by:

- Open agricultural land
- Low-lying topography
- Limited vertical development
- Long-distance visibility
- Dispersed rural settlement

Such landscapes are highly sensitive to vertically dominant and industrial-scale development and have limited capacity to absorb change.

The introduction of:

- A 36m telecommunications mast
- A 30m exhaust stack
- Multiple buildings and infrastructure of significant scale
- Extensive lighting and hardstanding

represents a substantial and permanent alteration of landscape character.

This level of development is not consistent with the requirement to protect and maintain the existing rural landscape.

Visual Amenity and Residential Environment

The Development Plan also seeks to protect visual amenity and the quality of the rural environment for residents and communities.

The proposed development will introduce:

- Visually dominant structures
- Industrial lighting
- Continuous operational presence

into a rural setting characterised by low-intensity development and dark skies.

The EIAR does not demonstrate that:

- Visual intrusion can be adequately mitigated
- Residential amenity will be protected
- The development can be integrated into the landscape

In these circumstances, the proposal conflicts with Development Plan objectives relating to visual amenity and residential environment.

Failure of Integration and Design

A core requirement of the Development Plan is that development should be:

- Appropriately sited
- Visually integrated
- Compatible with its surroundings

The scale, height and industrial character of the proposed development prevent meaningful integration.

Mitigation measures, including planting, cannot overcome:

- The height of vertical structures
- Skyline intrusion
- The industrial form and massing of the development

Accordingly, the proposal fails to meet fundamental design and integration requirements.

Material Contravention of the Development Plan

The Development Plan provides the statutory framework for decision-making. Where a proposal conflicts with its objectives, this must be clearly justified.

In this case:

- The scale and nature of the development are inconsistent with rural landscape protection
- Visual impacts are significant and cannot be adequately mitigated
- The development introduces industrialisation into a sensitive rural setting

These conflicts are not minor or technical in nature. They go to the core objectives of the Development Plan.

Accordingly, the proposed development represents a **material contravention** of the Galway County Development Plan 2022–2028 in respect of:

- Landscape protection
- Visual amenity
- Rural character
- Design and integration

Conclusion on Policy Context

The EIAR does not demonstrate compliance with the landscape and visual objectives of the Development Plan.

The scale, height and industrial nature of the proposed development are fundamentally at odds with the character of the receiving environment and the policy framework intended to protect it.

In the absence of clear justification for this conflict, and having regard to the significant adverse impacts identified, the proposed development is not consistent with the proper planning and sustainable development of the area.

3.8.4 Landscape Character and Sensitivity

The EIAR identifies the site within the Central Galway Complex Landscape Type and Landscape Character Unit 6b – Southern River Clare Basin.

This landscape is characterised by:

- Grass-based agricultural land use
- Low enclosure defined by hedgerows and field boundaries
- Dispersed rural settlement
- Long-distance views
- A low-lying and open visual character

These characteristics indicate a landscape that is inherently **visually exposed, sensitive to change and vulnerable to vertical intrusion**.

Image above taken from applicant's appendix 6.1- part 1, viewpoint 2, 590m from the site boundary. Shows the rural agricultural land that will be industrialize, Existing trees and hedges in adjacent land cannot be a mitigation for screening as these are beyond their control.

The LVIA peer review confirms that the receiving landscape in the vicinity of the proposed development is defined by agricultural land uses, field boundary hedgerows and dispersed rural settlement, with existing infrastructure largely limited to linear elements such as roads and utilities. This reinforces the predominantly rural and non-industrial character of the area.

The review further identifies that:

- The extent of visibility is likely to be greater than presented in the EIAR

- Vegetation screening is variable, seasonal and subject to ongoing agricultural management
- The introduction of industrial structures and associated lighting has the potential to materially alter landscape character, particularly during night-time conditions

The EIAR's own baseline description acknowledges that while parts of the landscape may appear locally enclosed, it opens out significantly in wider rural areas, allowing for long-distance views. This is indicative of visual exposure rather than resilience.

In such landscapes, the introduction of vertically dominant and industrial-scale development gives rise to a high degree of visual impact due to:

- Limited natural screening
- Extensive visibility across the landscape
- Sensitivity of the skyline to intrusion
- The absence of comparable existing development

The proposed development introduces a cluster of large-scale industrial structures, including a 36m telecommunications mast and a 30m exhaust stack, which will extend well above the existing landscape envelope. These elements will be visible over long distances and will form new and dominant features within the skyline.

The EIAR does not adequately assess the degree to which the proposed development will:

- Alter the perceived scale and openness of the landscape
- Introduce industrial character into a rural setting
- Affect the continuity and coherence of the landscape
- Change the visual experience of receptors within the wider area

The LVIA peer review further emphasises that the receiving landscape has a **limited capacity to absorb development of this scale**, particularly where it introduces vertical structures that are inconsistent with the existing character.

It is also relevant that the planning history of the wider Cashla area, including Galway County Council Planning Ref. 09/303, has previously identified environmental and landscape sensitivities associated with this location. These established constraints reinforce the conclusion that the landscape has a limited capacity to accommodate large-scale industrial development.

In these circumstances, it is submitted that the receiving landscape is of **high sensitivity and low capacity to absorb the proposed development**, and that the EIAR underestimates both the susceptibility of the landscape and the magnitude of change arising.

Accordingly, the EIAR does not provide a robust or accurate assessment of landscape character and sensitivity, and its conclusions in this regard are not supported by the evidence.

3.8.5 Cultural Landscape and Archaeological Setting

The EIAR confirms the presence of a recorded archaeological monument near the proposed development site, namely Ringfort GA084-065, located approximately 100 metres to the west of the site and separated by the M17 motorway.

Ringforts are a defining feature of the Irish rural landscape and represent early medieval settlement patterns closely associated with agricultural land use and the historical development of the countryside. Their significance extends beyond their physical footprint to include their wider landscape setting, visual context and relationship with surrounding land.

The assessment of landscape and visual effects within the EIAR does not adequately consider this cultural landscape context.

While the EIAR notes the physical separation of the monument from the site by the M17 motorway, this does not remove or diminish the importance of its setting. Archaeological monuments are experienced not only as individual features but as part of a broader landscape, including views to and from the monument and the character of the surrounding environment.

The proposed development introduces:

- A 30m exhaust stack
- A 36m telecommunications mast
- Industrial buildings and plant infrastructure
- Extensive lighting and operational activity

These elements will fundamentally alter the character of the surrounding rural landscape and introduce a visually dominant industrial presence into an area historically defined by agricultural use and low-rise development.

The introduction of such structures has the potential to:

- Disrupt the visual setting of the ringfort
- Introduce incongruous vertical elements into a historically low-lying landscape
- Alter the perception and integrity of the cultural landscape
- Diminish the relationship between the monument and its agricultural context

The EIAR does not provide a detailed or reasoned assessment of these effects. It does not:

- Assess intervisibility between the development and the monument
- Consider views from or towards the monument
- Evaluate the impact of lighting on the night-time setting
- Examine the cumulative effect of industrial infrastructure on cultural landscape character

The LVIA peer review reinforces this concern, noting that the assessment of landscape and visual effects does not fully address the interaction between the proposed development and the wider landscape context, including heritage features and their setting.

The planning history of the wider Cashla area, including Galway County Council Planning Ref. 09/303, has previously identified environmental and landscape sensitivities associated with this location. These sensitivities include the rural character of the landscape and its limited capacity to accommodate large-scale industrial development. The presence of archaeological features within this landscape further reinforces its sensitivity.

In this context, the failure to adequately assess the impact of the proposed development on the cultural landscape represents a significant omission.

Accordingly, the EIAR does not demonstrate that the proposed development will preserve the setting, character or integrity of the cultural landscape, including the setting of Ringfort GA084-065.

This represents a material deficiency in the assessment and further undermines the reliability of the EIAR in relation to landscape and visual effects.

3.8.6 Visual Receptors, Visibility and Methodological Limitations

The proposed development will be visible from a wide range of receptors, including:

- Residential dwellings within the surrounding rural area
- Local roads and the wider rural road network
- Open agricultural lands
- Strategic transport corridors, including the M6, M17 and M18 motorway network
- Institutional and educational receptors

These receptors represent a combination of highly sensitive and frequently experienced viewpoints within a rural landscape setting.

The LVIA peer review confirms that the EIAR considers views from a range of receptor types, including residents, road users and the wider rural landscape. However, it also identifies several significant methodological issues which materially affect the reliability of the assessment.

Reliance on Vegetation and Screening Assumptions

The LVIA peer review notes that the assessment relies on vegetation, both existing and proposed, to reduce perceived visibility. It further highlights that the distinction between baseline vegetation and proposed mitigation planting is not always clearly defined.

This distinction is critical. Existing vegetation forms part of the baseline environment, whereas proposed planting represents a mitigation measure which:

- Requires time to establish
- May not achieve the assumed level of screening
- Is subject to uncertainty in terms of maintenance and long-term effectiveness

The failure to clearly distinguish between these elements results in an overestimation of screening effects and an underestimation of visibility.

ZTV Analysis and Extent of Visibility

The LVIA peer review identifies specific issues in relation to Zone of Theoretical Visibility (ZTV) analysis.

The vegetation-filtered ZTV incorporates assumed screening from:

- Woodland (approximately 12m)
- Unmanaged hedgerows (approximately 5m)
- Managed hedgerows (approximately 2m)

However, vegetation within the study area is:

- Variable in height and density
- Discontinuous in many locations
- Subject to ongoing agricultural management

As a result, the assumed level of screening may not be consistently representative of actual conditions.

In contrast, the **bare-earth ZTV** provides a more robust indication of maximum potential visibility. The peer review confirms that this scenario indicates a substantially wider extent of theoretical visibility across the surrounding rural landscape, including areas in proximity to Athenry.

The vegetation-filtered ZTV presents a more contained and fragmented pattern of visibility. However, the limited emphasis placed on the wider extent of visibility shown by the bare-earth scenario has the effect of underrepresenting:

- The overall extent of visibility
- The number of receptors affected
- The magnitude of visual effects

This is particularly relevant:

- During winter months
- In areas with limited or discontinuous vegetation
- During early operational phases prior to establishment of mitigation planting

Educational and Institutional Receptors

The EIAR identifies educational receptors including Presentation College and Clarin College. However, the assessment contains significant limitations.

The EIAR states that there will be no views from ground-floor areas. While this may be correct at ground level, both buildings are multi-storey. The EIAR does not assess visibility from upper-floor classrooms or circulation areas.

This omission is significant.

At upper-floor level:

- Vegetation and built screening are reduced
- Long-distance visibility increases

Vertical elements such as the 30m exhaust stack and 36m telecommunications mast become more prominent

This results in greater skyline intrusion and a stronger perception of industrial development than indicated in the EIAR.

Accordingly, the EIAR does not accurately represent actual viewing conditions for staff and students.

Receptor Sensitivity – Teagasc Mellows Campus

The EIAR identifies Teagasc Mellows Campus as a receptor and assigns it a medium sensitivity rating.

This classification is not justified.

Teagasc Mellows Campus is an agricultural research and education facility whose users are directly engaged with land use, farming and environmental management. Their professional relationship to the landscape indicates a higher degree of sensitivity than acknowledged.

The assigned sensitivity rating therefore underestimates the potential significance of visual effects.

Overall Methodological Deficiency

The omission of upper-floor viewpoints, combined with the underestimation of receptor sensitivity and reliance on vegetation screening assumptions, results in a systematic underestimation of visual impact within the EIAR.

In particular:

- The extent of visibility is understated
- The number and sensitivity of receptors are underestimated
- The prominence of vertical structures is not fully captured

Screening measures are inherently ineffective in addressing the visual impact of tall vertical structures, particularly where these extend above the skyline and remain visible over long distances.

Conclusion on Visibility and Receptors

In circumstances where key receptors are identified but not fully assessed under realistic viewing conditions, the resulting evaluation of visual impact cannot be considered robust or reliable.

The LVIA peer review demonstrates that the assessment of visibility and visual receptors is subject to significant methodological limitations, which collectively result in a material underestimation of the extent and significance of visual effects.

Accordingly, the EIAR does not provide a sufficiently robust or evidence-based assessment of visual impacts.

3.8.7 Lighting and Night-Time Effects

The proposed development includes extensive operational and security lighting associated with a large-scale industrial energy facility, including floodlighting columns, plant illumination and ancillary lighting infrastructure.

The LVIA peer review confirms that the proposed development includes a range of lighting elements associated with the operation of the peaker plant, the above-ground installation and the ESB substation, including floodlighting columns up to approximately 8m in height, together with operational and security lighting across the site. The review states that, while lighting design is said to accord with best practice guidance, the LVIA does not include a detailed or dedicated assessment of the landscape and visual effects of artificial lighting, particularly during the operational phase. It identifies the absence of a clear assessment of night-time visibility, inadequate exploration of the interaction between lighting and the surrounding rural landscape, and a failure to address the potential for lighting to increase the perceived extent and prominence of the development.

The receiving environment is characterised by a predominantly dark rural setting with low baseline levels of artificial light. The LVIA peer review expressly notes that, in such contexts, the introduction of new lighting can significantly alter the character of the area, particularly during hours of darkness. It further confirms that the absence of night-time visualisations or a dedicated lighting assessment limits the ability to fully understand the visual effects of the proposed development. The review also states that, while vegetation may provide some screening during daylight hours, its effectiveness in reducing the visual influence of lighting is more limited, as light spill and skyglow can extend beyond the immediate site and may be perceptible across a wider area than the physical structures themselves.

The proposed development will introduce continuous and intermittent artificial lighting associated with plant operation, illuminated buildings, structures and infrastructure, security lighting and perimeter lighting, as well as lighting associated with operational activity, maintenance and emergency scenarios.

Lighting will:

- Increase overall brightness within the receiving environment
- Extend the visibility of the development beyond daylight hours
- Highlight vertically dominant structures, including the 30m exhaust stack and 36m telecommunications mast
- Create new focal points within the landscape during night-time hours

- Contribute to light spill and skyglow across the surrounding rural area

The receiving environment includes dispersed residential dwellings and a range of highly sensitive community receptors, including schools and recreational facilities. Educational receptors within the wider area include Presentation College, Clarin College, Coláiste na hEachréidh, Athenry Primary School, Gaelscoil Riada and Lisheenkyle National School. These facilities accommodate children and young people, who are recognised as particularly sensitive receptors in environmental assessment due to increased physiological and psychological sensitivity, prolonged and repeated exposure, and regular use of outdoor spaces for education, sport and recreation.

The presence of artificial lighting within the surrounding landscape has the potential to:

- Reduce the quality of the night-time environment experienced by these receptors
- Introduce visual disturbance and distraction
- Affect the perception of environmental quality and rural amenity
- Contribute to cumulative environmental stress when combined with noise, traffic and visual intrusion

Sports and recreational facilities in the wider area are also locations of sustained outdoor activity, often extending into evening hours. These receptors are particularly sensitive to lighting impacts due to increased exposure during periods of darkness, reliance on a rural low-light setting, and the importance of visual amenity to recreational use.

The existing night-time environment is defined by low levels of artificial light, dark skies and limited illumination associated mainly with rural dwellings and roads. The introduction of a continuously illuminated industrial facility will alter the perceived character of the landscape, introduce an urban or industrial lighting signature into a rural setting, and reinforce the perception of ongoing industrial activity. This represents a fundamental change in landscape character extending beyond the physical footprint of the development.

Lighting effects do not occur in isolation. When combined with the height and scale of structures, industrial form and massing, noise, traffic and operational activity, lighting contributes to the overall perception of industrialisation within the rural landscape. Lighting impacts may also be intensified by:

- Night-time or extended operational hours
- Intermittent high-intensity lighting during maintenance or emergency events
- Reflections from structures and surfaces

The EIAR does not adequately assess:

- The full extent of light spill and skyglow
- The interaction between lighting and vertical structures
- Cumulative lighting effects in combination with other infrastructure
- Impacts on sensitive receptors, including residential dwellings and schools

Artificial lighting also has the potential to affect biodiversity and ecological receptors. The LVIA peer review notes that the ecological assessment identifies that, in the absence of mitigation measures, lighting has the potential to result in a permanent significant negative impact on local bat populations through disturbance to commuting and foraging behaviour. This reinforces the broader environmental sensitivity of the receiving environment and the importance of a comprehensive assessment of lighting effects.

The planning history of the wider Cashla area further reinforces the sensitivity of the receiving environment to light-related visual impacts. Galway County Council Planning Ref. 17/1538 (solar farm development) was refused, with the planning authority identifying concerns in relation to visual impact, including glint and glare effects. While differing in form, glint and glare arise from the reflection and emission of light and are directly relevant to the assessment of visual disturbance within the landscape. This demonstrates that even intermittent light-related impacts were considered unacceptable in this location. The proposed development, by contrast, introduces continuous and intermittent artificial lighting and therefore represents a more extensive and persistent form of visual impact.

In these circumstances, the potential for significant adverse landscape and visual effects arising from lighting has not been adequately assessed.

3.8.8 Strategic Roads, Comparator Development, Precedent and Cumulative Effects

The proposed development will be visible from a range of strategic and local transport routes, including the M6, M17 and M18 motorway network, as well as from regional and local roads within the surrounding rural area.

The EIAR places weight on the speed of motorway users in reducing visual sensitivity. This approach should be treated with caution. While speed may reduce the duration of individual views, it does not eliminate visual impact where structures are of sufficient height, scale and prominence to attract attention over long distances.

In this case, the proposed development includes vertically dominant elements, including a 30m exhaust stack and a 36m telecommunications mast, located in proximity to a major motorway interchange. These structures will form prominent skyline features and will be highly visible to road users approaching and traversing the junction.

This is particularly significant given that motorway junctions are locations where drivers are required to make navigational decisions. The presence of visually dominant industrial structures in such locations has the potential to:

- Increase visual distraction
- Alter the perception of the surrounding landscape
- Introduce an industrial character into a strategic transport corridor

Local roads within the area are also highly sensitive receptors. These routes are narrow, actively used and closely associated with residential dwellings, agricultural activity and daily rural life. Users of these roads experience the landscape at low speed and over prolonged periods, increasing their sensitivity to visual change.

Comparator Development – Dexcom Facility

A relevant comparator development is the Dexcom Ireland facility.

This development differs materially from the proposed development in terms of:

- Scale and height
- Setback from roads
- Landscape integration
- Overall visual prominence

In the case of the Dexcom facility:

- The closest structure is approximately 99.5 metres from the adjoining roadway
- Building heights are approximately 20 metres
- The site is set at a lower level relative to adjacent road infrastructure

These factors reduce the visual prominence of the development and allow for a greater degree of integration within the landscape.

By contrast, the proposed development:

- Includes a 30m exhaust stack and a 36m telecommunications mast
- Is located at a distance of approximately 50 metres from the motorway
- Is positioned at a level broadly comparable to the road network
- Occupies a highly exposed location at a major motorway interchange

As a result, the proposed development will be significantly more visually prominent and intrusive than the Dexcom facility.

The comparison demonstrates that the proposed development represents a materially different and more intensive form of development, with a greater potential for adverse landscape and visual effects.

Cumulative Effects and Landscape Change

The LVIA peer review identifies limitations in the assessment of cumulative effects.

While the EIAR acknowledges the presence of existing infrastructure in the wider area, the cumulative assessment places emphasis on the developed character of the immediate context rather than fully examining the combined visual influence of multiple infrastructure elements.

The proposed development comprises several distinct but interrelated components, including:

- The peaker plant and associated buildings
- The above-ground installation
- The ESB substation
- Telecommunications infrastructure
- Lighting and ancillary development

The EIAR provides limited analysis of the combined visual effect of these elements as a unified development.

In practice, these elements will not be perceived in isolation but as a single industrial complex. The combined effect will result in:

- Increased visual massing
- Greater skyline intrusion
- Enhanced visual dominance within the landscape

The LVIA peer review also identifies limited consideration of:

- Sequential views along transport routes
- The interaction between the proposed development and existing infrastructure
- The cumulative effect of multiple developments on landscape character

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Precedent, Planning History and Progressive Industrialisation

The introduction of the proposed development has the potential to contribute to a perception of progressive industrialisation within the rural landscape.

Planning history in the wider Cashla area demonstrates that concerns regarding landscape capacity, visual intrusion and environmental sensitivity are long-standing.

In particular:

- Galway County Council Planning Ref. 09/303 identified environmental and landscape constraints
- Galway County Council Planning Ref. 17/1538 was refused, with concerns relating to visual impact, including glint and glare

This is significant as it demonstrates that the receiving landscape has limited capacity to absorb visually perceptible development, including light-related impacts.

The proposed development, which introduces tall structures and continuous artificial lighting, represents a more intensive and persistent form of visual impact.

The proposed development introduces:

- Tall, vertically dominant structures
- A large-scale industrial complex
- Continuous and intermittent artificial lighting

These characteristics represent a significantly greater and more persistent form of visual impact than those associated with solar development.

Accordingly, when considered in combination with existing and previously proposed development, the proposed development would:

- Intensify the presence of industrial infrastructure
- Reinforce the perception of the area as an energy/industrial corridor
- Contribute to cumulative landscape change and loss of rural character

This represents a progressive transformation of the landscape rather than an isolated development.

Conclusion on Strategic Roads and Cumulative Effects

The EIAR does not adequately assess the visual impact of the proposed development from strategic and local roads, nor does it provide a robust evaluation of cumulative landscape effects.

The comparison with the Dexcom facility demonstrates that the proposed development is materially more prominent and less integrated within the landscape.

The LVIA peer review confirms that cumulative effects, combined views and sequential visibility have not been fully assessed.

The planning history of the area, including Galway County Council Planning Ref. 17/1538, further reinforces the sensitivity of the receiving landscape and its limited capacity to accommodate visually intrusive development.

In these circumstances, the EIAR underestimates:

- The visibility of the development from key transport routes
- The cumulative impact of multiple infrastructure elements
- The contribution of the development to progressive landscape change

Accordingly, it has not been demonstrated that the proposed development will not give rise to significant adverse landscape and visual effects when considered in the context of strategic roads, cumulative impacts and established planning precedent.

3.8.9 Do Nothing Scenario

The EIAR states that, under a Do-Nothing scenario, the landscape would remain unchanged.

This is a significant baseline position. It confirms that:

- The existing landscape is stable in character
- There is no existing trend of industrialisation at the site
- The visual and landscape effects identified arise solely from the proposed development

Accordingly, the impacts identified in this chapter are not the continuation of an established pattern of development but represent a **new and permanent alteration** to the character of the landscape.

The introduction of a large-scale, visually dominant industrial facility, including tall vertical structures and extensive lighting, would therefore constitute a fundamental change to the receiving environment.

3.8.10 Conclusion on Landscape and Visual Impact

The proposed development would introduce a large-scale industrial complex into a rural agricultural landscape of high sensitivity and limited capacity to absorb change.

The development comprises a cluster of vertically dominant structures, including:

- A 36m telecommunications mast
- A 30m exhaust stack
- Multiple buildings and plant infrastructure
- Extensive lighting and ancillary development

These elements will give rise to:

- Significant skyline intrusion
- Long-distance visibility
- A visually dominant industrial presence within the landscape

The development will be visible from a wide range of receptors, including residential dwellings, local roads, agricultural lands, educational and community facilities, and the M6, M17 and M18 motorway network.

The assessment of landscape and visual impact within the EIAR is undermined by several significant methodological limitations, including:

- Over-reliance on vegetation-filtered ZTV mapping
- Underestimation of visibility based on bare-earth scenarios
- Optimistic assumptions regarding mitigation planting
- Failure to assess upper-floor viewpoints
- Underestimation of receptor sensitivity
- Inadequate assessment of night-time and lighting effects
- Limited consideration of cumulative and sequential views

The LVIA peer review confirms that these limitations result in a systematic underestimation of the extent and significance of visual effects, particularly in early operational years, winter conditions, areas with limited or managed vegetation, and during night-time when lighting increases visibility.

Mitigation measures, including planting and screening, cannot address the fundamental visual impacts arising from the height, scale and prominence of the proposed development, particularly in an open and low-lying rural landscape.

The planning history of the area, including Galway County Council Planning Ref. 09/303 and Galway County Council Planning Ref. 17/1538, further reinforces the sensitivity of the receiving environment and its limited capacity to accommodate visually intrusive development.

The proposed development conflicts with the objectives of the Galway County Development Plan 2022–2028, including the requirement to protect landscape character, safeguard visual amenity, avoid visually intrusive development and ensure appropriate integration with the receiving environment.

In these circumstances, it has not been demonstrated that the proposed development will not give rise to significant adverse effects on landscape character and visual amenity.

The EIAR does not provide a robust, transparent or reliable assessment of these effects and is therefore materially deficient.

Accordingly, the proposed development represents a significant and inappropriate intrusion into the rural landscape and is not consistent with the proper planning and sustainable development of the area.

3.9 Noise & Vibration

The assessment of noise and vibration within the Environmental Impact Assessment Report (EIAR) does not adequately reflect the sensitivity of the receiving environment, the operational characteristics of the proposed development or the potential for cumulative and long-term effects. Critically, the EIAR's own analysis concedes that if the development operates at the maximum noise levels permitted under the EPA NG4 Guidance — which it simultaneously predicts will be imposed as planning conditions — the resulting effect on residential receptors would be Profound at four of the five identified Noise Sensitive Locations (NSLs). The conclusions of the EIAR are therefore not supported.

3.9.1 Overview of Assessment

The EIAR (Chapter 9) assesses the likely noise and vibration impacts associated with the construction and operation of the proposed development. It concludes that, with mitigation measures in place, noise impacts will be within acceptable limits and not significant. That conclusion is derived from modelled scenarios using DGMR iNoise 2024.1 software (Appendix 9.3.2, Vol. 3), assumed operational profiles, and reliance on acoustic treatment whose performance has not been independently verified under all real-world conditions.

The assessment does not sufficiently reflect the variability inherent in the operation of a peaker plant, the uncertainty in operational frequency, or the sensitivity of the receiving rural environment at night. Accordingly, it is submitted that the EIAR underestimates the potential for adverse effects on residential amenity.

Table 9-11 - Details of Noise-sensitive Locations

NSL Ref	Approximate Distance to Proposed Building (m)	NSL Type
R01	650	Residential
R02	650	Residential
R03	1,200	Residential
R04	450	Rathmorrissey Lodge – Residential
R05	850	Residential

Applicants EIAR Table 9-11 Showing Receptors locations

3.9.2 Receiving Environment and Receptor Sensitivity

The receiving environment is characterised by dispersed rural settlement and low background noise levels. There are five identified NSLs in proximity to the proposed development, the closest of which (R04, Rathmorrissey Lodge) is approximately 450 m from the proposed building, and R01 and R02 are each approximately 650 m away (EIAR, Table 9-11 see above).

The EIAR assesses the site against the EPA NG4 Low Background Noise screening criteria. It records measured night-time LA90 values of 33 dB at UN1, 34 dB at UN2, 34 dB at AT1, and 38 dB at AT2 (EIAR, Table 9-7). All four locations fail the NG4 night-time Low Background

Noise threshold of ≤30 dB LA90, meaning the EIAR applies the 'All Other Areas' criteria rather than the more precautionary 'Low Background Noise' limits. This classification is directly dependent on the adequacy of the baseline survey. As set out in Section 3.9.2.1 below, the survey is not adequate to support it.

The proposed development introduces industrial noise from a gas turbine and associated plant at significant sound power levels. The EIAR's own Appendix 9.3.5 records the untreated gas turbine exhaust at 162 dB(A) overall sound power, reducing to 95.7 dB(A) with acoustic treatment. The untreated inlet is 154 dB(A), reducing to 105 dB(A). The shunt reactor is assessed at 94 dB(A), the emergency diesel generator at 100.1 dB(A), and the pressure reduce kiosk at 96 dB(A). These are substantial industrial noise sources being introduced at permanent proximity to rural residential receptors.

The gas turbine, pre-heat boilers and mechanical ancillaries are well-established sources of tonal and low-frequency noise. The EIAR states at Section 9.10.2.1 that "noise emissions will be broadband in nature and will not contain any tonal or impulsive elements." This assertion is made without any independent verification or measurement data. No tonal assessment against LAr,T criteria — the standard explicitly provided for in the EIAR's own acoustic glossary (Appendix 9.1, Vol. 3) — is presented. The assertion is insufficient to discharge the burden of demonstrating no tonal impact.

3.9.2.1 Baseline Noise Survey and Limitations

The baseline noise survey is the foundation on which the entire impact assessment rests — including the classification of the site as 'not a Low Background Noise area', which in turn determines which (less precautionary) noise limits are applied. The survey is not adequate to support these conclusions.

The attended survey programme comprised: a single daytime session (12:30–14:45hrs on 12 May 2025 at AT1 and AT2); and a single evening/night-time session (21:00hrs 22 September to 02:00hrs 23 September 2025 at AT1 and AT2). Unattended monitoring at UN1 and UN2 ran from 15:00hrs 12 May to 15:00hrs 16 May 2025 — a four-day period. All survey periods were undertaken in dry and calm weather conditions (EIAR, Section 9.6.2.2).

The specific deficiencies are as follows:

- The attended daytime survey (12:30–14:45hrs) represents a mid-afternoon snapshot only. It does not capture early morning or evening transition periods, which are typically more sensitive in terms of human perception. The measured daytime LAeq at AT1 averaged 60 dB and AT2 averaged 50 dB, dominated by motorway traffic. No attended measurements were taken outside of these narrow windows.
- The single night-time session ended at 02:00hrs, covering only part of the defined Lnight period (23:00–07:00hrs, per Appendix 9.1, Vol. 3). The quietest pre-dawn hours were not captured.

- All surveys were conducted in dry and calm conditions. The EIAR's own noise model (Appendix 9.2, Vol. 3) uses ISO 9613-2:2024 and applies atmospheric conditions specifically chosen to model worst-case propagation. The baseline surveys do not capture conditions of stable atmosphere and temperature inversion — conditions the same model acknowledges can significantly enhance noise propagation at night. Baseline levels recorded under calm propagation conditions are therefore likely to understate measured noise levels under worst-case meteorological conditions, biasing the classification away from Low Background Noise.
- The EIAR itself acknowledges (Table 9-7) that the attended location AT1 records an evening LA90 of 38 dB against a Low Background Noise threshold of ≤35 dB, and a night-time LA90 of 34 dB against a threshold of ≤30 dB. The margin by which these locations fail the Low Background Noise test is narrow. Given the limited and unrepresentative survey, there is no reliable basis for concluding the area does not meet Low Background Noise criteria under all conditions.
- The EIAR provides no justification for the selection of monitoring locations. In dispersed rural settlement, localised variations in topography and proximity to farm activity result in differing baseline conditions at individual dwellings. The four monitoring locations may not be representative of the quietest NSLs.
- The EIAR states at Section 9.12 that "there were no difficulties encountered during preparation of this chapter." This is inconsistent with the acknowledged limitations of a short survey programme conducted exclusively in good-weather conditions.

Where baseline noise levels are underestimated, the significance classification is systematically biased in the applicant's favour. Had the Low Background Noise criteria applied, the permitted night-time limit would have been 35 dB LAeq rather than 45 dB LAeq. The choice of classification is therefore not a technicality; it directly determines whether the predicted night-time impacts are assessed as compliant.

3.9.3 Operational Noise and Uncertainty

This section identifies what is, in the submission's view, the most significant deficiency in the EIAR's noise assessment: the applicant's own acknowledgement at Section 9.8.2.3 that operation of the plant at the maximum permitted EPA NG4 noise levels would give rise to Profound impacts on the majority of NSLs.

Section 9.8.2.3 of the EIAR states explicitly:

"If operation of the project resulted in this noise level at the receivers, when compared to the measured night time background levels, this would be classified as a Significant to Very Significant effect at R04 and a Profound effect at R01, R02, R03 and R05."

The ‘this noise level’ referred to is 45 dB LAeq,T at night — the maximum permitted limit under EPA NG4 Guidance, which the EIAR simultaneously states at Section 9.8.2.3

“it is anticipated that a condition requiring compliance with the above noise limits will be imposed on the permission for the Proposed Project, if granted.”

The EIAR attempts to dismiss this finding by characterising it as a worst-case scenario that will not materialise in practice, noting that the plant will operate intermittently and that predicted actual levels are below the EPA limits. This dismissal is inadequate for the following reasons:

- A planning permission granted subject to an EPA NG4 noise limit of 45 dB LAeq at night creates a legally binding permission to operate up to that limit. The applicant cannot simultaneously seek permission to operate up to 45 dB and contend that a 45 dB assessment is merely hypothetical. The grant of permission must be assessed against the full extent of what is permitted.
- The predicted noise levels in Table 9-22 show Scenario A (standard operations) achieving 33–35 dB LAeq at the nearest NSLs. The margin between those predicted levels and the 45 dB permitted limit is 10–12 dB. Given the stated model accuracy of ±3 dB (Appendix 9.3.4, Vol. 3), the 10 dB headroom cannot be fully relied upon under all combinations of operational loading and meteorological conditions.
- The EIAR’s predicted levels are based on a single assumed operational scenario. As a peaker plant, actual operation is demand-driven and may involve higher turbine loads, extended run periods, or concurrent start-up of multiple plant items not fully reflected in the modelled scenario. No sensitivity analysis or upper bound scenario is presented.
- The EIAR’s own significance tables (Tables 9-24 and 9-25) classify the predicted night-time impact at R01, R02 and R03 under Scenario A (standard operations, predicted at 33–35 dB) as ‘Slight, Moderate’ — not imperceptible. Even before the Profound scenario, the development generates acknowledged impacts on residential amenity at night.

In these circumstances, the EIAR does not provide a reliable basis for concluding that the development will not give rise to significant adverse effects on residential amenity. The concession at Section 9.8.2.3 is determinative.

3.9.4 Assessment Methodology and Absence of Statutory Standards

The noise assessment applies EPA NG4 (2016) guidance criteria in the absence of binding statutory Irish noise standards for operational plant. While guidance-based criteria are commonplace, their selection and application here contains material deficiencies.

- The EIAR applies the ‘All Other Areas’ NG4 limits (night-time 45 dB LAeq,T) on the basis of the baseline survey classification. As argued in Section 3.9.2.1, that classification is not reliably established. Under the more precautionary Low Background Noise criteria, the night-time limit would be 35 dB LAeq,T — a 10 dB

difference that would render Scenario A's predicted levels (33–35 dB) at or approaching the limit rather than comfortably within it.

- The EIAR applies LAeq as the primary operational noise metric for significance assessment. The EPA NG4 daytime and evening limits are expressed as LAr,T, which includes adjustments for tonal and impulsive character. No LAr,T assessment is presented. The EIAR's assertion that noise will be 'broadband and non-tonal' (Section 9.10.2.1) is unverified and insufficient to discharge this assessment requirement.
- The noise model uses ISO 9613-2:2024 and computes LAT(DW), the downwind average sound pressure level under adverse meteorological conditions (Appendix 9.3.3, Vol. 3). The EIAR treats this as a typical rather than worst-case scenario. The standard's own provisions, as described in Appendix 9.3.3, state it applies to conditions including wind from source to receiver and moderate ground-based temperature inversion. These represent enhanced propagation conditions, not average ones.
- The inherent modelling accuracy of ±3 dB across all distances (Appendix 9.3.4, Vol. 3, Table 1) is not carried into compliance demonstrations. A 3 dB variation is equivalent to a doubling of acoustic energy and is perceptible to the human ear in a quiet rural environment. Compliance claims that fall within this margin are not robust.

3.9.5 Night-Time Noise and Emergency Operation

The EIAR concludes that night-time noise from Scenario A (standard operations) will comply with the 45 dB LAeq,T NG4 night-time limit, with predicted levels of 33–35 dB at the nearest NSLs. However, as set out above, this assessment is undermined by the following:

- The night-time baseline survey covers a single session ending at 02:00hrs, missing the pre-dawn quiet period. Measured night-time LA90 levels at AT1 (33 dB) and AT2 (39 dB) and unattended locations UN1 (33 dB) and UN2 (34 dB) are based on this limited dataset. These levels are used directly as the background against which significance is assessed (Tables 9-23 to 9-25).
- The EIAR's significance assessment classifies the predicted night-time impact at R01, R02, R03 and R05 as 'Slight, Moderate' even at predicted levels of 33–35 dB LAeq (Table 9-25). These are admitted adverse impacts on residential amenity at night, characterised as long-term in duration.
- The emergency diesel generator is assessed at 100.1 dB(A) sound power (Appendix 9.3.5, Table 4) under a permissive 55 dB LAeq criterion applicable only to emergency use. If frequency of use increases — as may occur over a 25-year operational life as grid conditions evolve — the more permissive criterion is no longer justified and assessment against standard operational limits would be required.
- Night-time meteorological conditions including temperature inversion and low wind speed enhance noise propagation. ISO 9613-2:2024 explicitly acknowledges this

(Appendix 9.3.3, Vol. 3). The EIAR does not present a night-time worst-case propagation scenario.

It **has not been demonstrated** that the development will not give rise to significant adverse effects on residential amenity during night-time periods when receptor sensitivity is highest.

3.9.6 Meteorological Influences on Noise Propagation

The EIAR's noise model applies ISO 9613-2:2024 and calculates LAT(DW), the average downwind sound pressure level under conditions including moderate ground-based temperature inversion (Appendix 9.3.3, Vol. 3). Despite this, the EIAR does not present these as worst-case conditions requiring precautionary assessment.

- The model applies atmospheric attenuation at 10°C and 70% humidity, described in Appendix 9.2 (Vol. 3) as conditions giving relatively low atmospheric attenuation and therefore representing worst-case in that respect. However, no account is taken of ground-hugging propagation under temperature inversions at night, which can further extend the reach of noise from elevated plant sources such as the gas turbine exhaust stack.
- All baseline surveys were conducted in dry and calm weather. Conditions of stable nocturnal atmosphere — when the development is most likely to operate at peak demand — were not captured in the baseline and have not been modelled separately.
- The site is located in an open agricultural landscape with long sight lines in all directions. No natural terrain screening between the proposed plant and R01, R02 or R04 is identified in the EIAR. In such a setting, meteorological enhancement of sound propagation is particularly significant.
- Peak noise events from start-up and high-load operation may coincide with the conditions of greatest atmospheric stability. This combination is not assessed anywhere in the EIAR.

3.9.7 Construction Noise and Traffic

The EIAR concludes that construction noise will be within the adopted 65 dB LAeq,T daytime criterion at all NSLs, citing the 450 m minimum separation between the main site and the nearest receptor (R04). This conclusion, whilst plausible for the main site, is materially inadequate in the context of the underground cable route.

- The underground cable route is 8.1 km in length and will take an estimated nine months to construct (EIAR, Section 9.8.1.2). The route passes through areas where NSLs are at distances of 10–30 m. The EIAR's own Table 9-17 predicts total construction noise levels of 87 dB LAeq at 10 m, 83 dB at 15 m, 77 dB at 30 m, and 75 dB at 40 m from works. All of these exceed the 70 dB LAeq,12hr construction noise criterion at close range.

- The EIAR dismisses the exceedance at close range on the basis that works at any individual NSL will last less than one day (rolling 30–50 m per day method). This is an assessment of duration, not impact. A single day of 83–87 dB construction noise at 10–15 m from a residential dwelling is a significant impact for the occupants. The characterisation as 'not significant' is not supported.
- The access road for the main site is the L3103, a narrow rural road. Construction traffic assessment (Table 9-21) shows an increase from 2,036 to 2,236 AADT in the peak construction year, with HGV proportion rising from 10% to 12%. The EIAR characterises the resulting 0.8 dB noise increase as 'imperceptible.' However, this assessment is limited to aggregate traffic flow changes and does not assess individual HGV pass-by events or the proximity of specific dwellings to the L3103.
- No route condition survey of the L3103 is presented. Rural roads that have not been designed for sustained HGV use may generate elevated vibration as well as noise. This is not assessed.

3.9.8 Vibration and Ground Conditions

The EIAR concludes that construction vibration from the main site will be imperceptible, on the basis that piling works are at a minimum of 450 m from all NSLs (Section 9.8.1.4). This assessment does not address the specific ground conditions at the site.

- The EIAR acknowledges at Section 9.8.1.1 that "piling may become necessary in the event that there is a Karst feature under the foundations footprint." The site is located in a karst limestone geological setting. Vibration propagation through fissured karst bedrock is inherently less predictable than through homogeneous soil. The EIAR does not provide a site-specific vibration propagation assessment for this ground condition; it relies on generic piling at 5 m from a standard rig as its reference datum.
- At least one residential property (R04, Rathmorrissey Lodge) is approximately 450 m from the main site but the EIAR does not assess proximity to the access road. The access road is used by construction HGVs and is in close proximity to dwellings along its length. No vibration assessment from HGV traffic is presented.
- The HDD vibration assessment (Section 9.8.1.5) relies on a study from south Dublin in Dublin Boulder Clay and Lucan Formation rock. These are not karst limestone conditions. The transferability of this data to a karst setting is not justified.
- Cumulative vibration from nine months of rolling cable construction, combined with main site piling and HGV traffic, is not assessed in aggregate.

Vibration impacts have been scoped out with greater certainty than the ground conditions and the proximity of construction routes to residential receptors justify.

3.9.9 Cumulative Impacts

The EIAR considers the proposed development largely in isolation. The EIAR does not provide a coherent or integrated assessment of interacting effects with air quality (Chapter 3.6), the water environment (Chapter 3.7), landscape and visual impacts (Chapter 3.8), or artificial lighting. The admitted night-time impact of 'Slight, Moderate' at four NSLs under standard operational conditions (EIAR, Table 9-25) will occur in combination with permanent artificial lighting, which the EIAR identifies will be introduced into a predominantly dark rural environment. These combined effects on residential amenity have not been assessed.

Construction impacts (up to nine months for the cable route alone, plus main site construction) will be followed by a long-term operational phase extending to 31 December 2050 (EIAR, Section 9.2). The sequential and combined nature of these effects over a 25-year operational period has not been assessed in an integrated manner, contrary to the requirements of the EIA Directive as interpreted in *Holohan v An Bord Pleanála* [2018] IESC 48.

3.9.10 Interaction with Biodiversity

The EIAR does not provide a site-specific assessment of the effects of noise on biodiversity, including nocturnal species which may use the surrounding agricultural landscape for foraging and commuting. The combination of industrial noise and the permanent lighting identified in Chapter 3.8 has the potential to cause material disturbance to bats and birds in a manner that the EIAR does not assess. This represents a further limitation in the assessment.

3.9.11 Monitoring and Compliance

The EIAR states at Section 9.11.1 that construction noise monitoring is not required, on the basis that predicted levels are below the adopted threshold at the nearest NSL. It states at Section 9.11.2 that operational monitoring will be undertaken 'if required by planning conditions.' This reactive approach is not appropriate for a development of this scale in a sensitive rural environment, for the following reasons:

- Construction noise levels along the cable route at 10–30 m from dwellings are predicted to exceed the construction noise criterion (EIAR, Table 9-17). In these circumstances, the absence of construction monitoring leaves affected occupants without any mechanism to verify compliance or trigger corrective action.
- The EIAR does not define trigger levels, reporting protocols, or corrective action procedures for operational noise. The proposal to monitor only 'if required' by planning conditions is conditional and reactive, not proactive.
- Given the intermittent and demand-driven nature of OCGT operation, peak noise events may not be captured in scheduled or periodic monitoring. A programme that includes event-triggered monitoring during start-up and high-load operation is required but not proposed.

- The gap between predicted levels (33–35 dB) and the permitted limit (45 dB) is used by the EIAR to justify minimal monitoring. However, as set out above, that gap is not reliably established given the model accuracy of ±3 dB and the limitations of the baseline survey. A precautionary monitoring programme is warranted.

3.9.12 Conclusion on Noise and Vibration

The proposed development introduces both continuous and intermittent industrial noise into a quiet rural environment. The EIAR's own data and analysis disclose the following:

- The gas turbine is the dominant noise source, emitting 162 dB(A) at the untreated exhaust and 95.7 dB(A) after acoustic treatment (Appendix 9.3.5, Vol. 3). These are substantial industrial noise sources whose performance is entirely dependent on the effectiveness of acoustic enclosures and silencers that have not been independently verified.
- The EIAR explicitly acknowledges at Section 9.8.2.3 that if the development operates at the maximum EPA NG4 permitted night-time limit of 45 dB LAeq,T — which the same section anticipates will be imposed as a planning condition — the effect would be Profound at R01, R02, R03 and R05, and Significant to Very Significant at R04. This concession is not resolved or explained away; it is dismissed by reference to predicted levels being lower. A permission must be assessed against the full extent of what it authorises.
- Even at predicted levels, the EIAR classifies the night-time operational impact at R01, R02, R03 and R05 as 'Slight, Moderate' and long-term (Table 9-25). This is an admitted adverse impact on residential amenity in a permanent, long-term form.
- The baseline noise survey is of insufficient duration, spatial coverage and meteorological range to support either the Low Background Noise classification or the significance conclusions derived from it.
- The stated modelling accuracy of ±3 dB (Appendix 9.3.4, Vol. 3) means that predicted compliance at margins of 10–12 dB above the criterion is not as secure as it appears once worst-case operational loading and meteorological conditions are considered.
- No LAr,T tonal assessment is presented, despite the EPA NG4 daytime and evening limits being expressed in LAr,T terms and despite gas turbines being known sources of tonal noise.
- Construction cable route noise is predicted to exceed the 70 dB LAeq criterion at distances of up to 30 m from dwellings along a 9-month works programme, yet no construction monitoring is proposed.
- Vibration impacts in a karst geological setting and from HGV traffic adjacent to residential properties are not adequately assessed.

- Cumulative effects with lighting, air quality and biodiversity disturbance are not integrated.
- No proactive monitoring or compliance framework is proposed.

This approach is inconsistent with the requirements of the Environmental Impact Assessment Directive, as clarified in *Holohan v An Bord Planála* [2018] IESC 48, which requires that environmental effects be assessed in a complete, precise and integrated manner, taking account of cumulative and interacting factors.

The Galway County Development Plan requires the protection of residential amenity, particularly within rural areas where environmental quality is a defining characteristic. The EIAR's own concession of Profound impacts at the maximum permitted operational limits is irreconcilable with that objective.

In these circumstances, the conclusions of the EIAR are not supported and the assessment of noise and vibration is materially deficient. It has not been demonstrated that the proposed development will not give rise to significant adverse effects on residential amenity and environmental quality. Accordingly, the proposed development is not consistent with the proper planning and sustainable development of the area.

3.10 Biodiversity

The assessment of biodiversity within the EIAR fails to adequately characterise the ecological sensitivity of the receiving environment, does not sufficiently address survey limitations and associated scientific uncertainty, and does not provide a reliable assessment of cumulative and indirect ecological effects.

In particular, the EIAR does not demonstrate a clear understanding of the functional ecological value of the site, its role within the wider ecological network, or the potential for indirect effects arising through hydrological pathways.

The EIAR does not meet the standard of a complete, precise and definitive assessment required under the Environmental Impact Assessment Directive. The conclusions reached are not supported.

3.10.1 Overview of Assessment

Chapter 5 of the EIAR (Biodiversity) and Chapter 12 (Water) assess impacts on habitats, flora and fauna, protected species, ecological networks and designated sites. While the EIAR ultimately concludes that residual impacts will be not significant with mitigation, the Non-Technical Summary (NTS, Chapter 5 and Chapter 19) identifies a number of pre-mitigation impacts of note, including:

- Habitat loss, including permanent significant negative impacts on bat commuting and foraging habitats
- Light disturbance to bats — identified as a permanent significant negative impact at local scale (NTS 5.2.3)
- Loss of existing fox den — identified as a permanent significant negative impact at local scale (NTS 5.2.2)
- Mammal entrapment in excavations — identified as a potential permanent significant negative impact (NTS 5.2.2)
- Amphibian habitat deterioration — identified as a short-term significant negative impact (NTS 5.2.2)
- Water quality deterioration through groundwater impacts — identified as a short-term significant negative impact pre-mitigation (NTS 5.2.2)
- Accidental spread of invasive alien plant species during landscaping — identified as a permanent significant negative impact (NTS 5.2.3)
- Effects on birds and mammals including denning habitat
- Risks to amphibians and groundwater-dependent ecosystems

These identified impacts confirm a receiving environment of ecological sensitivity and demonstrate that the proposed development gives rise to a range of potential adverse effects. In such circumstances, a precautionary and evidence-based assessment is required, including a clear evaluation of cumulative and indirect effects and the interaction between biodiversity and

other environmental factors including air quality, noise, and the water environment. This standard has not been met.

3.10.2 Legislative and Policy Context

Chapter 5 of the EIAR (Biodiversity) and Chapter 12 (Water) assess impacts on habitats, flora and fauna, protected species, ecological networks and designated sites. While the EIAR ultimately concludes that residual impacts will be not significant with mitigation, the Non-Technical Summary (NTS, Chapter 5 and Chapter 19) identifies a number of pre-mitigation impacts of note, including:

- Habitat loss, including permanent significant negative impacts on bat commuting and foraging habitats
- Light disturbance to bats — identified as a permanent significant negative impact at local scale (NTS 5.2.3)
- Loss of existing fox den — identified as a permanent significant negative impact at local scale (NTS 5.2.2)
- Mammal entrapment in excavations — identified as a potential permanent significant negative impact (NTS 5.2.2)
- Amphibian habitat deterioration — identified as a short-term significant negative impact (NTS 5.2.2)
- Water quality deterioration through groundwater impacts — identified as a short-term significant negative impact pre-mitigation (NTS 5.2.2)
- Accidental spread of invasive alien plant species during landscaping — identified as a permanent significant negative impact (NTS 5.2.3)
- Effects on birds and mammals including denning habitat
- Risks to amphibians and groundwater-dependent ecosystems

These identified impacts confirm a receiving environment of ecological sensitivity and demonstrate that the proposed development gives rise to a range of potential adverse effects. In such circumstances, a precautionary and evidence-based assessment is required, including a clear evaluation of cumulative and indirect effects and the interaction between biodiversity and other environmental factors including air quality, noise, and the water environment. This standard has not been met.

3.10.3 Confirmed and Recorded Species

The EIAR confirms the presence of a range of protected and sensitive species within the site and surrounding landscape, demonstrating that the receiving environment is actively utilised by fauna and is of high ecological significance.

Bats (Annex IV – Habitats Directive)

All bat species are strictly protected under the EU Habitats Directive. The following **seven species** have been recorded within the study area:

- **Common pipistrelle** (Pipistrellus pipistrellus)
- **Soprano pipistrelle** (Pipistrellus pygmaeus)
- **Nathusius' pipistrelle** (Pipistrellus nathusii)
- **Leisler's bat** (Nyctalus leisleri)
- **Brown long-eared bat** (Plecotus auritus)
- **Whiskered bat** (Myotis mystacinus)
- **Daubenton's bat** (Myotis daubentonii)

The presence of seven species, including those associated with commuting routes, foraging habitat and roosting features, indicates a high level of ecological activity. Hedgerows, field boundaries and water features function as important ecological corridors. Given the strict protection afforded to Annex IV species, it must be demonstrated with certainty that no disturbance or deterioration of breeding sites or resting places will occur. This has not been demonstrated.

Birds (Including Annex I Species – Birds Directive)

The EIAR and the accompanying Delichon Ecology Bird Survey (Appendix 5.1) confirm the presence of a range of species with significant conservation status. The following Red and Amber-listed species of conservation concern (BoCCI 2020–2026) were recorded:

- **Meadow Pipit** (Anthus pratensis) — **Red-listed**; displaying/singing males confirmed within and adjacent to the site footprint
- **Snipe** (Gallinago gallinago) — **Red-listed**; recorded in improved grassland within the Peaker plant footprint
- Skylark (Alauda arvensis) — Amber-listed; singing males confirmed displaying over improved grassland within the site
- Swallow (Hirundo rustica) — Amber-listed; foraging recorded over ponds adjacent to the access route
- Sand Martin (Riparia riparia) — Amber-listed; foraging recorded over ponds
- House Martin (Delichon urbicum) — Amber-listed; foraging recorded over ponds
- Golden Plover (Pluvialis apricara) — Annex I / Red-listed; flock of 46 recorded on grassland within the survey area
- Linnet (Linaria cannabinna) — Amber-listed; recorded along linear scrub adjacent to the access road
- Greenfinch (Chloris chloris) — Amber-listed; recorded in linear woodland fringing the site
- Goldcrest (Regulus regulus) — Amber-listed; recorded in linear woodland fringing the site

- Mallard (Anas platyrhynchos) — Amber-listed; using groundwater-fed ponds west of the access road
- Lesser Black-backed Gull (Larus fuscus) — Amber-listed; recorded over grassland north of the access route
- Starling (Sturnus vulgaris) — Amber-listed; feeding on grassland within the site
- Willow Warbler (Phylloscopus trochilus) — Amber-listed; calling from scrub at the southern boundary

The recording of two **Red-listed species (Meadow Pipit and Snipe) and twelve Amber-listed species**, including an Annex I **Golden Plover flock**, demonstrates that the site and its environs support an assemblage of considerable conservation concern. This is not consistent with a site characterised as being of low ecological value.

Mammals (Including Denning Species)

The EIAR identifies the presence of mammals within the study area, including species utilising the site for foraging, shelter and denning. The NTS identifies potential impacts on denning habitat, indicating that the site supports species sensitive to disturbance, habitat loss and fragmentation. The EIAR does not provide a sufficiently detailed assessment of:

- The location and function of denning sites
- The extent of habitat use within and around the site
- The potential for disturbance or displacement
- The cumulative effects of habitat fragmentation
- Amphibians and Groundwater-Dependent Ecosystems

The EIAR identifies risks to amphibians and groundwater-dependent ecosystems, which are particularly sensitive to changes in hydrology, water quality and habitat conditions. Given the karst limestone setting and the hydrological sensitivity of the site, the potential for indirect impacts via groundwater pathways is increased. This is not adequately assessed (see Section 3.10.10).

Invasive Species

The EIAR identifies the potential for introduction or spread of invasive species during construction and operation through movement of soil and materials, disturbance of existing habitats, and changes to site conditions. The NTS explicitly classifies the accidental spread of invasive alien plant species during landscaping as a permanent significant negative impact (NTS 5.2.3). The assessment does not provide sufficient detail on baseline presence of invasive species, pathways for spread, or the effectiveness of proposed control measures. In the absence of a robust assessment, adverse ecological effects cannot be excluded.

3.10.4 Baseline Conditions and Ecological Value

The EIAR classifies the site as low ecological value grassland and relies on this classification to conclude that biodiversity impacts will be not significant. This characterisation is not supported and is likely to result in a systematic underestimation of ecological sensitivity. The reasons are as follows:

Over-reliance on habitat classification. The assessment focuses on intrinsic habitat value and does not adequately consider the functional role of the site within the wider landscape, including its use by multiple protected and sensitive species.

Underestimation of hedgerows and field boundaries These features provide ecological connectivity, foraging and shelter habitat, and confirmed bat commuting routes. Their loss may result in impacts extending well beyond the immediate site footprint.

Inconsistency with recorded species data. The confirmed presence of seven bat species, two Red-listed bird species, twelve Amber-listed bird species including an Annex I Golden Plover flock, and mammals and amphibians is directly inconsistent with a classification of low ecological value.

Failure to consider wider ecological context The EIAR does not adequately assess interaction with surrounding habitats, ecological networks, landscape connectivity, or the role of the site within the broader ecological system.

Absence of temporal baseline assessment. A review of historical aerial imagery (Appendix E) indicates progressive modification of the site including alteration of field boundaries, hedgerow removal and ground disturbance. Without a temporal assessment of habitat change, it is not possible to determine whether biodiversity loss or fragmentation has already occurred, or how this may influence current ecological function. The baseline surveys represent a snapshot in time and do not capture the full variation in species activity; habitat use or ecological function.

Aquifer sensitivity not integrated into biodiversity baseline. The NTS (Chapter 12) confirms that the bedrock aquifer beneath the site is designated as a Regionally Important Aquifer and that part of the development is underlain by the Galway Bay Groundwater Dependent Terrestrial Ecosystem (GWDTE), which is connected to a Special Area of Conservation. This hydrological sensitivity is not adequately integrated into the biodiversity baseline assessment.

In these circumstances, the EIAR does not provide a complete, precise and definitive characterisation of baseline ecological conditions, and the conclusions reached are not supported.

3.10.5 Survey Methodology and Scientific Uncertainty

The ecological assessment relies on baseline surveys subject to material limitations in scope, timing and methodology. These limitations introduce scientific uncertainty and reduce confidence in the conclusions reached across all species groups.

Ornithology

Breeding bird surveys were undertaken on 2 May, 23 May and 26 June 2025 only, with no coverage during March, April, July or August. Breeding bird activity extends from March to August and requires repeated survey effort across this full period to accurately identify territories, nesting behaviour and species presence. The survey window as presented is insufficient to support robust conclusions regarding species presence, distribution or absence — and is particularly inadequate given the Red and Amber-listed species recorded (see Section 3.10.3).

Bats

Activity surveys were undertaken using static detectors over a 13-night period between 4 June and 17 June 2025 only. Established best practice requires survey coverage across the full May to September activity period. The monitoring period represents a **short-duration snapshot** that does not capture commuting routes, foraging patterns or seasonal variation in activity, particularly for species active at the margins of the activity season.

Amphibians

The amphibian survey was undertaken on 1 July 2025, outside the recognised breeding season of February to May. Given the confirmed presence of suitable habitat and the identification of smooth newt (Lissotriton vulgaris), a single out-of-season visit is insufficient to determine presence or absence. This represents a material gap in the assessment.

More generally, the absence of recorded species cannot be taken as confirmation of absence, particularly for mobile, nocturnal or seasonally active species. The EIAR does not adequately assess how survey limitations affect impact prediction, impact significance, or the effectiveness of proposed mitigation.

In accordance with the judgment in Sweetman v An Bord Pleanála, it is not sufficient to rely on incomplete or uncertain information. Where reasonable scientific doubt remains, it cannot be concluded that the proposed development will not give rise to adverse effects on biodiversity. This standard has not been met.

3.10.6 Habitats and Ecological Function

The EIAR confirms the presence of hedgerows, scrub habitats and mature trees within the site and along the cable route and acknowledges that their removal would result in a permanent significant negative impact in the absence of mitigation. The following issues arise:

Internal Inconsistency — Hedgerow Value

The EIAR describes hedgerows as being of limited ecological value while simultaneously confirming they are actively used by bats as commuting corridors and by multiple Red and Amber-listed bird species for nesting and foraging. These findings are mutually incompatible. The hedgerow network is demonstrably functionally important and cannot reasonably be classified as low value.

Adequacy of Proposed Mitigation

The EIAR identifies hedgerow removal as a permanent significant negative effect prior to mitigation yet does not demonstrate that replacement planting will maintain ecological function or connectivity. Replacement planting would require a substantial period — potentially decades — to provide equivalent ecological function. During this interval, ecological connectivity will remain reduced, bat commuting routes disrupted, and nesting habitat unavailable. This prolonged impact is not adequately assessed.

The NTS (Section 5.3.2) states that native Irish plant species will be used during landscaping and that periodic inspections will be carried out every six months for two years after planting. This monitoring commitment is wholly inadequate: a two-year monitoring window does not address the decadal timeframe required for established hedgerows to provide equivalent ecological function, and no evidence is provided that the proposed planting will restore the connectivity and structural complexity of the removed hedgerow network.

Impact on Mature Trees and Root Systems — Cable Route

The Tree Survey (Appendix 5.3, Independent Tree Surveys Ltd, October 2025) records Woodland W1 as Category A — the highest arboriculturally value category, indicating trees capable of contributing for a minimum of 40 years. This woodland is located directly adjacent to the proposed cable route. The survey also records 13 tree groups, 1 hedge and 54 individual trees along the cable route and explicitly warns of potential root spread under road carriageways.

Trenching for the underground cable installation has the potential to:

- Sever structural roots of Category A woodland and mature roadside trees
- Cause long-term decline, instability or loss of trees on third-party lands
- Disrupt bat commuting routes dependent on the tree canopy corridor
- Remove bird nesting habitat provided by mature tree structure

The Tree Survey itself states that where significant roots are encountered during trenching, there is no realistic scope for retention as the cable installation requires full excavation of the trench. The EIAR's reference to 'remedial works' does not adequately address or mitigate the potential for permanent ecological loss associated with mature tree damage.

In these circumstances, it has not been demonstrated that the proposed development will avoid adverse effects on habitats or maintain ecological function. The conclusions of the EIAR are not supported.

Photo 20 - trees at north eastern boundary wall – good foraging habitat for bats

Image above taken from Applicants Appendix 5.2 Bat Report, page 15

3.10.7 Bats

Seven bat species — all strictly protected under the EU Habitats Directive — have been confirmed within the site and surrounding area (see Section 3.10.3 for the full species list). The proposed development will give rise to the following impacts on bat populations:

- Habitat loss and fragmentation through removal of hedgerows confirmed as bat commuting corridors
- Disturbance from construction and operational activity
- Artificial lighting disrupting commuting routes and foraging behaviour (see Section 3.8)
- Noise and vibration causing disturbance and displacement (see Section 3.9)
- Root severance along the cable route damaging mature tree canopy used as commuting habitat (see Section 3.10.6)

These impacts are not adequately assessed in an integrated manner, particularly in the context of cumulative effects (see Section 3.10.11). The EIAR relies on planting and lighting controls as mitigation but does not demonstrate that these measures will maintain ecological connectivity or functional habitat use.

The NTS acknowledges that lighting disturbance to bats is a permanent significant negative impact at local scale (NTS 5.2.3) and that light levels will be designed to 2700K with no light exceeding 1 lux past the site boundary (NTS 5.3.2). However:

No detailed bat-specific lighting impact assessment has been provided

The NTS does not address the cumulative effect of lighting on bats in combination with habitat loss and noise

The adequacy of a 1 lux boundary limit has not been evidenced by species-specific data for the seven confirmed species

The NTS confirms the proposed 36m high telecommunications mast within the site — the operational lighting requirements for an elevated structure of this height have not been assessed in the context of bat flight corridors

The temporal scope of bat surveys — a 13-night window in June only, against a recognised activity season of May to September — is insufficient to characterise commuting routes, roost locations or seasonal variation in activity. Given the strict protection afforded to Annex IV species, a high degree of scientific certainty is required to demonstrate that the proposed development will not cause disturbance, injury or mortality, or result in deterioration of breeding sites or resting places. In circumstances where survey limitations, uncertainty in impact prediction, and reliance on unproven mitigation measures are all present, reasonable scientific doubt remains.

In accordance with *Sweetman v An Bord Pleanála*, where such doubt exists, it cannot be concluded that the development will not adversely affect protected species. This standard has not been met. The conclusions of the EIAR are not supported.

3.10.8 Birds

The EIAR and the Delichon Ecology Bird Survey (Appendix 5.1) confirm the presence of an assemblage of significant conservation concern, including two Red-listed species and twelve Amber-listed species as detailed in Section 3.10.3. Of particular note:

- Meadow Pipit (Red-listed) — singing males displaying over improved grassland within the site footprint, with breeding behaviour (code S, H) confirmed across multiple survey dates
- Snipe (Red-listed) — flushed from improved grassland within the Peaker plant footprint during wintering surveys
- Golden Plover (Annex I / Red-listed) — flock of 46 recorded on grassland within the survey area in January 2025
- Skylark (Amber-listed) — singing/displaying males confirmed within the site on all three breeding survey visits
- Swallow, Sand Martin, House Martin (Amber-listed) — foraging over groundwater-fed ponds directly adjacent to the access route

The proposed development will give rise to the following impacts on bird species:

- Permanent loss of grassland and hedgerow habitat used for breeding, foraging and shelter by multiple Red and Amber-listed species

- Disturbance and displacement during construction and operation, including during the breeding season (March to August)
- Loss of nesting habitat for species dependent on hedgerows and scrub
- Artificial lighting altering nocturnal behaviour and extending disturbance into night periods
- Cumulative disturbance from noise and operational activity (see Sections 3.9 and 3.10.11)

The NTS acknowledges that the overall landscape change will be moderate adverse during construction (NTS Section 6.2.1). The visual impact assessment identifies viewpoints 1, 2, 5, 7, 8 and 13 as experiencing moderate adverse visual effects during both construction and operation. These viewpoints correspond to the immediate rural and agricultural landscape within which the confirmed bird assemblage forages and breeds. The visual disturbance arising from construction activity, the 30m exhaust stack, large above-ground tanks and the 36m telecommunications mast has not been adequately assessed in the context of breeding bird disturbance and displacement.

The breeding bird survey covered only three dates — 2 May, 23 May and 26 June 2025 — with no coverage during March, April, July or August. The full breeding season for resident and migratory species extends across this entire period. Early season residents, late migrants and species displaying prolonged breeding activity have not been adequately surveyed.

Replacement planting cannot replicate established hedgerows within a reasonable timeframe. The prolonged loss of nesting habitat and ecological connectivity during the establishment period is not assessed. It has not been demonstrated that adverse effects on bird species, including those protected under the EU Birds Directive, will be avoided. The conclusions of the EIAR are not supported.

3.10.9 Mammals and Amphibians

The EIAR confirms the presence of mammals and identifies the potential for amphibian species, including fox (Vulpes vulpes) and smooth newt (Lissotriton vulgaris). These species utilise the site for foraging, shelter and movement and form part of the wider ecological network.

Mammals

The NTS identifies potential impacts on denning habitat, confirming that the site supports species sensitive to disturbance and habitat change. The EIAR does not adequately assess:

- The location and function of denning sites
- The extent of habitat use within and around the site
- The potential for disturbance or displacement during construction and operation
- The cumulative effects of habitat fragmentation on movement corridors

The NTS confirms that mammal entrapment in excavations is a potential permanent significant negative impact (NTS 5.2.2). This is a direct consequence of the scale of excavation required — particularly for the 8.1km underground cable route — yet the EIAR does not provide a sufficient assessment of the risk to ground-dwelling species, or of the monitoring and mitigation required to prevent mortality during construction.

Amphibians

The identification of smooth newt indicates suitable habitat and ecological conditions within or near the site. The amphibian survey was undertaken on 1 July 2025 — outside the recognised breeding season of February to May — rendering it unreliable for determining species presence or absence. This represents a material gap given confirmed habitat suitability.

Amphibians are particularly sensitive to changes in hydrology and drainage patterns, water quality and contamination, and habitat disturbance and fragmentation. The EIAR does not assess indirect impacts on amphibians arising through groundwater pathways in the karst limestone setting (see Section 3.10.10).

Combined Effects

Mammals and amphibians rely on connected habitats, stable environmental conditions and predictable movement corridors. The combined effects of habitat loss, noise and disturbance, lighting and hydrological change may give rise to long-term displacement, behavioural change and reduced habitat utilisation. These cumulative and interacting effects are not adequately assessed (see Section 3.10.11).

In these circumstances and having regard to the survey limitations identified in Section 3.10.5, it has not been demonstrated that the proposed development will not give rise to adverse effects on mammal and amphibian species. The conclusions of the EIAR are not supported.

Fox den near site at Rathmorrissy

3.10.10 Hydrological Pathways and Groundwater-Dependent Ecosystems

The site is located on karst limestone geology, characterised by high groundwater vulnerability, rapid subsurface flow pathways, and direct connectivity between surface and groundwater systems.

The NTS (Chapter 12) confirms the following baseline conditions of direct relevance to biodiversity:

- The bedrock aquifer is designated as a Regionally Important Aquifer
- Karst formations are present at the site
- Part of the development is underlain by the Galway Bay Groundwater Dependent Terrestrial Ecosystem (GWDTE), which is connected to a Special Area of Conservation
- Six private water abstractions for agricultural and domestic purposes exist in the area
- No surface water bodies are present within 2km, confirming that groundwater is the primary hydrological pathway of concern

The proposed development introduces multiple potential contamination pathways, including:

- Diesel fuel storage in two above-ground bunded tanks with a combined capacity of 5,470 tonnes (6,670m³) — the largest single contamination risk on the site (NTS 2.2)
- One tonne of propane gas stored for turbine start-up — sufficient for approximately 30 start events (NTS 2.2)
- Contaminated firewater runoff — the EIAR identifies underground firewater retention tanks but does not assess overflow risk in a karst setting
- Construction phase runoff and soil disturbance across a 19.17-hectare greenfield site
- Chemical storage associated with turbine, substation and water treatment plant operation

In a karst environment, contamination may travel rapidly, bypass natural filtration, and reach off-site receptors including groundwater-dependent habitats, before adequate response is possible. The EIAR does not provide an integrated assessment of how these contamination pathways may affect:

- The Galway Bay GWDTE, which is directly underlain by part of the development
- Wetland and riparian habitats in the wider landscape
- Amphibian breeding habitat dependent on clean groundwater
- The integrity of Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA, which are identified in the Natura Impact Statement as requiring Stage 2 Appropriate Assessment

This assessment gap is particularly significant given the confirmed presence of amphibian species and the recorded use of groundwater-fed ponds by multiple bird species (Mallard, Moorhen, Swallow, Sand Martin, House Martin) identified in the Bird Survey (Appendix 5.1). The EIAR does not assess how potential hydrological disruption or contamination may affect these water-dependent species and habitats.

The NTS states that the Natura Impact Statement concludes beyond reasonable scientific doubt that there will be no adverse effect on the integrity of any European site (NTS pp. 13–14). However, this conclusion is reached on the basis of proposed mitigation measures whose adequacy has not been independently verified, and in the context of a groundwater assessment that does not provide a receptor-based hydrological impact pathway analysis for ecological receptors. Given the GWDTE underlies part of the site and is connected to a SAC, a higher standard of assessment is required.

In the absence of a receptor-based hydrological impact assessment, it has not been demonstrated that the proposed development will not give rise to indirect adverse effects on biodiversity through groundwater pathways. The conclusions of the EIAR are not supported.

3.10.11 Cumulative and Interaction Effects

The EIAR does not provide a coherent and integrated assessment of cumulative and indirect ecological effects. This is contrary to the requirements of the EIA Directive and established case law, including Sweetman v An Bord Pleanála and Holohan v An Bord Pleanála, which require that adverse effects be excluded beyond reasonable scientific doubt.

The following interactions are not adequately assessed:

- Interaction between habitat loss, artificial lighting (Section 3.8) and noise (Section 3.9) on bat commuting behaviour and foraging activity
- Combined effects of construction disturbance and operational noise on breeding bird success, including Red and Amber-listed species confirmed within the site
- Interaction between hydrological disruption and ecological effects on groundwater-dependent habitats and amphibian populations (Section 3.10.10)
- Cumulative fragmentation of the ecological network through hedgerow removal, cable route trenching and tree root severance
- Interaction between direct habitat loss and indirect effects on connected habitats and species in the wider landscape
- Long-term ecological impacts arising from the extended period during which replacement planting will fail to provide equivalent ecological function
- Cumulative visual disturbance on breeding birds from the combination of construction activity, the 30m stack, large storage tanks and the 36m telecommunications mast within a rural agricultural landscape (NTS Section 6.2.2, viewpoints 1, 2, 5, 7, 8, 13)
- Combined ecological effects of the proposed Gannow Windfarm (Pl. Ref. 25/61412) — which the EIAR acknowledges as a cumulative project — on shared ecological corridors, bird species and bat populations in the wider landscape (NTS Section 16.2)
- Noise from construction and operation across a 19.17ha site over an 18-month construction period plus operational lifespan to 2050 — assessed under traffic and noise chapters in isolation, without integrating impacts on ecological receptors

These interactions are particularly significant in a karst landscape where ecological receptors are closely linked, contamination pathways are interconnected, and impacts may propagate across multiple environmental media. The failure to assess these interactions means that the true extent of ecological impact cannot be determined from the EIAR as presented.

3.10.12 Mitigation and Residual Effects

The EIAR proposes a range of mitigation measures, including replacement planting, lighting controls, and timing restrictions on vegetation clearance. However, the adequacy of these measures has not been demonstrated.

Key deficiencies in the proposed mitigation include:

- **Replacement planting.** No evidence-based assessment is provided to demonstrate that replacement planting will provide equivalent ecological function to the hedgerows and mature trees being removed. Established hedgerows and mature trees provide complex structural habitat that takes decades to develop. During the establishment period, ecological connectivity will remain reduced and habitat function will be diminished. The NTS commits only to inspections every six months for two years (NTS 5.3.2) —

this monitoring window is wholly disproportionate to the timescale of ecological recovery.

- **Lighting controls.** Proposed lighting controls are described in general terms. No detailed lighting impact assessment has been undertaken in relation to bat species, and no evidence is provided to demonstrate that proposed controls will prevent disruption to commuting routes and foraging activity. The presence of a 36m telecommunications mast within the site raises concerns regarding elevated lighting requirements that have not been addressed in the EIAR.
- **Timing restrictions.** Proposed restrictions on vegetation clearance during the breeding season do not address the broader loss of nesting habitat resulting from permanent hedgerow removal, nor the prolonged absence of equivalent replacement habitat.
- **Cable route tree protection.** The EIAR's reference to remedial arboricultural works during cable installation does not adequately address the risk of permanent root damage to Category A woodland (W1) and mature roadside trees identified in the Tree Survey (Appendix 5.3). The Tree Survey itself acknowledges that where significant roots are encountered, there is no realistic scope for retention.
- **Invasive species management.** No detailed invasive species management plan is provided, nor is any assessment of baseline invasive species presence or spread pathways included. The NTS classifies accidental spread of invasive species as a permanent significant negative impact (NTS 5.2.3) yet proposes only a two-year post-planting monitoring programme as mitigation (NTS 5.3.2). This is not sufficient.
- **Mammal entrapment risk during cable excavation.** The NTS identifies mammal entrapment in excavations as a potential permanent significant negative impact (NTS 5.2.2). The EIAR proposes a camera trap survey at the fox den as mitigation but does not address the broader entrapment risk across the 8.1km underground cable trench, which will require extensive and prolonged open excavation.

In these circumstances, the proposed mitigation measures do not provide sufficient certainty that adverse ecological effects will be avoided or reduced to a non-significant level. The conclusions of the EIAR are not supported.

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- **Replacement planting.** No evidence-based assessment is provided to demonstrate that replacement planting will provide equivalent ecological function to the hedgerows and mature trees being removed. Established hedgerows and mature trees provide complex structural habitat that takes decades to develop. During the establishment period, ecological connectivity will remain reduced and habitat function will be diminished. The NTS commits only to inspections every six months for two years (NTS 5.3.2) — this monitoring window is wholly disproportionate to the timescale of ecological recovery.
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mast within the site raises particular concerns regarding elevated lighting requirements that have not been addressed in the EIAR.

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In these circumstances, the proposed mitigation measures do not provide sufficient certainty that adverse ecological effects will be avoided or reduced to a non-significant level. The conclusions of the EIAR are not supported.

3.10.13 Conclusion on Biodiversity

The proposed development will give rise to a range of direct and indirect adverse effects on biodiversity within and surrounding the site. The EIAR fails to demonstrate, based on a complete, precise and reliable assessment, that these effects can be adequately controlled or mitigated.

In particular, the EIAR fails to demonstrate that:

- The ecological baseline has been adequately characterised, having regard to survey limitations, temporal gaps and the confirmed presence of protected and conservation-listed species
- The site is correctly classified as being of low ecological value, given the confirmed presence of seven Annex IV bat species, two Red-listed bird species, twelve Amber-listed bird species including Annex I Golden Plover, and suitable habitat for mammals and amphibians
- Hedgerows and mature trees functioning as bat commuting routes and bird nesting habitat will be adequately protected or replaced
- Category A woodland (W1) and mature roadside trees will not be permanently damaged by cable installation trenching
- Bat populations will not be adversely affected by habitat loss, lighting, noise and the removal of confirmed commuting corridors

- Bird species, including those protected under the EU Birds Directive, will not be adversely affected by habitat loss, disturbance and the prolonged absence of equivalent nesting habitat
- Amphibian and mammal species will not be adversely affected by habitat loss, hydrological change and cumulative disturbance
- The Galway Bay Groundwater Dependent Terrestrial Ecosystem (GWDTE), which underlies part of the site and is connected to Galway Bay Complex SAC, will not be adversely affected through groundwater contamination pathways
- Cregganna Marsh SPA and Inner Galway Bay SPA will not be adversely affected, given that Stage 2 Appropriate Assessment was required and the NIS conclusions rely on mitigation whose adequacy has not been independently verified
- Cumulative and indirect ecological effects have been fully assessed, including in combination with the proposed Gannow Windfarm
- The proposed mitigation measures are adequate to reduce impacts to a non-significant level

Having regard to the Environmental Impact Assessment Directive, the EU Habitats Directive, the EU Birds Directive, and established case law including Sweetman v An Bord Pleanála and Holohan v An Bord Pleanála, it has not been demonstrated beyond reasonable scientific doubt that the proposed development will not give rise to significant adverse effects on biodiversity.

Accordingly, the assessment of biodiversity is materially deficient, and the proposed development is not consistent with the requirements of proper planning and sustainable development.

3.11 Land, Soils & Geology

3.11.1 Overview of Assessment

Chapter 11 of the EIAR assesses the likely effects of the proposed development on **land, soils and geological conditions**, including site geology and bedrock composition, soil characteristics, ground conditions and stability, contamination pathways, and the effects of construction and excavation. The EIAR concludes that, following mitigation, impacts on land, soils and geology will be **not significant**.

That conclusion should be treated with caution. The proposed development is located within a **karst limestone environment** and involves excavation to bedrock, foundations, drainage works, fuel and chemical storage, and associated underground infrastructure. In such a setting, land, soils and geology are not isolated engineering matters but are intrinsically linked to:

- **groundwater vulnerability** (see Chapter 4.6)
- **ecological pathways and receptors** (see Chapter 3.9)
- **agricultural land use and rural livelihoods**
- the **wider rural landscape** (see Chapter 4.7)

It is submitted that the EIAR **underestimates the sensitivity of the receiving environment** and does not adequately assess the risks associated with excavation, ground disturbance, uncertain subsurface conditions and potential contamination.

A review of historical aerial imagery (Appendix E) indicates that the site has undergone progressive land modification in recent years, including ground disturbance, regrading and alteration of surface conditions. This introduces uncertainty in relation to soil structure, drainage behaviour and ground stability, which is not fully reflected in the EIAR baseline assessment.

3.11.2 Policy Context – Land, Soils, Groundwater and Landscape Protection

he **Galway County Development Plan 2022–2028** requires that development:

- **preserve and enhance landscape character**
- have regard to **landscape sensitivity classification**
- respect **landscape capacity**, particularly in sensitive rural areas

These are **statutory planning objectives** forming part of the decision-making framework.

The Plan also requires that development be appropriately sited and designed so as to **protect environmental resources**, including:

- **soils**
- **groundwater**
- **agricultural land**

In addition, development proposals must demonstrate that they will not give rise to **significant environmental risk**, particularly in areas of known sensitivity.

In the context of a **karst limestone site**, involving excavation, trenching, engineered surfaces, underground infrastructure and contamination risk, it has not been demonstrated that the proposed development complies with these objectives.

3.11.3 Geological Context – Karst Limestone Environment

The EIAR identifies that the site is underlain by the **Burren Formation**, consisting of **karstified limestone**. Regional mapping identified potential karst features near the proposed access road and underground cable route, and the geophysical survey identified **multiple anomalies** interpreted as potential karst features.

Reference is made to Figure 11-15 and Tables 11-1 to 11-4 of Chapter 11 of the EIAR, which indicate **variable subsurface conditions** and the potential presence of **voids and cavities**.

This geological setting is characterised by:

- **fissured and fractured bedrock**
- **underground conduits and dissolution features**
- **cavities and voids**
- **highly variable and unpredictable ground conditions**

The identification of multiple anomalies and areas of high resistivity indicates that **karstification is an active and material feature of the site**, not merely a background condition.

Therefore, the receiving environment is characterised by:

- **high groundwater vulnerability**
- **rapid and unpredictable subsurface flow pathways**
- **limited natural attenuation of contaminants**

In such conditions, contaminants entering the ground may travel rapidly and over considerable distances, potentially affecting **receptors beyond the site boundary**.

This has direct implications for:

- **groundwater protection** (Chapter 4.6)
- **ecological connectivity** (Chapter 3.9)
- **agricultural water supply and land use**
- **landscape sensitivity** (Chapter 4.7)

It is submitted that the **karst geological context significantly increases environmental sensitivity and risk**, and that this is not adequately reflected in the EIAR conclusions.

3.11.4 Limitations of Ground Investigation and Survey Coverage

A critical weakness in the EIAR is that **ground investigation and geophysical surveys are limited in scope**. Investigations were undertaken only within the **northern portion of the site**, while areas associated with the **AIS substation and underground cable route** were not assessed at that stage.

This results in:

- an **incomplete understanding of subsurface conditions**
- **unknown ground conditions** along key infrastructure routes
- **uncertainty in relation to excavation and trenching impacts**

In a **karst environment**, where ground conditions may vary significantly over short distances, this lack of coverage is particularly significant.

It is submitted that the EIAR does not provide a **complete or reliable assessment of ground conditions** across the full extent of the proposed development, and that conclusions regarding stability and environmental impact are therefore **premature**.

This uncertainty is compounded by evidence of prior land disturbance identified in Appendix E, indicating that subsurface conditions may not reflect natural or undisturbed profiles.

3.11.5 Potential Hydrological Connectivity to Designated Sites

The EIAR identifies potential **indirect connectivity via karst groundwater pathways** to European sites, including:

- **Galway Bay Complex SAC**
- **Inner Galway Bay SPA**

As set out in Chapter 3.11.3, karst environments are characterised by **rapid and unpredictable groundwater movement**, and distance alone does not eliminate the potential for impact.

This reinforces the findings of **Chapter 3.9 (Biodiversity)**, where groundwater–ecology connectivity is identified as a key pathway for indirect effects.

It is submitted that the EIAR **underestimates the significance of indirect connectivity via groundwater pathways** and does not provide a sufficiently robust assessment of potential impacts on designated sites.

3.11.6 Ground Conditions and Engineering Constraints

Construction of the proposed development will involve **excavation to bedrock**, foundations and trenching.

As set out in Chapter 3.11.3, karst environments are characterised by **variable and unpredictable ground conditions**, including the potential presence of voids and cavities.

This gives rise to:

- **uncertain bearing capacity**
- **ground instability risks**
- the need for **site-specific engineering solutions**

The EIAR acknowledges that engineering measures may be required to address these conditions, which confirms that the site is **not geologically straightforward**.

This has implications for:

- **construction risk and feasibility**
- **long-term structural integrity**
- potential interaction with **noise and vibration pathways** (see Chapter 3.8)
- **major accident risk**

It is submitted that the EIAR does not adequately assess the **implications of ground variability and uncertainty**, nor the environmental risks arising from such conditions.

3.11.7 Soil Characteristics and Agricultural Context

The site comprises **agricultural land** currently supporting farming activity and contributing to the **rural character of the area**.

The proposed development will result in:

- **permanent loss of agricultural land**
- **soil stripping and compaction**
- replacement with **hardstanding and built infrastructure**

In the context of the karst environment described in Chapter 3.11.3, soils perform a **critical environmental function**, including:

- **protection of groundwater**
- **nutrient retention and regulation**
- support of **agricultural productivity**

The removal or alteration of soils reduces their capacity to perform these functions and may increase **groundwater vulnerability**.

This has direct links to:

- **biodiversity and ecological function** (Chapter 3.9)
- **landscape character** (Chapter 4.7)
- **human health and livelihoods** (Chapter 4.4)

It is submitted that the EIAR does not adequately assess the **functional role of soils**, nor the implications of their permanent loss and alteration within a **sensitive karst setting**.

3.11.8 Radon Potential

Karst limestone environments are associated with **elevated radon potential**.

Excavation, trenching and disturbance of bedrock may:

- alter **radon pathways**
- increase the potential for **radon migration to the surface**
- introduce risks to **construction workers and future site users**

The EIAR does not provide a **detailed assessment of radon risk** in the context of the proposed groundworks and structural development.

3.11.9 Construction Phase Impacts

Construction activities introduce a range of risks, including:

- **ground instability and subsidence**
- **alteration of subsurface drainage patterns**
- **exposure of karst pathways and voids**

As set out in Chapter 3.11.3, karst systems are characterised by **uncertain and variable ground conditions**, which increase the potential for **unforeseen impacts during excavation**.

The EIAR relies on monitoring and management measures within the **Construction Environmental Management Plan (CEMP)**. However, such measures are largely **reactive**, responding to conditions as they arise, rather than addressing the **underlying uncertainty** in ground conditions.

In addition, flood risk assessment is limited, as conventional surface-water mapping does not fully account for **karst hydrology**, where water movement may occur through **subsurface pathways**.

It is submitted that **construction phase risks are underestimated**, particularly in the context of uncertain karst conditions.

3.11.10 Contamination and Pollution Pathways

The proposed development involves potential sources of contamination, including:

- **fuels, oils and chemicals**
- construction materials and associated handling
- operational storage and use of substances

As set out in Chapter 3.11.3, karst environments are characterised by:

- **rapid infiltration**
- **limited natural filtration**
- **unpredictable subsurface pathways**

These conditions significantly increase the risk that contaminants may:

- enter groundwater rapidly
- migrate beyond the site boundary
- affect **off-site receptors**

This has direct implications for:

- **groundwater quality** (Chapter 4.6)
- **human health** (Chapter 4.4)
- **biodiversity receptors** (Chapter 3.9)

It is submitted that the EIAR **underestimates contamination risk** and does not adequately assess **worst-case scenarios** or the potential for **off-site impacts**.

3.11.11 Rural Receptors – Farms, Wells and Agricultural Use

The receiving environment is characterised by **active agricultural land use**, including livestock farming, grassland management and associated rural enterprises.

Agricultural activity in the area is dependent on:

- **soil quality and productivity**
- access to **clean and reliable water supplies**
- compliance with **environmental regulations**

- maintenance of **land integrity and continuity**

In karst environments, groundwater frequently provides the primary source of water for:

- **domestic consumption**
- **livestock watering**
- **agricultural operations**

The EIAR identifies the presence of **private wells, boreholes and group water schemes** within the wider area, including the **Lisheenkyle Group Water Scheme**, as well as individual wells in proximity to the site and along the cable route.

Groundwater Dependency and Agricultural Risk

As set out in Chapter 3.11.3, karst aquifers are highly vulnerable to contamination due to **rapid and direct subsurface pathways**.

In such conditions, contamination arising from:

- fuel or chemical spills
- construction activities
- operational incidents

may enter groundwater quickly and migrate beyond the site boundary.

This creates risks to:

- **private drinking water supplies**
- **livestock health**
- **agricultural production systems**

In a farming context, even low-level contamination may result in:

- loss of **potable water supply**
- restrictions on **livestock use**
- impacts on **food production and marketability**

Regulatory and Compliance Risk

Farmers in the area are subject to regulatory frameworks, including:

- the **Nitrates Directive**
- **Good Agricultural Practice (GAP) Regulations**
- **ACRES scheme** and related Agri-environment measures

These impose strict requirements in relation to:

- **water quality protection**
- **nutrient management**
- **environmental compliance**

Farmers may be held responsible for environmental compliance **regardless of the source of contamination**.

The introduction of industrial development into a **karst environment** therefore introduces **third-party environmental risk** that may affect:

- compliance status
- scheme eligibility
- long-term farm viability

Land and Soil Resource Impact

The proposed development will result in:

- **permanent loss of agricultural land**
- **fragmentation of farm holdings**
- **constraints on land use and access**

This may:

- reduce **farm efficiency**
- limit **future land management options**
- affect the **viability of agricultural operations**

Agricultural soils in this area are not only a production resource but also:

- part of the **ecological system**
- linked to **groundwater protection**
- integral to **landscape character**

Cumulative and Cross-Media Effects

Agricultural impacts arise from the interaction of multiple factors, including:

- **groundwater vulnerability** (Chapter 4.6)
- **soil disturbance** (this chapter)
- **air emissions** (Chapter 4.5)
- **biodiversity change** (Chapter 3.9)
- **noise and disturbance** (Chapter 3.8)

The EIAR does not provide an **integrated assessment** of these combined effects on farming systems.

Conclusion

It is submitted that:

- the EIAR does not adequately assess the **dependency of farming operations on groundwater** in a karst environment
- risks to **private wells, group water schemes and livestock water supply** are underestimated
- the **regulatory implications for farmers** are not adequately considered
- the **loss and fragmentation of agricultural land** is not assessed in terms of long-term viability
- **cross-media impacts** on soils, water and agricultural productivity are not fully evaluated

In a karst environment, environmental effects are not confined to the site boundary and may affect the **wider rural and agricultural system**.

Accordingly, the EIAR does not provide a **complete or reliable assessment** of impacts on agricultural receptors.

3.11.12 Interaction with Hydrogeology

Land, soils and geology are intrinsically linked to **groundwater systems**.

The site overlies a **Regionally Important Karst Aquifer**, characterised by **high permeability and low attenuation capacity** (see Chapter 3.11.3 and Chapter 3.7)

In such conditions:

- surface activities may directly influence **groundwater quality**
- contamination pathways may be **rapid and unpredictable**
- environmental effects may extend **beyond the site boundary**

The EIAR does not provide an adequately **integrated assessment** of geological and hydrogeological interactions.

This represents a significant deficiency, as the assessment of land and soils cannot be considered in isolation from groundwater behaviour in a **karst environment**.

3.11.13 Aquifer and Groundwater Body Status

The groundwater body underlying the site is classified as having **Good Status**.

This indicates:

- **high environmental value**
- a requirement for **protection and maintenance of quality**

It does not indicate an absence of vulnerability.

In the context of the karst conditions described in Chapter 3.11.3, the introduction of new contamination risk is inconsistent with the objective of **protecting groundwater quality**.

The EIAR does not adequately assess the implications of introducing additional risk to a **sensitive and high-value groundwater resource**.

3.11.14 Interaction with Air Quality and Climate

Emissions arising from the proposed development may result in **deposition onto soils and vegetation**.

This may:

- alter **soil chemistry**
- affect **agricultural productivity**
- contribute to **groundwater contamination pathways**

These interactions are particularly relevant in a karst setting, where **soil buffering capacity is limited** and pollutants may transfer more readily to groundwater.

The EIAR does not provide a sufficiently integrated assessment of **cross-media impacts**, including the interaction between air emissions, soils and groundwater.

3.11.15 Decommissioning Phase

The decommissioning phase may involve:

- **renewed excavation and ground disturbance**
- removal of infrastructure
- potential exposure of subsurface pathways

In a karst environment, such activities may:

- reopen or alter **groundwater pathways**
- reintroduce risks of **contamination or instability**

The EIAR does not provide a detailed or robust assessment of **decommissioning impacts**, nor does it demonstrate how risks will be managed at that stage.

3.11.16 EIAR Methodology, Uncertainty and Deferral

Karst systems are inherently uncertain and difficult to characterise.

Karst systems are inherently **complex and uncertain** and require a **high level of investigation and assessment**.

The EIAR relies on:

- **partial ground investigation**
- identification of karst features without full delineation
- **future-stage protocols and mitigation measures**
- construction-phase monitoring

This approach effectively **defers assessment to post-consent stages**.

However, under established case law, including *Holohan v An Bord Pleanála* and *Sweetman v An Bord Pleanála*, an EIAR must provide a **complete, precise and definitive assessment** of environmental effects at the time of decision-making.

Where **reasonable scientific doubt remains**, it is not permissible to rely on mitigation or further investigation to resolve that uncertainty.

In this case, the EIAR does not meet this standard.

3.11.17 Agricultural Viability and Food Production

The proposed development introduces **industrial infrastructure** into an **active agricultural landscape**.

As set out in Chapter 3.11.11, this gives rise to risks including:

- impacts on **livestock and agricultural production systems**
- **loss and fragmentation of agricultural land**
- constraints on **farm operations and land management**

These effects have implications for **long-term farm viability** and rural livelihoods.

The EIAR does not provide a sufficiently detailed assessment of these impacts, nor does it demonstrate consistency with **Development Plan objectives** relating to the protection of agriculture and rural economic activity.

3.11.18 Interaction with Archaeological Sensitivity

The EIAR geophysical survey identified several anomalies (CH047–CH052) indicating **enhanced magnetic responses**, including features associated with **burnt material** and areas of **disturbed or imported ground** (see Chapter 3.16.8).

Burnt material is commonly associated with **archaeological activity**, while disturbance and flooding may obscure underlying features.

This indicates that **subsurface conditions are not fully understood**, and that archaeological potential may be underestimated.

In a karst environment, where subsurface conditions are complex and variable, the interaction between **ground disturbance, geology and archaeological sensitivity** requires careful assessment.

It is submitted that this interaction is not adequately addressed in the EIAR.

3.11.19 Conclusion on Land, Soils and Geology

The proposed development is located within a **sensitive karst limestone environment**, characterised by **complex and uncertain ground conditions** and strong interconnection between **soils, geology and groundwater systems**.

The EIAR fails to provide a **robust and reliable assessment** of impacts on land, soils and geology due to:

- **incomplete site investigation and survey coverage**
- **underestimation of karst-related risk**
- **inadequate assessment of contamination pathways**
- failure to **integrate geological, hydrogeological, ecological and agricultural considerations**
- reliance on **post-consent mitigation and monitoring**

In such environments, the **extent of potential impact is not confined to the site boundary**, and may affect **groundwater, ecological receptors and agricultural systems over a wider area**.

Having regard to the identified deficiencies, and to established legal requirements for a **complete, precise and definitive assessment**, it is not possible to conclude that the proposed development will not give rise to **significant adverse environmental effects**.

Accordingly, the EIAR is **materially deficient**, and the proposed development is not consistent with the requirements of **proper planning and sustainable development**.

3.12 Major Accidents & Disasters

3.12.1 Overview *and COMAH Classification*

The proposed development is subject to the Control of Major Accident Hazards Regulations 2015 (Seveso III Directive) and is classified as a Lower Tier COMAH establishment. It involves:

- Natural gas, including pipeline connection
- Liquefied petroleum gas (LPG), including delivery by tanker
- Significant volumes of diesel fuel (~5,470 tonnes / 6.6–6.7 million litres)

This gives rise to credible major accident scenarios across three categories:

Explosion Hazards:

- Vapour Cloud Explosion (VCE) from gas release
- BLEVE (Boiling Liquid Expanding Vapour Explosion) involving LPG tanker deliveries

Fire Hazards:

- Jet fires, flash fires, diesel pool fires

Environmental Hazards:

- Catastrophic diesel tank rupture
- Firewater contamination and groundwater pollution

The LPG tanker delivery element introduces mobile high-consequence hazard scenarios. The key issue is not the identification of these hazards, but whether the risks have been adequately assessed, quantified and demonstrated to be acceptable in the receiving environment.

The EIAR does not include a robust assessment of credible worst-case scenarios, including catastrophic pipeline rupture, large-scale fuel release, and combined fire and explosion events.

3.12.2 Quantified Consequences and Off-Site Exposure

The EIAR modelling identifies the following consequence distances:

- VCE indoor fatality distance: up to ~292 metres
- BLEVE fireball radius: ~83 metres
- Thermal radiation effects: ~194 metres
- Explosion overpressure: extends beyond the site boundary

These distances confirm that accident consequences are not confined to the site. Identified sensitive receptors in the surrounding environment include:

- Residential properties at Rathmorrissy (~550 m) and further dwellings (~600 m)
- A residential property ~19 metres from the proposed access road
- Private groundwater wells and the Lisheenkyle Group Water Scheme
- Agricultural land, livestock and rural dwellings
- The town of Athenry (~2 km)

The EIAR does not assess gas dispersion behaviour, prevailing wind conditions, or atmospheric stability — factors critical to determining whether flammable gas clouds could migrate beyond the site boundary prior to ignition. In the absence of a receptor-based assessment, it is not possible to determine whether surrounding land uses are adequately protected.

3.12.3 Off-Site Consequences and Motorway Risk

The EIAR confirms that a portion of the M18 motorway lies within identified accident consequence zones. The M17, M18 and M6 network carries approximately 10,000–20,000 vehicles per day. Credible accident scenarios affecting the motorway include:

- Thermal radiation from fire events
- Explosion overpressure effects
- Smoke generation and reduced visibility

The EIAR does not assess driver response to accident scenarios, the interaction between fire/explosion events and motorway traffic, smoke plume impacts on visibility, or the potential for multi-vehicle incidents. This represents a direct and inadequately assessed risk to public safety on a high-speed national transport corridor.

3.12.4 Societal Risk and Acceptability of Fatalities

The EIAR relies on a Societal Risk Expectation Value of approximately 1.3 fatalities. This approach accepts a statistical expectation of fatalities and uses probabilistic modelling to justify risk acceptability.

The introduction of a development which gives rise to an expected loss of life — particularly where such risk extends to public infrastructure and residential receptors — is inconsistent with:

- The precautionary principle
- The requirements of proper planning and sustainable development
- The obligation to protect human health and public safety

The EIAR does not demonstrate that such risk is acceptable in a planning context.

3.12.5 Land Use Compatibility and Seveso III Requirements

Under Article 13 of the Seveso III Directive, appropriate safety distances must be maintained between hazardous establishments and residential areas, areas of public use, and major transport routes.

In this case, the receiving environment includes all three:

- Residential properties within the zone of influence, including one ~19 m from the access road
- The M17/M18 motorway within identified consequence zones
- Agricultural land and rural receptors reliant on environmental quality

The EIAR does not demonstrate that appropriate safety distances have been achieved, that the spatial extent of hazard zones has been fully mapped against receptors, or that off-site receptors are adequately protected. The Lower Tier COMAH classification does not remove this obligation.

3.12.6 Human Health, Groundwater and Environmental Pathways

The receiving environment is characterised by karst limestone geology with high groundwater vulnerability, rapid subsurface flow pathways, and dependence on groundwater for domestic and agricultural use. Multiple exposure pathways exist:

- Airborne pollutants from fire and explosion events
- Contaminated firewater runoff
- Diesel spills and subsurface migration through karst pathways

In a karst environment, contamination may travel rapidly, bypass natural filtration and extend well beyond the site boundary. The EIAR does not provide an integrated, receptor-based assessment of impacts on:

- Nearby residential dwellings and private wells
- The Lisheenkyle Group Water Scheme
- Agricultural activity and livestock

In the absence of such assessment, risks to human health, water supplies and environmental receptors have not been demonstrated to be adequately controlled.

3.12.7 Firewater Containment and MATTE Risk

The development involves storage of approximately 5,470 tonnes of diesel fuel (~6.6–6.7 million litres). The EIAR relies on:

- Bunding
- A firewater retention tank of approximately 1,086 m^3

However, the EIAR also models a catastrophic failure scenario releasing up to 1,667 m^3 of diesel — exceeding the stated containment capacity. This is a clear internal inconsistency.

In a karst environment, such a release would pose a significant risk to groundwater, agricultural land and downstream receptors. The EIAR does not demonstrate that containment systems are sufficient under worst-case conditions, that off-site migration can be prevented, or that a Major Accident to the Environment (MATTE) can be avoided. The potential for significant and uncontrolled environmental impact remains.

3.12.8 Emergency Preparedness and Response

The EIAR does not demonstrate that emergency preparedness is proportionate to the level of risk. Specifically, there is no evidence that:

- Local emergency services have been engaged in site-specific planning
- Training or familiarisation exercises have been undertaken
- Practical emergency response scenarios have been tested

The EIAR also does not assess:

- Emergency response times or the capacity of local services to respond to a major industrial incident
- Whether site access can accommodate multiple emergency vehicles simultaneously
- Evacuation requirements, including zones, alert procedures, and provision for vulnerable individuals

In the absence of this assessment, it has not been demonstrated that a major accident could be effectively managed.

3.12.9 Operational *Fire Safety, Staffing and First Response Capacity*

The EIAR does not demonstrate that the facility will be staffed on a continuous 24-hour basis. For a COMAH-classified installation involving flammable gases, LPG tanker deliveries and large-scale fuel storage, reliance on automated systems and remote monitoring alone raises serious concerns.

The EIAR does not demonstrate that:

- Critical firefighting systems are fully automated with independent redundancy
- Systems can operate under loss of power or communications
- A detailed maintenance, testing and fault-detection regime is in place
- The site can provide 30–60 minutes of independent firefighting capacity during the initial phase

The nearest responding resource is Athenry Fire Station, where staffing availability is limited and response times may exceed 30 minutes. Combined with the absence of demonstrated on-site staffing, unproven automation redundancy, and no evidenced maintenance regime, it has not been demonstrated how a major accident could be safely and effectively managed. This represents a fundamental deficiency in the safety assessment.

3.12.10 Absence of Quantified Impact Assessment

The EIAR does not provide a sufficiently detailed or spatially explicit assessment of:

- Blast zones and thermal radiation impacts
- Receptor exposure
- Off-site consequence mapping

Without this analysis, it is not possible to determine the extent of impact on nearby receptors, whether safety distances are adequate, or whether the development can be safely accommodated. This represents a critical gap in the assessment of major accident risk.

3.12.11 Natural Hazards and Site Vulnerability

The site lies within Flood Zone C. However, this classification is based primarily on surface water assessment and does not account for the behaviour of karst hydrological systems, which are characterised by:

- Rapid infiltration of surface water
- Direct connectivity between surface and groundwater
- Unpredictable subsurface flow pathways

In the event of fuel release, contaminated firewater discharge or chemical spillage, contaminants may infiltrate rapidly, bypass attenuation mechanisms and migrate beyond the site boundary. The EIAR does not adequately assess how these site-specific vulnerabilities may influence the consequences of a major accident. The interaction between natural hazards and accident risk is not fully evaluated.

3.12.12 Wider Off-Site Effects and Dispersion

The EIAR focuses on defined consequence distances but does not adequately assess secondary and wider off-site effects, including:

- Smoke plume generation and airborne pollutant dispersion
- Behaviour of combustion products under varying meteorological conditions
- Influence of wind direction and atmospheric stability
- Potential impacts on Athenry (~2 km) and other more distant receptors

In the absence of such assessment, the true spatial extent of off-site impact on human health and amenity cannot be reliably determined.

3.12.13 Cumulative and Interaction Effects

Major accident risk must be considered in conjunction with other environmental factors:

- Groundwater vulnerability (Chapter 3.7)
- Geology and soils (Chapter 3.11)
- Biodiversity and ecological receptors (Chapter 3.10)
- Human health (Chapter 3.5)

In a karst environment, contamination pathways are interconnected, environmental receptors are closely linked, and impacts may propagate across multiple media. The EIAR does not assess how a major accident event may give rise to simultaneous impacts on water, soil and ecological systems, combined effects on human health and agriculture, or long-term and irreversible environmental consequences.

This is contrary to the requirements of the EIA Directive and established case law, including the Waddenzee judgment and Sweetman v An Bord Pleanála, which require adverse effects to be excluded beyond reasonable scientific doubt.

3.12.14 Planning Precedent and Driver Safety

A relevant precedent exists under PL07.302034 (GCC Ref. 17/1538), where permission for a solar farm was refused due to driver safety impacts (glare and visual distraction). This establishes the principle that development in proximity to high-speed road infrastructure must not compromise road user safety.

The proposed development introduces materially more serious risks, including fire and explosion hazards, BLEVE events and smoke generation. These are direct life safety hazards, not visual disturbance. The EIAR does not demonstrate that motorway users would be adequately protected or that accident scenarios would not give rise to loss of control or multi-vehicle incidents.

3.12.15 Overall Assessment

The proposed development introduces major accident hazards whose consequences extend beyond the site boundary and affect residential properties, groundwater and agricultural receptors, national road infrastructure, and the wider community.

The EIAR fails to demonstrate:

- Risks have been adequately assessed, quantified and shown to be acceptable
- Safety distances in accordance with the Seveso III Directive are appropriate

- Off-site receptors, including residential properties and motorway users, are adequately protected
- Credible worst-case scenarios, including catastrophic failure events, have been fully assessed
- Firewater containment is sufficient, particularly in a karst environment
- Emergency response arrangements, including response time, evacuation and first-response capability, are adequate
- The development can be safely operated, given the absence of demonstrated continuous staffing and proven initial response capacity
- Cumulative and cross-media effects, including groundwater, human health and agriculture, have been adequately assessed

In the absence of a receptor-based analysis of impact, a robust evaluation of worst-case scenarios, and a demonstration of effective emergency response capability, the EIAR does not provide a reliable basis to conclude that this development can be safely accommodated within the receiving environment.

3.12.16 Conclusion

The proposed development constitutes a COMAH-classified installation involving flammable gases, LPG tanker deliveries and large-scale fuel storage, giving rise to credible major accident scenarios including fire, explosion and environmental contamination. The EIAR confirms that consequences extend beyond the site boundary, with identified impact zones affecting:

- Nearby residential properties (~550–600 m from site; one ~19 m from access road)
- Agricultural land, groundwater receptors and the Lisheenkyle Group Water Scheme
- The M17/M18 motorway network
- The wider rural community, including Athenry

Notwithstanding the identification of these hazards, the EIAR fails to provide a complete, precise and reliable assessment demonstrating that the associated risks can be adequately controlled. The characteristics of the site — particularly karst limestone geology and high groundwater vulnerability — significantly increase the potential for uncontrolled environmental impact, and these risks are not adequately addressed.

The EIAR further relies on a statistical expectation of fatalities which, in the context of identified off-site receptors and public infrastructure, is not demonstrated to be acceptable having regard to the precautionary principle, the protection of human health and public safety, and the requirements of proper planning and sustainable development.

Having regard to the Environmental Impact Assessment Directive, the COMAH Regulations and Seveso III Directive, and established case law including Sweetman v An Bord Pleanála, Holohan v An Bord Pleanála and the Waddenzee judgment, it has not been demonstrated beyond reasonable scientific doubt that the proposed development will not give rise to significant adverse effects on human health, public safety or the environment.

Accordingly, the assessment of major accidents and disasters is materially deficient, and the proposed development is not consistent with the requirements of proper planning and sustainable development.

3.13 Electromagnetic Fields (EMF)

3.13.1 Overview of Assessment

The proposed development includes **high-voltage underground electrical infrastructure** associated with the grid connection, which will generate **electromagnetic fields (EMF)** along the cable route.

While the EIAR acknowledges the presence of electrical infrastructure, it does not provide a **detailed, site-specific assessment of EMF exposure levels**, nor does it adequately assess the potential effects on identified receptors.

In particular, the EIAR does not:

- quantify EMF levels along the cable route
- identify locations of **prolonged or repeated exposure**
- assess exposure in the context of **actual land use patterns**

In the absence of such assessment, it has not been demonstrated that EMF exposure will be **appropriately characterised or controlled**.

3.13.2 Receiving Environment and Exposure Context

The proposed cable route is located within a **rural agricultural setting**, where land is actively used for farming operations, livestock management and routine agricultural activities.

Individuals may be present directly above the cable route for extended or repeated periods. This represents a materially different exposure scenario to short-term or transient exposure typically assumed in generic assessments.

The EIAR does not identify specific receptor locations along the route, patterns of land use and occupancy, or the potential for cumulative or repeated exposure over time. The real-world exposure scenario has not been adequately evaluated.

3.13.3 Sensitive Receptors and Health Considerations

The EIAR does not consider the presence of **potentially sensitive receptors**, including:

- individuals using **medical devices** such as pacemakers
- persons with heightened sensitivity to EMF exposure
- individuals engaged in prolonged occupational exposure (e.g. farming activity)

No assessment is provided of potential **interference with medical devices**, whether **additional precautionary distances or controls** are required or whether exposure levels are appropriate for **all receptor types.**

In the absence of such assessment, it has not been demonstrated that **all relevant receptors have been considered or protected**.

3.13.4 Regulatory Framework and Compliance

The **Safety, Health and Welfare at Work (Electromagnetic Fields) Regulations 2016** require identification of exposed persons, assessment of EMF exposure levels AND implementation of appropriate control measures.

The EIAR does not provide sufficient information to demonstrate:

- compliance with applicable EMF exposure limits
- how exposure levels will be **monitored or verified**
- how **identified receptors will be managed or protected**
- In the absence of an **evidence-based assessment**, it is not possible to conclude that the proposed development complies with relevant regulatory requirements.
- how **identified receptors will be managed or protected**

In the absence of an **evidence-based assessment**, it is not possible to conclude that the proposed development complies with relevant regulatory requirements.

3.13.5 Assessment Limitations and Uncertainty

The EMF assessment within the EIAR lacks **site-specific detail**. No **quantitative modelling** results are presented for the cable route, no **spatial mapping of EMF** intensity is provided, and **no comparison with recognised exposure thresholds** is included.

The reliance on generalised assumptions or standard compliance statements is not sufficient given identified receptors, prolonged exposure scenarios, and uncertainty regarding actual site conditions. The assessment cannot be considered complete, precise or definitive.

3.13.6 Conclusion on Electromagnetic Fields

The proposed development introduces **high-voltage electrical infrastructure** capable of generating electromagnetic fields along the cable route.

However, the EIAR does not provide a **robust, site-specific or receptor-based assessment** of EMF exposure.

It has not been demonstrated that:

- EMF exposure levels have been **adequately quantified**
- all relevant receptors, including **sensitive individuals**, have been identified
- **prolonged or repeated exposure scenarios** have been assessed
- compliance with applicable **regulatory standards** has been demonstrated

In the absence of a complete and evidence-based assessment, it is not possible to conclude that EMF exposure will not give rise to **adverse effects on human health**.

Accordingly, the assessment of electromagnetic fields is **incomplete**, and the conclusions of the EIAR are **not supported**.

3.14 Traffic & Infrastructure

3.14.1 Overview

The Environmental Impact Assessment Report (EIAR), Chapter 10, concludes that the proposed development will not give rise to significant adverse impacts on the surrounding road network, and that traffic effects can be adequately managed through a Construction Traffic Management Plan (CTMP), provision of sightlines, and adherence to Transport Infrastructure Ireland (TII) standards.

These conclusions are not supported by the evidence. The development would impose substantial demands on both national and local road infrastructure, while introducing safety risks that have not been adequately assessed or mitigated.

The following specific failures are demonstrated in the sections below:

- A single-day winter traffic survey on the L3103 that does not reflect typical conditions and underestimates the baseline
- Unsafe site access at the L3103, directly contradicted by the road authority's own continuous white line marking at that location
- No Road Safety Audit addressing motorway user impact, despite the site boundary sitting within 10 metres of the M6/M17/M18 interchange
- HGV turning movements that require vehicles to cross the continuous white centreline and encroach into opposing traffic lanes
- Third-party land required for sightlines without consent secured
- Exceptional Abnormal Loads (EALs) of up to 380 tonnes on roads already assessed as constrained
- Prolonged grid connection works causing repeated road closures over up to 12 months
- No integrated assessment of how all these factors interact — including their interaction with the major accident risk scenarios identified in Section 3.12

This fragmented approach to assessment is inconsistent with the requirement to consider the development as a whole, as established in O'Grianna v An Bord Pleanála, and fails to provide the integrated assessment of cumulative and interacting effects required under the EIA Directive and confirmed in Holohan v An Bord Pleanála.

3.14.2 Policy and Guidance Context

The traffic assessment must comply with TII guidance and the Galway County Development Plan 2022–2028. Both require that development:

- does not adversely affect the safety or carrying capacity of the road network
- protects national road function, including the M17, M18 and M6
- provides fully developed CTMPs where significant construction traffic is generated

- demonstrates compliance with applicable road safety standards

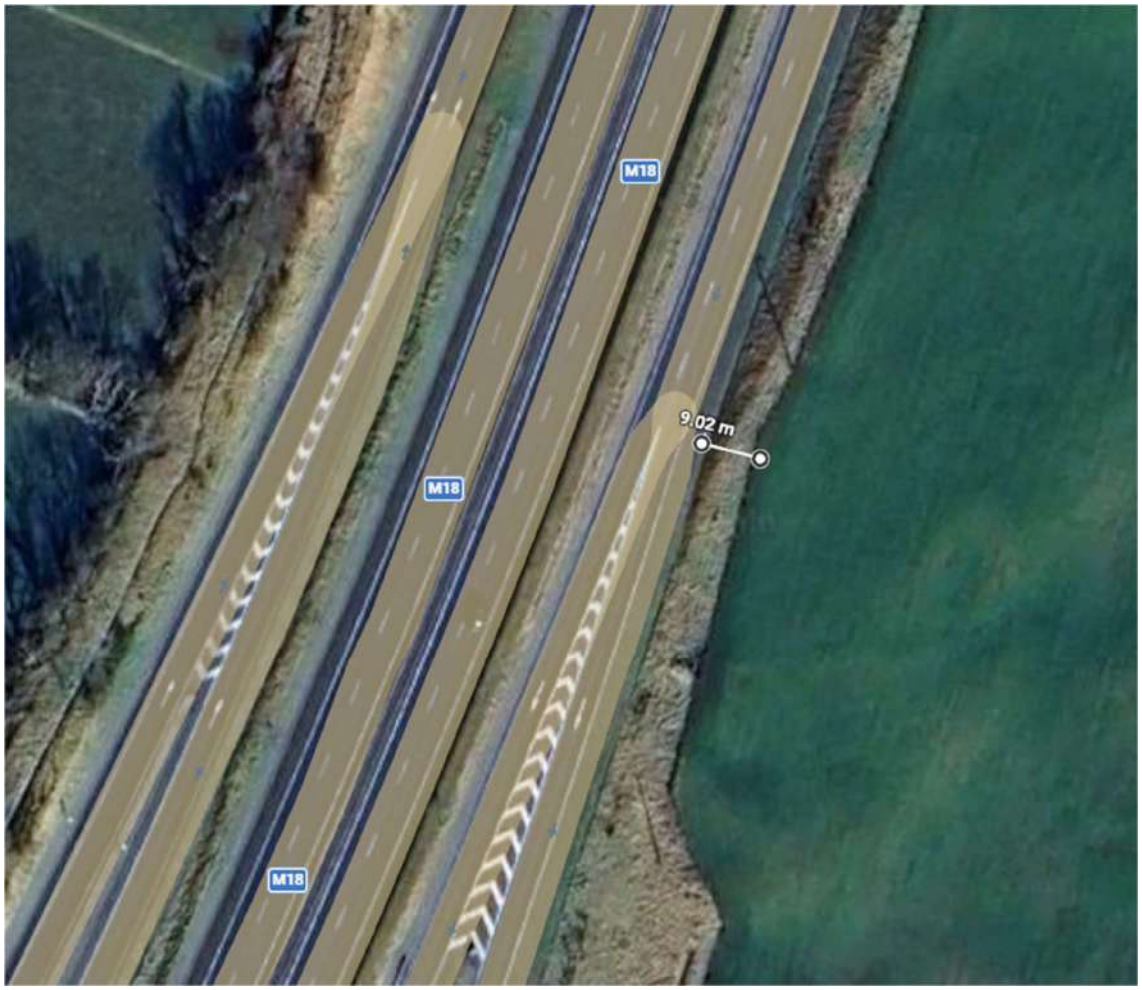
In this case, the CTMP is not fully developed at EIAR stage.

Key mitigation measures — routing, scheduling, emergency access, and management of sensitive locations — are deferred to post-consent. This amounts to a deferral of assessment and does not provide a sufficient basis on which to conclude that traffic impacts will be not significant.

Accordingly, the EIAR does not provide a sufficient basis upon which to conclude that traffic and infrastructure impacts will be not significant.

3.14.3 Impact on National Roads (M18/M6/M17)

The proposed development is located immediately adjacent to the junction of the M6, M17 and M18 motorways – one of the most complex interchange points in the west of Ireland. The proposed development boundary sits as close as 10 metres at its nearest point.



Google maps image to show how close the motorway will be to proposed development, 9metres at this point on the boundary.

The EIAR states that impacts on motorway users will be slight to moderate and not significant. This conclusion is not accepted and is inadequately substantiated. The development proposes

a 30-metre emission stack, a 36-metre telecommunications mast, 20-metre floodlighting masts, large fuel and water tanks, and multiple industrial buildings — all within sightlines of drivers navigating a high-speed interchange at 100–120 km/h. These structures represent a foreseeable and unassessed visual distraction risk.

Three specific omissions are identified:

- No glint and glare assessment from the perspective of motorway users, despite reflective tanks and metallic cladding at driver eye level
- No night-time lighting impact assessment, despite 20-metre masts operating throughout the night against a dark rural backdrop in peripheral vision of interchange users
- No Road Safety Audit addressing the permanent operational impact on motorway users, as required under EU Directive 2019/1936/EC, transposed by S.I. 612 of 2021. TII's own guidance states that deferring this to a post-decision condition is highly inappropriate.

The Board is requested to require, prior to any grant of permission: a full independent Road Safety Audit; a glint and glare study modelled from driver viewpoints across all seasons and times of day; and a night-time lighting impact assessment. Written confirmation from TII should be required before any decision to grant is made.

Baseline Traffic Data- Limitations

The EIAR states that baseline traffic data for the L3103 was obtained from an Automatic Traffic Counter survey conducted on 13 February 2025.

The recorded flows were:

- AM Peak (08:00–09:00): approximately 280 pcu
- PM Peak (17:00–18:00): approximately 230 pcu

These figures confirm that the L3103 is a low-volume rural road.

The baseline does not account for:

- Seasonal variation in agricultural activity, including silage and harvest peaks
- Recurring peak traffic associated with Athenry Mart (sheep sales Mondays, cattle and bull sales Tuesdays, calf sales Thursdays)
- Pedestrian and cyclist use
- Variability in school traffic

There is no route-by-route classified traffic data, no junction-by-junction analysis, and no meaningful assessment of peak period conditions. The baseline is underestimated, and all subsequent modelling in Chapter 10 of the EIAR is fundamentally affected as a result.

Interaction with Major Accident Risk

The applicant's own COMAH documentation confirms that a portion of the M18 lies within the consequence zone of major accident scenarios. Chapter 10 does not assess driver behaviour in response to fire, explosion or emergency events, the potential for multi-vehicle collisions, or the impact of smoke and debris on motorway visibility. These routes carry in the order of 10,000 to 20,000 vehicles per day. This is a significant omission.

3.14.4 Exceptional Abnormal Loads (EALs)

Construction requires transport of exceptional abnormal loads including components weighing up to 380 tonnes with convoy weights exceeding 600 tonnes. The applicant's own analysis found the initial haulage route structurally inadequate, requiring its abandonment due to bridge capacity failure.

Under the revised route, these loads require speeds of approximately 10 mph with escort and lane control. The EIAR treats EAL movements as isolated logistical events and does not assess their interaction with constrained rural roads, residential access, emergency response requirements, school and agricultural traffic, or concurrent road closures from grid connection works. When considered alongside Section 3.12 (Major Accidents & Disasters), these movements further demonstrate that the road network cannot be shown to safely accommodate the development.

3.14.5 Local Road Network

The proposed development will generate:

- approximately 142 HGV movements per day
- approximately 170 staff vehicle movements

This equates to approximately 2 HGV movements per hour, in addition to other development traffic.

The EIAR focuses on theoretical capacity but does not demonstrate real-world safety. A road may operate within capacity while remaining unsafe due to poor visibility, constrained geometry, limited passing opportunities, and mixed traffic conditions.

These conditions are characteristic of the L3103 and surrounding roads. The development's traffic profile is incompatible with a road network lacking basic pedestrian and cycle infrastructure and serving residential properties at 550 metres, 600 metres, and 19 metres from the access road respectively.

3.14.6 Site Access, Local Access Road and Sightlines

Continuous White Centre Line — Road Authority's Own Safety Assessment

- The L3103 at the proposed site entrance carries a **continuous white centre line** — a formal road marking placed under the Road Traffic (Signs) Regulations indicating that visibility and alignment at this location are insufficient for safe overtaking
- A continuous white line is only placed where the road authority has determined that **stopping sight distance or road geometry presents a danger** to road users
- The applicant's sightline drawing claims adequate visibility for a new industrial access at this precise location — this is **directly contradicted** by the road authority's own standing assessment as evidenced by the continuous white line
- An articulated HGV of 16.48 metres emerging from the site entrance onto a continuous white line road will **block the carriageway** during its turning manoeuvre
- Galway County Council cannot rationally maintain a continuous white line indicating dangerous conditions at this location while simultaneously approving a new access generating decades of HGV traffic at the same point
- The Board is requested to seek written confirmation from Galway County Council Roads Department as to whether the continuous white line at this location is consistent with the grant of a new industrial access at this point

Existing road from proposed site entrance show HGV, barely able to keep inside <u>continuous white line</u>, see further back on road is a blind bend.

Sightline Requirements at Site Access — L3103 Local Road

The applicant's drawings, including Drawing No. PEK3-ATK-ZZ-01-DR-CE-901200 – Site Access Sightlines. demonstrate that the required sightlines can only be achieved through removal of boundary walls, relocation of poles and infrastructure, and modification of roadside features — including potential encroachment onto third-party land. Documentation at Appendix H confirms that a local resident and landowner have withheld consent for the necessary visibility splays. Under established planning requirements, sightlines must be achievable within lands under the applicant's control or subject to formal agreement. This has not been demonstrated.

Furthermore, the proposed works to the public road required to achieve these sightlines would necessitate consent under Section 53 of the Roads Act 1993 (as amended), which has neither been obtained nor demonstrated to be achievable in the absence of third-party agreement.

Note; Existing Road levels at the entrance are shown at 52.5 on the applicant's drawings; the dip in the road towards Athenry is at 50.5, on a bend. This is a serious concern for local road users.

HGV Driver Eye Position vs Car Driver — X Distance Setback

- The standard X distance of **3.0 metres** in DN-GEO-03060 Table 5.4 is calibrated for a **car driver's eye position**.
- An articulated HGV has a total vehicle length of 16.480 metres and the driver's cab is set significantly further back.
- The sightline triangles shown on drawing PEK3-ATK-ZZ-01-DR-CE-901200 are drawn from the road edge — they do **not** represent what an HGV driver can actually see when the vehicle is positioned to exit
- The effective visibility available to an HGV driver at this entrance is therefore **materially less** than the 90 metre sightlines shown on the drawing
- No assessment has been submitted demonstrating adequate visibility specifically from **HGV driver eye height and cab position** — despite the applicant's own autotrack confirming an articulated vehicle will use this entrance.

The Access Width is Inadequate for Two-Way HGV Movements

The L3103 is below 5.8m in width. The proposed access road is shown at 6 metres. The FTA Design Articulated Vehicle on the applicant's drawings is 16.480 metres long and 2.550 metres wide. The CTMP confirms up to 150 construction workers on site daily plus regular HGV deliveries. Two-way HGV conflict at a 6-metre access is a foreseeable and unmitigated safety hazard. No passing bay or traffic management solution for this scenario has been provided.

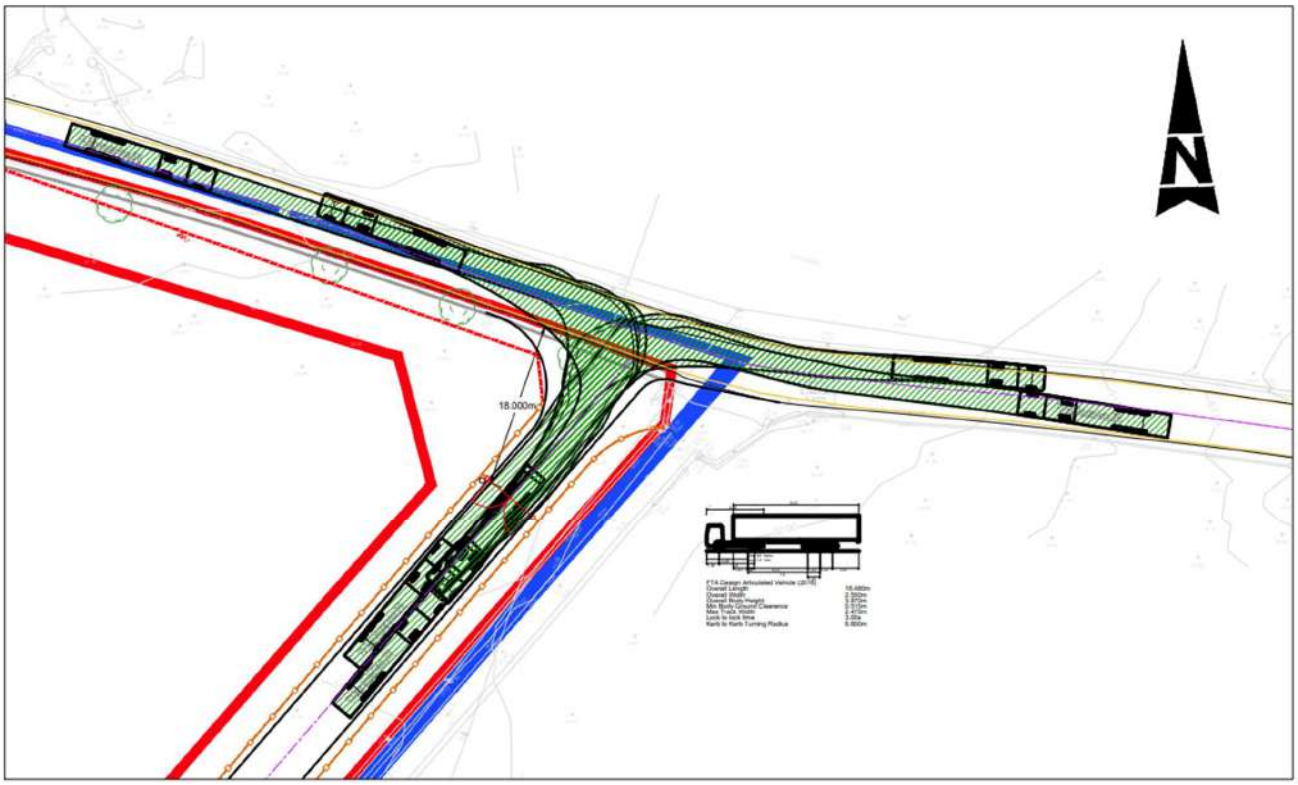


Image taken from applicants drawing PEK3-ATK-ZZ-01-DR-CE-901200, this shows the Autotrack for HGV at the entrance, all four turning accesses laid on top of each other which makes the drawing confusing and extremely difficult to read.

Autotrack and Turning Constraints

The Autotrack analysis demonstrates that articulated HGVs:

- cannot enter or exit the site within the available carriageway width
- must cross the continuous white centreline
- must encroach into the opposing traffic lane
- require use of the full carriageway to complete turning movements

This confirms that safe access cannot be achieved without conflict with oncoming traffic.

On a narrow rural road with limited forward visibility, this creates a high risk of:

- head-on collisions
- side-swipe collisions
- obstruction of through traffic
- forced reversing manoeuvres by other road users
- Visibility Standards and Compliance, TII publication DN-GEO-03031, May 2023

In this context, the introduction of sustained HGV movements, abnormal loads, and construction traffic gives rise to complex interaction scenarios which are not assessed in the EIAR. These include conflict between heavy goods vehicles and agricultural traffic, restricted passing opportunities, and queuing at constrained access points.

The EIAR does not demonstrate that safe passing, turning, and manoeuvring can be achieved under real-world conditions, nor does it demonstrate compliance with applicable carriageway width standards for the proposed traffic mix.

Photographic and Drawing Evidence

Figure 3.14F – Existing Road Conditions at Proposed Site Entrance

Photograph of the L3103 at the proposed site access location showing narrow carriageway width, restricted visibility, and absence of pedestrian infrastructure. The image demonstrates real-world conditions which differ from the idealised assumptions presented in the EIAR and highlight the constraints affecting safe vehicle movement and visibility.

2nd of April 2026- An agricultural tractor and trailer meet an HGV at the junction to where the proposed entrance is to be located. All traffic comes to a standstill while they manoeuvre around each other.

The photographic and drawing evidence clearly demonstrates that:

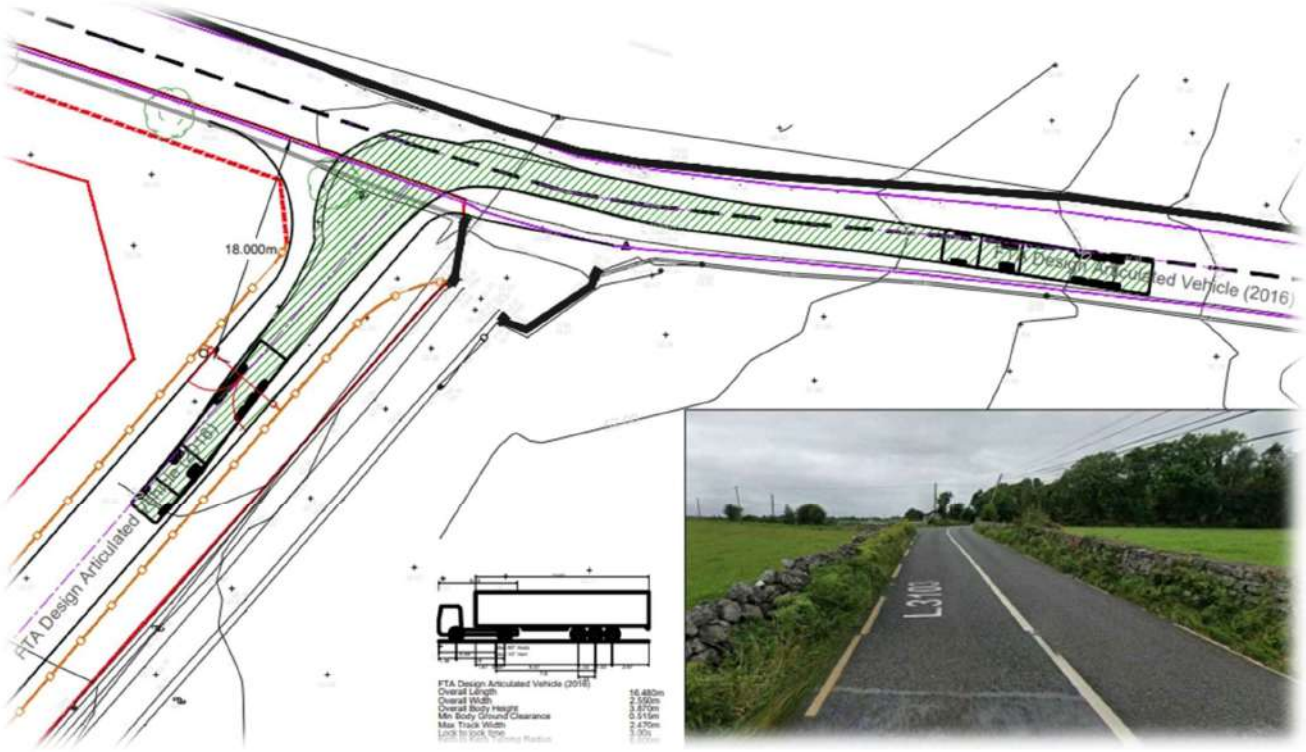
- safe access cannot be achieved within the existing road geometry
- HGV movements will conflict with oncoming traffic
- visibility is constrained and dependent on external factors
- compliance with design standards is uncertain
- third-party land may be required but is not secured

This represents a fundamental design constraint which cannot be mitigated through traffic management measures alone.

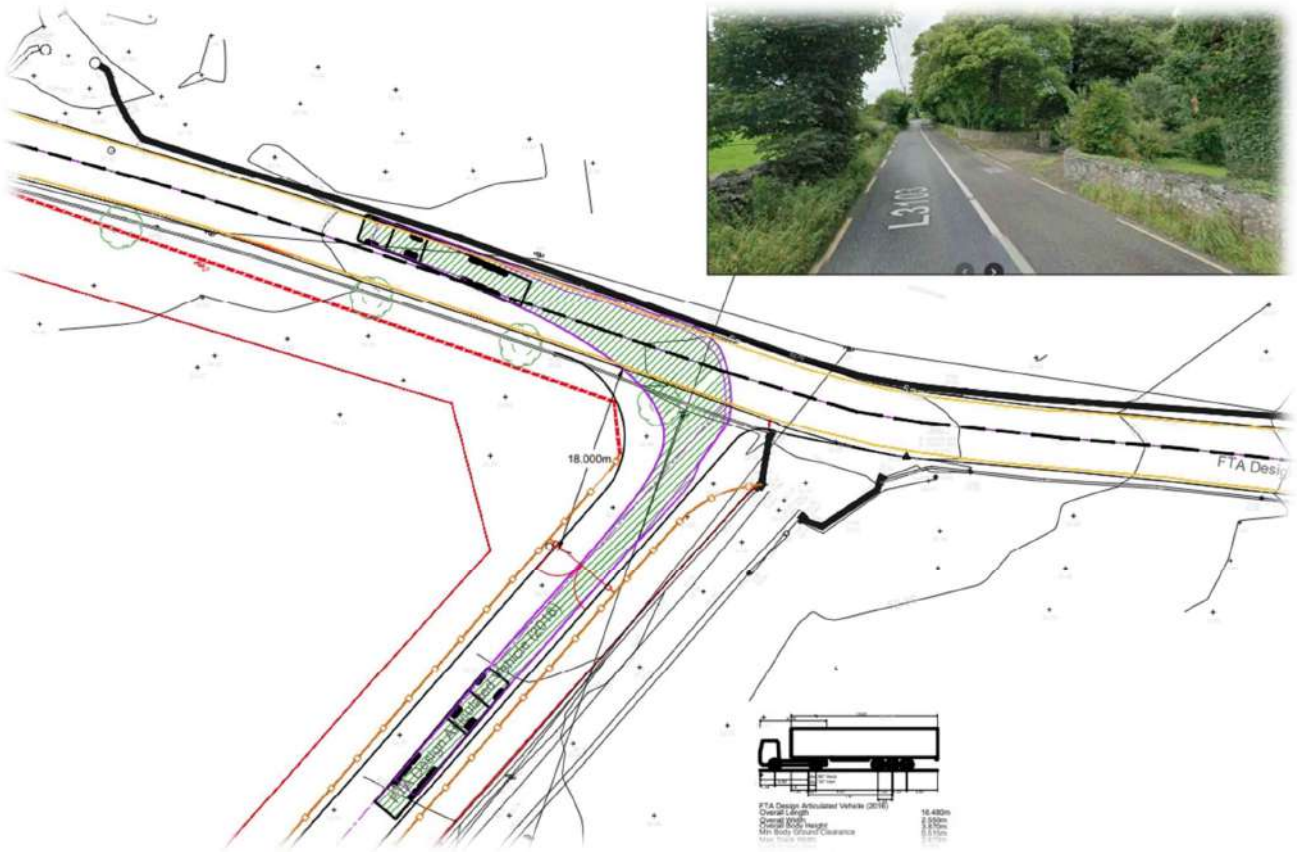
This is particularly significant when considered in conjunction with Section 3.12, where:

- major accident scenarios are identified
- rapid emergency response may be required
- evacuation routes may be necessary

An access arrangement which requires vehicles to encroach into opposing traffic lanes and operate under constrained visibility conditions is incompatible with a development of this scale and hazard profile.



On examining the Autotrack closer, HGV on entering and leaving the site will need to cross the continuous white line to face oncoming traffic to make the turn required for access and exit. Photo in each shows approximate location needed to cross.



In the above Autotrack analysis, it shows the HGV need to go over grass edge and shows it over the wall of the opposite landowner, see Appendix H. No consent has been given.

3.14.7 Grid Connection and Road Disruption

The proposed development includes an approximately 8 km underground grid connection, requiring trenching along local roads including the L7108, L7109, L71082 and L3103.

Works will involve continuous excavation in short sections of 30–50 metres, full road closures where necessary, and up to 12 months total construction — representing sustained, repetitive disruption rather than a short-term impact.

The EIAR proposes Stop/Go systems and temporary diversions as mitigation. On narrow constrained rural roads lacking alternative routes, these measures are insufficient. The practical operation of traffic management under real-world conditions on this network has not been adequately assessed.

The affected roads serve residential properties, farms, school transport routes, and local businesses. Disruption to farming operations during silage and harvest, restriction of livestock movement, and delay to daily access are not temporary inconveniences but will recur throughout the works period.

Most critically, the EIAR does not demonstrate how emergency access will be maintained during closures — a direct failure given the major accident risk scenarios identified in Section 3.12 where rapid emergency response may be required at all times.

3.14.8 Sensitive Receptors and Road Safety

The L3103 and surrounding roads serve residential dwellings, farms, Presentation College, and Clarin College. There are no footpaths or cycle lanes. Pedestrians, schoolchildren, and cyclists must share the carriageway with vehicular traffic, including HGVs and construction vehicles.

The introduction of 142 HGV movements per day on a road without pedestrian segregation creates direct conflict between large vehicles and vulnerable road users. School-related traffic peaks coincide with times of increased construction activity, constrained visibility, and limited road space. The EIAR does not provide a detailed assessment of these peak-period interactions or their safety implications.

The proposed development introduces a level and type of traffic that is incompatible with the existing function of the road network and the proximity of vulnerable and residential receptors.

3.14.9 Agricultural Traffic and Rural Land Use

The L3103 and surrounding roads function primarily as low-volume rural roads serving farms, dwellings, and agricultural machinery. They are not designed or intended to accommodate sustained volumes of heavy construction traffic, articulated HGVs, or abnormal loads.

Agricultural activity peaks significantly during silage season, harvesting, and livestock sales. These periods are not reflected in the EIAR baseline. The introduction of frequent HGV movements onto roads already accommodating slow-moving farm machinery and livestock transport creates a high-risk interaction environment where overtaking opportunities are limited, road widths are insufficient for safe passing, and visibility is constrained.

Construction road closures and traffic management systems will restrict access to fields and farmyards, interfere with daily farm operations, and create safety risks at farm entrances. The EIAR does not adequately assess these interactions.

3.14.10 Emergency Access and Network Resilience

The proposed development relies on the L3103 as its single primary access route. Reliance on a single constrained access creates an inherent vulnerability: any obstruction or restriction has the potential to delay or prevent emergency access to the site, restrict evacuation routes for surrounding receptors, or isolate the site during an incident.

During construction, access will be further constrained by HGV traffic, abnormal load movements, grid connection road closures, Stop/Go systems, and temporary carriageway narrowing — occurring simultaneously and repeatedly over the construction period.

The nature of the proposed development, as outlined in Section 3.12, introduces the potential for major accident scenarios requiring rapid emergency response, coordinated multi-agency attendance, and potential evacuation of surrounding areas. In such scenarios, even short delays may have significant consequences for public safety and incident containment.

The EIAR does not assess how emergency vehicles will navigate closures, whether alternative routes are viable, or how response times will be affected. It has not been demonstrated that emergency response can be effectively delivered or that evacuation routes can be maintained.

3.14.11 Construction and Infrastructure Risks

High-Pressure Gas Main

The EIAR confirms that the proposed grid connection route intersects with an existing high-pressure gas main. Works in the vicinity introduce risk of accidental strike, gas leakage, and fire or explosion — particularly serious given the duration of construction and the use of heavy excavation equipment in proximity to public roads. The EIAR does not demonstrate a detailed methodology for safe working in proximity to the pipeline, nor contingency measures in the event of an incident.

Horizontal Directional Drilling (HDD)

HDD beneath the M6 and M17 motorways carries the known risk of "frac-out" — where drilling fluid escapes to the surface through subsurface fissures. This may result in contamination of soils, pollution of groundwater, damage to agricultural land, and impact on watercourses. The receiving environment is characterised by karst geology with rapid groundwater movement, unpredictable subsurface pathways, and limited natural attenuation of contaminants. The EIAR does not adequately assess the interaction between HDD risks and the local hydrogeology, including the likelihood of frac-out under local geological conditions, mitigation effectiveness, or response procedures. Furthermore, any works beneath or in proximity to the M6 and M17 motorways would require the consent of the relevant road authority **under Section 53 of the Roads Act 1993** (as amended), and no evidence has been provided that such consent has been obtained or is achievable.

In the absence of a robust, site-specific assessment and the necessary statutory consents, the Board cannot be satisfied that the proposed works would not give rise to significant adverse impacts on groundwater and the wider water environment.

Road and Infrastructure Damage

Frequent HGV movements, abnormal load transport, and excavation within road corridors will cause structural stress, surface damage, and degradation of drainage systems. While the EIAR states that damage will be repaired, it does not assess the extent of likely damage, disruption during repair, or cumulative effects on road condition over the construction period.

3.14.12 Overall Assessment and Conclusion

The EIAR's assessment of traffic and transport is fragmented. Individual elements — construction traffic, EALs, grid connection works, site access — are assessed in isolation. The EIAR does not assess how these elements interact in practice within the receiving environment, nor does it assess their interaction with the major accident risk scenarios identified in Chapter 3.12.

The following specific failures in the assessment are identified:

- Reliance on a single-day winter baseline survey that underestimates traffic conditions throughout the year

- Site access conclusions directly contradicted by the road authority's own white line marking at the proposed entrance
- No Road Safety Audit for motorway user impact as required under S.I. 612 of 2021
- HGV turning movements demonstrated by the applicant's own autotrack to require vehicles to cross the continuous centreline and encroach into opposing traffic lanes
- Sightlines dependent on third-party land for which consent has been withheld
- No HGV-specific driver eye position visibility assessment
- Grid connection works assessed only in terms of temporary disruption, without cumulative assessment over 12 months of repeated closures
- No integrated assessment of emergency access under construction conditions
- No assessment of the interaction between traffic constraints and major accident scenarios
- No junction capacity modelling, diversion route assessment, queue analysis, or network-wide traffic evaluation

This approach is inconsistent with the requirement to assess the development as a whole, as established in O'Grianna v An Bord Pleanála, and fails to provide the comprehensive assessment of interaction and cumulative effects required under the EIA Directive and confirmed in Holohan v An Bord Pleanála.

When considered as a whole, the proposed development will result in:

- Significant intensification of traffic on unsuitable roads
- Unsafe access arrangements that cannot be mitigated through traffic management alone
- Conflict between HGV traffic, agricultural vehicles, and vulnerable road users
- Prolonged and repeated disruption to the local road network over the construction period
- Reduced network resilience due to single-access dependency
- Undemonstrated emergency access and response capability
- Significant and unassessed interaction with major accident risk

The conclusions of the EIAR are not supported by the evidence. The proposed development does not represent proper planning and sustainable development, and permission should be refused on traffic and infrastructure grounds.

3.14.13 Interaction and Cumulative Effects

The Environmental Impact Assessment process requires that the likely significant effects of a proposed development be assessed in a comprehensive and integrated manner, including the interaction and cumulative effects between different environmental factors.

Interaction with Other Environmental Factors

Traffic and transport impacts arising from the proposed development do not occur in isolation and interact directly with a range of other environmental receptors, including:

- human health (Chapter 3.4)
- air quality (Chapter 3.6)
- noise and vibration (Chapter 3.9)
- landscape and visual impact (Chapter 3.8)
- soil, geology and hydrogeology (Chapter 3.11 and Chapter 3.7)

For example:

- increased traffic results in increased noise and vibration affecting nearby dwellings
- HGV movements contribute to reduced air quality along local roads
- road widening and sightline requirements alter the rural landscape
- construction traffic and trenching interact with underlying geological conditions

The EIAR does not provide an integrated assessment of these interactions.

Interaction with Traffic and Access Constraints

As set out in this chapter, traffic impacts include:

- sustained HGV movements
- abnormal load transport
- constrained site access
- prolonged road closures
- limited network resilience

These factors interact with each other and with the receiving environment, creating cumulative impacts which are greater than the sum of individual effects.

The EIAR assesses these elements separately and does not consider their combined effect on:

- road safety
- accessibility
- community impact
- overall network function

Interaction with Major Accident Risk

A critical omission in the EIAR is the failure to assess the interaction between traffic and transport impacts and the major accident risks identified in Chapter 3.12 (Major Accidents & Disasters).

These include scenarios involving:

- fire
- explosion

- release of hazardous substances

Such scenarios may require:

- rapid emergency response
- clear and reliable access routes
- potential evacuation of surrounding areas

However, the EIAR does not assess how:

- traffic congestion
- road closures
- abnormal load movements
- constrained access arrangements

may affect the ability to respond effectively to such events.

This represents a significant failure to assess the combined safety implications of the development.

Cumulative Effects with Existing and Planned Activity

The EIAR does not adequately assess cumulative impacts arising from the interaction of the proposed development with:

- existing agricultural traffic
- regional and motorway traffic
- existing industrial and commercial activity in the area
- recurring peak traffic associated with local land uses

These cumulative effects include:

- increased traffic intensity
- increased road safety risk
- increased environmental impact
- increased pressure on local infrastructure

Failure to Provide an Integrated Assessment

The EIAR adopts a segmented approach, assessing individual components of the development separately without:

- integrating findings across environmental topics
- assessing interaction between impacts
- considering cumulative effects in a meaningful way

This results in an assessment which does not reflect the real-world operation of the development.

Legal and Regulatory Context

The requirement to assess interaction and cumulative effects is established under the Environmental Impact Assessment Directive and clarified in case law, including Holohan v An Bord Pleanála.

In that case, it was confirmed that an environmental assessment must:

- identify all likely significant effects
- assess interactions between environmental factors
- provide a complete and reasoned analysis

The EIAR does not meet these requirements.

Implications for the Assessment

As a result of the deficiencies identified:

- the full extent of the development's impacts has not been assessed
- the interaction between traffic, environment and safety has not been evaluated
- the cumulative effects on the receiving environment are not understood

This creates a fundamental uncertainty in relation to the likely significant effects of the development.

Conclusion

The EIAR fails to provide a comprehensive assessment of interaction and cumulative effects arising from the proposed development.

In particular, it does not assess:

- the interaction between traffic impacts and other environmental factors
- the combined effect of multiple traffic-related impacts
- the interaction between traffic and major accident risk
- cumulative impacts on the local community and infrastructure

This failure is inconsistent with the requirements of the EIA Directive and the principles established in Holohan v An Bord Pleanála.

Accordingly, it has not been demonstrated that the likely significant effects of the proposed development have been properly identified, described, and assessed.

The assessment of traffic and transport impacts presented in the EIAR is fragmented, reliant on limited baseline data, and not supported by sufficient quantitative analysis. It fails to demonstrate that the development can be safely or feasibly accommodated within the receiving road network under real-world conditions.

Accordingly, it has not been demonstrated that the proposed development will not give rise to significant adverse impacts on road safety, infrastructure, and surrounding communities.

3.14.14 Conclusion

Having regard to the foregoing, it is submitted that the proposed development gives rise to significant and unacceptable impacts on traffic, infrastructure, and public safety which have not been adequately assessed in the Environmental Impact Assessment Report.

The evidence presented demonstrates that the development would result in:

- a substantial intensification of traffic, including frequent HGV movements, on a narrow and constrained rural road network
- unsafe access arrangements, where articulated vehicles must encroach into opposing traffic lanes under limited visibility conditions
- conflict between HGV traffic, agricultural vehicles, pedestrians, cyclists, and school-related traffic
- prolonged and repeated disruption arising from grid connection works and construction activity
- reduced network resilience due to reliance on a single access route
- increased risk to nearby residential receptors, including properties located approximately 550–600 metres from the site and a dwelling located approximately 19 metres from the access road

The EIAR relies on theoretical traffic capacity and standard mitigation measures but does not demonstrate that the proposed development can operate safely under real-world conditions.

In particular, the EIAR fails to adequately assess:

- the cumulative effect of traffic generation, abnormal load movements, road closures, and access constraints
- the interaction between traffic impacts and the major accident scenarios identified in Chapter 3.12 (Major Accidents & Disasters)
- the ability of the road network to safely accommodate emergency response and potential evacuation requirements
- the interaction between traffic impacts and other environmental factors, including human health, noise, air quality, and land use

This fragmented and segmented approach to assessment is inconsistent with the requirement to consider the development as a whole, as established in O'Grianna v An Bord Pleanála, and fails to provide a comprehensive assessment of interaction and cumulative effects, contrary to the principles set out in Holohan v An Bord Pleanála.

When considered in conjunction with the major accident risks identified in Chapter 3.12(Major Accidents & Disasters), it is clear that the proposed development introduces a combination of traffic, access, and safety constraints which are incompatible with the receiving environment.

In circumstances where:

- safe access cannot be demonstrated
- the road network lacks resilience and alternative routes

- vulnerable road users are exposed to increased risk
- emergency access cannot be reliably ensured
- cumulative and interacting effects have not been adequately assessed

it has not been demonstrated that the proposed development would not give rise to significant adverse effects on road safety, infrastructure, and public safety.

Accordingly, the conclusions of the EIAR are not supported, and the proposed development does not represent proper planning and sustainable development.

3.15 Land Use, Property and Future Development Constraints

3.15.1 Overview

The proposed development will introduce permanent infrastructure and operational constraints which extend beyond the immediate site boundary and have implications for adjoining land use, property rights, agricultural activity, and future development potential.

The EIAR does not provide a comprehensive assessment of these effects. In particular, it does not adequately consider:

- the long-term land use implications of underground infrastructure
- constraints on access, servicing and development of adjoining lands
- impacts on agricultural operations and rural land management
- the interaction between infrastructure, planning policy and future development

In a rural context, where land is actively managed, subdivided, and developed over time, such impacts are material and must be assessed as part of proper planning and sustainable development.

3.15.2 Existing Land Use and Rural Context

The receiving environment is characterised by:

- agricultural land use, including grazing and livestock farming
- dispersed rural housing
- locally important road networks providing access to lands and dwellings
- land parcels with potential for future residential or agricultural development

Land use in this area is dynamic and multifunctional, supporting:

- agricultural production
- rural housing (including family housing)
- local economic activity

The EIAR does not adequately consider how the proposed development would interact with or constrain these existing and evolving land uses.

3.15.3 Impact on Property and Land Use Function

The proposed development introduces a range of direct and indirect constraints on adjoining lands, including:

- physical infrastructure encroachment
- restriction of access and servicing
- changes to land usability and function
- increased operational and environmental burden

These impacts may reduce the functional utility of lands, affect land value and development potential and impose ongoing constraints on landowners. The EIAR does not provide a clear or quantified assessment of these effects.

3.15.4 Future Development Constraints

In rural areas, development occurs incrementally — construction of family homes, expansion of farmyards, subdivision and transfer of land within families, and installation of services and access infrastructure. The proposed development has the potential to constrain such activities by:

- Limiting available access points
- Restricting installation of utilities and services
- Introducing proximity constraints to infrastructure
- Complicating future planning applications

The EIAR does not assess whether adjoining lands will remain developable, whether planning constraints will arise due to proximity to infrastructure, or how future planning applications may be affected. In the absence of this, it cannot be concluded that the development will not adversely affect the proper planning and sustainable development of the area.

3.15.5 Interaction with Planning Policy

The Galway County Development Plan 2022–2028 supports sustainable rural development, protection of agricultural viability, facilitation of rural housing where appropriate, and protection of rural character (including Policy RD1). Development proposals must demonstrate that they:

- Do not unduly restrict adjoining land use
- Do not compromise future development potential
- Are compatible with the receiving rural environment

The EIAR does not demonstrate compliance with these objectives. The imposition of unassessed infrastructure constraints is not consistent with the Development Plan.

3.15.6 Underground Infrastructure, Cabling and Land Use Constraints

The proposed development includes extensive underground high-voltage cabling routed along the local road network and surrounding lands. This infrastructure gives rise to significant and long-term land use implications which have not been adequately assessed.

Permanent Land Use Restrictions

Underground high-voltage electrical infrastructure typically imposes permanent restrictions on land use within and adjoining the cable corridor, including limitations on:

- excavation and ground disturbance
- foundation works and construction
- installation of drainage systems

- erection of structures
- planting of deep-rooted vegetation

These constraints persist for the entire operational lifespan of the development affecting current land use, future development potential, and intergenerational land management decisions. The EIAR does not quantify or map these constraints.

The EIAR does not quantify or map these constraints.

Absence of Safeguarding Corridors and Development Controls

The EIAR does not identify safeguarding corridors, easements or wayleaves, exclusion zones or stand-off distances. Without this information, it is not possible to determine the extent of land sterilisation, whether development can occur near the cable route, or the implications for future planning applications. This creates uncertainty for both landowners and the competent authority.

Constraints on Access and Servicing

In rural areas, access and land management routinely require new or upgraded entrances, installation of utilities, drainage and culverting, agricultural crossings, and movement of machinery and livestock. The presence of underground infrastructure introduces constraints on all such activities.

Future works may require specialised design, protective measures and consent from the infrastructure operator — resulting in delay, additional cost, or refusal of access. The EIAR does not assess how these issues will be managed or how ongoing farm operations will be protected.

Construction Phase Disruption

Installation of the cable will involve trenching along roads, temporary access restrictions and traffic management. This may disrupt farm access, interfere with livestock movement and delay agricultural operations — particularly during silage season, harvesting and livestock management periods. The EIAR does not adequately assess these effects.

Uncertainty and Burden on Landowners

The absence of a clear framework governing infrastructure constraints creates uncertainty in land use rights, limits development potential, imposes financial and operational burden on landowners, and creates dependency on third-party consent. This affects the reasonable use and enjoyment of land.

3.15.7 Conclusion

The proposed development introduces permanent infrastructure and associated constraints which extend beyond the site boundary and affect land use, property rights, agricultural activity and future development potential.

The EIAR fails to demonstrate that:

- Adjoining lands will not be sterilised or constrained
- Future development potential will not be adversely affected
- Access and servicing can be maintained without restriction
- Agricultural operations can continue without interference
- The development is consistent with the Galway County Development Plan 2022–2028

These impacts are material, long-term, and extend beyond the site boundary. In the absence of a clear and evidence-based assessment, it cannot be concluded that the proposed development will not give rise to adverse effects on the proper planning and sustainable development of the area.

3.16 Cultural Heritage, Archaeology & Tourism

3.16.1 Overview of Assessment

Chapter 13 of the EIAR, together with the supporting archaeological assessment in Appendix 13 (including geophysical survey and test trenching reports), assesses the potential impacts of the proposed development on archaeological heritage, architectural heritage, cultural landscapes, and the setting of heritage assets. The EIAR concludes that, following mitigation, impacts on cultural heritage will be not significant. That conclusion is not supported.

The assessment focuses primarily on direct physical effects and does not adequately assess archaeological setting and landscape context, the wider archaeological landscape, interaction with landscape and visual impact, or cumulative and indirect effects. The EIAR adopts an unduly narrow interpretation of cultural heritage, treating monuments as isolated features rather than as elements of a wider historic landscape.

Chapter 13 (Section 13.4.1) confirms that 70 sites of archaeological and/or cultural heritage significance were identified within the study area. This is a substantial concentration that is not consistent with the EIAR's conclusion of not significant residual impact. The breadth of the heritage record demands a correspondingly comprehensive assessment. That assessment has not been provided.

3.16.2 Policy Context – Statutory Protection

The EIAR (Section 13.2.1) acknowledges that the assessment must comply with the Galway County Development Plan 2022–2028, the National Monuments Acts 1930–2014, and the Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023. Key Development Plan provisions directly engaged by this application include:

- **ARC 4 – Protection of Archaeological Sites "**Protect archaeological sites and monuments, their settings and visual amenity… and seek to protect important archaeological landscapes."
- **ARC 9 – Recorded Monuments "**Ensure that any development in the immediate vicinity of a Recorded Monument is sensitively designed and sited and does not detract from the monument or its visual amenity."
- **ARC 10 – Zones of Archaeological Potential** Requires protection of areas of archaeological potential, including subsurface remains.
- **ARC 12 – Archaeology and Infrastructure Schemes** Requires that archaeological concerns are addressed in infrastructure development, including electricity networks and roadworks.

The Athenry Dominican Priory of Saints Peter and Paul was founded c.1241

The **Athenry Town Centre First Plan** (Appendix I of this submission) provides further statutory policy context. The Plan identifies the importance of:

- **Protecting and enhancing the medieval character** and setting of Athenry
- Reinforcing the **relationship between the town and its surrounding rural landscape**
- Ensuring that **development respects the historic context** and cultural identity of the area

The EIAR (Section 13.2.10) states that the relevant sections of the Galway County Development Plan are included in Appendix 13-2, Volume 3 of the EIAR. Despite this acknowledgement, the EIAR does not demonstrate compliance with the above requirements, particularly in relation to protection of archaeological setting, recognition of wider archaeological landscapes, and assessment of infrastructure impacts including the 8.1km UGC route.

3.16.3 Archaeological Context and Sensitivity

Chapter 13 (Section 13.4.1, Table 13-16) confirms the following baseline heritage inventory across the study area:

- **70 sites of archaeological and/or cultural heritage significance** identified in total
- **28 Recorded Monuments** (RMPs) and 8 Sites and Monuments Records (SMRs) within the study area (Section 13.3.1.1, Table 13-8)
- 1 Protected Structure (CH037 / RPS No. RPS.130 — Athenry Agricultural College, Ballygarraun West), also listed on the NIAH (Reg. No. 30408407), located approximately 1.9km south-east of the site (Section 13.3.1.4, Table 13-9)

- 9 previous excavations recorded within the study area (CH038–CH045, CH070) (Section 13.3.7, Table 13-16)
- 14 undesignated cultural heritage sites identified from cartographic sources (CH046, CH057–CH069) including 5 vernacular structure sites within the project boundary and 9 townland boundary crossings (Section 13.3.3.1, Tables 13-11 and 13-12)
- 9 areas/features of archaeological potential identified by geophysical survey (CH047–CH055), plus 1 additional area of archaeological potential (CH056) based on natural features (Section 13.3.3.5, Table 13-13)

The closest recorded monument is **Ringfort CH036 (GA084-065),** located approximately 100 metres west of the proposed development site. This site was partially excavated under licence no. E004024 in 2010 and confirmed to contain internal house structures, animal pens, cobbled surfaces, pits and three inhumations (Section 13.3.7). Additional ringforts, cashels, enclosures, souterrains, fulachta fiadh, a barrow, a standing stone and a castle are recorded across the surrounding townlands.

Ringforts are a defining feature of the Irish archaeological landscape, typically associated with wider settlement patterns, agricultural activity and dispersed subsurface archaeology. There are seven known ringforts and five cashels within the study area (Section 13.3.4.2). The density of recorded monuments, the presence of confirmed subsurface features from previous excavations, and the multi-period character of the archaeological record demonstrate a wider archaeological landscape with significant potential for associated subsurface remains and long-term settlement continuity.

The EIAR underestimates archaeological sensitivity by adopting a site-bound approach that fails to consider this wider context. The absence of recorded monuments within the redline boundary does not equate to absence of archaeological sensitivity.

The EIAR's own significance matrix (Table 13-2) classifies Recorded Archaeological Monuments and Protected Structures at 'Very High' baseline value. Yet despite this acknowledged Very High baseline value, the EIAR concludes that the residual significance of effects on the two Zone of Notification crossings (CH019–CH020) is 'Slight', and on CH057 and CH059 is 'Negligible' (Table 13-19). These conclusions are not consistent with the applicant's own significance matrix and are not supported.

Athenry castle – built in the 13th century- huge Tourism attraction for Athenry town

3.16.4 Relationship with Athenry and Cultural Hinterland

The site is located approximately **2km west of Athenry, a medieval heritage town** of recognised archaeological importance. Chapter 13 (Section 13.3.2.1) confirms that Galway County Council describes the Athenry Town Centre ACA as having 'international significance', noting that 'the form, attractiveness and uniqueness of the town are of international significance and a potentially greater cultural attraction'.

The closest ACA is Athenry Town Centre, located approximately 2.5km east of the site (Section 13.3.2.1, Table 13-16). The EIAR relies on ZTV and visibility analysis to conclude no visual impact on the ACA. That approach is inadequate. The EIAR's own assessment of heritage setting (Section 13.2.9) cites Historic England guidance that setting is not simply the visual envelope of an asset but encompasses those parts of its surroundings relevant to the significance of the asset and its appreciation. The EIAR then fails to apply this standard to Athenry.

The EIAR (Section 13.3.2.1) argues that the site was historically wet and marshy and 'unlikely to have been historically associated with the town', and therefore the development will have 'no predicted effect' on the Athenry ACA. This reasoning is flawed:

Wet and marginal lands are frequently associated with prehistoric and early medieval activity, including the three fulachta fiadh (CH029–CH031) located 600m south-west of the site (Section 13.3.4.1) — the argument that wet land cannot form part of a historic cultural hinterland is contradicted by the EIAR's own archaeological background section

The EIAR's own setting methodology (Table 13-7, citing Historic England 2017) identifies 'changes in landscape character' as a key factor: 'a particular land use regime may be essential to the appreciation of an asset's function' and 'changes in land use can leave the asset isolated and reduce its value' — this standard is not applied to Athenry

The ZTV overlap of 0.269ha between the upper elements of the plant and the RMP Zone of Notification for Athenry town (Section 13.3.2.1) is dismissed without adequate analysis — the EIAR acknowledges this overlap exists but does not assess its significance.

The introduction of a 30m stack, 36m telecommunications mast, large above-ground storage tanks and associated lighting into the rural landscape immediately west of a town of international heritage significance alters the setting and perception of Athenry regardless of whether the development is directly visible from the historic core.

Cultural heritage is not confined to the town core. It includes the surrounding rural landscape, the historic hinterland, and the relationship between settlement and agriculture. The EIAR adopts an overly narrow and incomplete interpretation of heritage setting that does not meet the standard of its own cited guidance.

3.16.5 Zones of Notification, Direct and Indirect Effects on Recorded Monuments

Chapter 13 (Sections 13.4.3.3, 13.4.6, and Table 13-17) confirms the following direct and indirect effects on recorded and unregistered heritage:

- **CH019 (GA084-096001) — Castle, Moanbaun** Zone of Notification crossed by the UGC route. Indirect effect on the monument by directly affecting potential unknown subsurface archaeology within the Zone. Pre-mitigation significance: Moderate (Table 13-17). Post-mitigation significance: Slight (Table 13-19).
- **CH020 (GA084-096002) — Earthwork, Moanbaun** Zone of Notification crossed by the UGC route. Same assessment as CH019. Pre-mitigation significance: Moderate. Post-mitigation significance: Slight (Table 13-19).
- **CH057 (UCH01) — Vernacular Structure, Pollnagroagh** Direct, physical effect from the proposed site entrance and access road groundworks. This section of greenfield was not the subject of the preceding test excavation. Pre-mitigation effect magnitude: Significant. Post-mitigation significance: Negligible (Table 13-19).
- **CH059 (UCH03) — Vernacular Structure, Lisheenkyle East** Direct, physical effect from the HDD exit pit groundworks under the M6. Pre-mitigation effect magnitude: Significant. Post-mitigation significance: Negligible (Table 13-19).

These confirmed effects raise serious concerns:

- The EIAR classifies Recorded Archaeological Monuments (RMPs) at 'Very High' baseline value in its own significance matrix (Table 13-2). Applying a 'Very High' baseline against a 'Moderate' magnitude of effect produces a significance of 'Moderate' to 'Significant' on the EIAR's own matrix (Table 13-6). The EIAR's post-mitigation conclusion of 'Slight' for the RMP crossings (Table 13-19) is not consistent with its own assessment criteria
- The EIAR classifies CH057 at 'Low' baseline value (Table 13-17) yet acknowledges that the vernacular structure was not the subject of test excavation and that potential subsurface remains exist. An unexcavated, untested structure with confirmed potential

for subsurface remains cannot reliably be assigned a Low baseline value prior to investigation
- The EIAR classifies CH059 at 'Medium/Low' baseline value (Table 13-17). Given that the site is a vernacular structure with confirmed potential for unknown subsurface remains, and that the groundworks involve an HDD exit pit, this classification is not supported
- The post-mitigation significance of 'Negligible' for both CH057 and CH059 (Table 13-19) is reached by applying archaeological monitoring as the sole mitigation measure. Monitoring is a reactive measure that does not avoid or reduce impact — it records impact after it occurs. It cannot reduce a 'Significant' pre-mitigation effect to 'Negligible' residual significance on a site that has not been pre-excavated
- ARC 10 and ARC 12 of the Galway County Development Plan are directly engaged by the Zone of Notification crossings. The EIAR does not demonstrate compliance with these provisions

3.16.6 Survey Methodology and Limitations

The archaeological assessment involved a field inspection on 24 February 2025, a geophysical survey on 26 February 2025, and a test excavation between 7–14 July 2025 (Sections 13.2.3.1–13.2.3.3). The following limitations apply:

Field Inspection and Geophysical Survey

- The field inspection and geophysical survey were both conducted on 26 February 2025, during winter conditions, on a site that Chapter 13 itself confirms was partially flooded at the time of investigation (Section 13.3.3.5)
- The geophysical survey covered 9.76 hectares of the Peaker Plant site only. The 8.1km UGC corridor was not subject to geophysical survey prior to the planning application. This represents a significant information gap given the confirmed Zone of Notification crossings and undesignated heritage sites along the route
- Chapter 13 (Section 13.2.3.2) notes that the GPS-referenced survey provides strong confidence when integrating results with aerial imagery, yet the flooded site conditions acknowledged in the same chapter undermine the confidence that can be placed in the anomaly interpretations

Test Excavation

- 25 test trenches were excavated within the Peaker Plant footprint, with a further 4 trenches along the proposed access route (Section 13.2.3.3, 13.3.7). No trenches were excavated along the 8.1km UGC corridor
- The section of greenfield containing CH057 (vernacular structures, Pollnagroagh) was explicitly not the subject of test excavation (Section 13.4.3.4). This is acknowledged in the EIAR yet no further investigation was undertaken prior to submission
- The area of CH059 (vernacular structure, Lisheenkyle East) was not pre-excavated. Mitigation relies entirely on monitoring during HDD exit pit construction (Section 13.5, mitigation 1b)
- The EIAR (Section 13.2.11) states: 'There were no difficulties or limitations encountered during the compilation of this report.' This statement is inconsistent with the acknowledgement elsewhere in the same chapter that surveys were conducted in

flooded conditions and that key sites were not the subject of test excavation prior to submission. This internal inconsistency undermines confidence in the assessment

3.16.7 Geophysical Anomalies, Test Excavation Results and Reliability

The geophysical survey (Licence No. 25R0081) identified nine areas/features of archaeological potential (CH047–CH055) within the Peaker Plant site (Section 13.3.3.5, Table 13-13). These included:

- Six anomalies (CH047–CH052) interpreted as possible spreads of burnt/fired material, concentrated in the northern half of the field
- CH047 (Anomaly 1) — possible pit/deposit containing burnt/fired material; interpretation described as 'cautious' with natural origin also possible
- CH053 (Anomaly 7) — potential pit/deposit with magnetic strength up to 85 nT, suggesting burnt/fired material 'such as that potentially associated with an archaeological oven-type feature' (Dowling 2025, 15)
- CH051 (Anomaly 5) — investigated in an area that was flooded at the time of survey
- CH055 (AAP02) — interpreted as possibly reflecting imported material for land reclamation or dumping; 'an archaeological origin cannot be discounted' (Table 13-13)

The test excavation (Licence No. 25E0549, 7–14 July 2025) concluded that all nine anomalies corresponded to land clearance features or natural limestone bedrock, and were not of archaeological significance (Section 13.3.7, Table 13-15). However, the following concerns apply:

- The geophysical survey was conducted in partially flooded winter conditions (26 February 2025). The EIAR's own geophysical specialist notes that the GPS-referenced survey ensures 'repeatability should further investigation of anomalies be required' (Section 13.2.3.2) — this implicitly acknowledges the provisional nature of geophysical interpretation pending ground-truthing
- CH053 (Anomaly 7) was described in the geophysical report as having magnetic strength suggesting an archaeological oven-type feature. The test excavation attributed this to land clearance burning. No independent review of this interpretation has been provided
- The test excavation was conducted by the same contractor (Rubicon Archaeology Limited) that carried out the geophysical survey and the field inspection. No independent peer review of the test excavation conclusions has been provided
- The EIAR's residual effects section (Section 13.6) states that 'the potential to excavate this site through the construction phase will provide data to the archaeological community from the potential subsurface sites' in relation to CH019, CH020, CH057 and CH059. This reasoning — that excavating unknown archaeology during construction is an acceptable outcome because it generates data — is inconsistent with the state policy preference for preservation in situ cited in Section 13.5

3.16.8 Historical Land Use, Site Modification and Cartographic Evidence

Chapter 13 (Section 13.3.3.1) presents cartographic evidence from the First Edition 6-inch OS map (1840), the 25-inch OS map (1894), and the 6-inch Cassini map (1933). This evidence shows:

- The 6-inch OS map (1840) depicts the site as an enclosed field comprising wet, marshy ground
- By the 25-inch OS map (1894), the field had merged with surrounding fields into a larger rectangular field, described as rough pasture, indicating land improvement activity in the intervening period
- The 6-inch Cassini map (1933) shows the western half of the large field re-enclosed, creating the modern field pattern

In addition, a review of historical aerial imagery presented in Appendix E of this submission demonstrates progressive land modification beyond the nineteenth century improvements described in the EIAR. This raises uncertainty as to when the most recent ground disturbance occurred and whether archaeological remains may have been disturbed, obscured, or redistributed.

This interpretation is further supported by visual evidence, including historical video footage of the site prior to recent clearance works (available at: https://youtu.be/10C1YdaQhN4), which shows the presence of more extensive vegetation and natural landscape features than currently exist. Taken together, the cartographic, aerial, and visual evidence demonstrates that the site has undergone progressive and relatively recent landscape modification, including clearance, drainage, and land management practices.

Such changes are significant in the context of archaeological assessment, as they introduce uncertainty regarding the condition and distribution of any subsurface remains. Ground disturbance and land alteration may result in archaeological material being partially disturbed, redistributed, or obscured beneath reworked soils. In these circumstances, the current absence of visible archaeological features cannot be relied upon as an indicator of low archaeological potential.

The EIAR uses the historical wet/marshy character of the site to argue that it was 'unlikely to have been historically associated with the town' of Athenry (Section 13.3.2.1) and to minimise heritage significance. This reasoning is undermined by the EIAR's own archaeological background section (Section 13.3.4.1), which confirms that three fulachta fiadh (CH029–CH031) — a monument type 'usually situated close to a water source, like a stream, or in wet marshy areas' — are recorded 600m south-west of the site. Wet and marginal land is archaeologically productive, not archaeologically inert.

Furthermore, the EIAR's own significance matrix (Table 13-2) classifies 'Marshy/wetland areas' at 'Medium/High' baseline value. The site's documented wet/marshy character on the 1840 OS map should therefore increase, not decrease, the assessed archaeological sensitivity of the baseline environment.

3.16.9 Cultural Landscape and Time Depth

The receiving environment is a historic agricultural landscape of significant time depth. Chapter 13 (Section 13.3.4) establishes an unbroken sequence of human activity from the prehistoric period through to the post-medieval era:

- Prehistoric: three fulachta fiadh (Bronze Age), a standing stone (CH022), a ring-barrow (CH021), and five undated enclosures
- Early medieval: seven known ringforts, five cashels, two souterrains (CH011, CH028) indicating settlement continuity from c. AD 400
- Medieval: an unclassified castle (CH019) in Moanbaun
- Post-medieval and early modern: Castlelambert demesne (CH006), designed landscape features (CH015, CH016), 18th/19th century estate history

The place name evidence (Section 13.3.5, Table 13-14) further reinforces this cultural depth. Townland names within the study area include Ráth Mhuirisín (Rathmorrissy — translating as 'ring-fort'), Lisín Coill (Lisheenkyle — containing 'small ring-fort'), and An Tobar Rua (Toberroe — containing 'well'), each indicating landscape features of cultural and archaeological significance embedded in the living place name record.

The EIAR does not adequately assess the cumulative cultural value of this multi-period landscape, nor the effect of introducing a 19.17-hectare industrial facility and 8.1km underground cable corridor into it. The development represents a permanent shift from agricultural to industrial land use, a break in the historic land use continuity of the landscape, and an irreversible change to the character of a landscape that the EIAR's own archaeological background section describes as a place of unbroken human occupation.

3.16.10 Interaction with Landscape and Visual Impact

The proposed development includes a 30m exhaust stack (7m diameter), a 36m high telecommunications mast, two above-ground diesel storage tanks at 11.1m high, a demineralised water tank at 15.4m high, a fire and service water tank at 13m high, and associated lighting across a 19.17-hectare greenfield site. These elements introduce skyline intrusion, visual dominance, and permanent alteration of rural landscape character.

Chapter 13 (Section 13.4.6, Table 13-18) confirms that the Peaker Plant is visible from 14 heritage sites, divided across visual buffer zones:

- **Blue buffer (lower, middle and upper elements visible):** CH003 (Ringfort-cashel), CH004 (Enclosure), CH005 (Enclosure), CH006 (Country house/Castlelambert), CH007 (Ringfort), CH010 (Large enclosure), CH011 (Souterrain), CH014 (Ringfort-rath), CH021 (Ring-barrow), CH023 (Ringfort-cashel), CH036 (Ringfort-rath — 100m west)
- **Green buffer (middle and upper elements visible):** CH009 (Ringfort-rath), CH026 (Ringfort-rath), CH035 (Ringfort-cashel)

For all 14 heritage assets with confirmed visibility, the EIAR recommends no screening or mitigation on the grounds that the sites are on private land, are not accessible to the public, and are not considered visual amenities (Section 13.4.6). This reasoning is seriously deficient:

- The EIAR's own setting methodology (Section 13.2.9, Table 13-7, citing Historic England 2017) identifies 'intervisibility' as a key factor: 'Certain archaeological or historic landscape features were intended to be seen from other historic sites. Construction of a proposed project should respect this intervisibility.' The EIAR does not apply this principle to any of the 14 affected sites

- Ringforts are specifically noted in Chapter 13 (Section 13.3.4.2) as typically positioned on 'the shoulder of ridges or at breaks of slopes' to 'command an extensive view' — the deliberate placement of these monuments for visual prominence is acknowledged by the EIAR yet this characteristic is entirely disregarded in the visual impact assessment
- The fact that heritage assets are on private land does not remove the statutory obligation to protect their setting under ARC 4 and ARC 9 of the Galway County Development Plan, which requires protection of 'visual amenity' of recorded monuments regardless of access
- The dismissal of screening for all 14 affected heritage assets — including CH036, the excavated ringfort 100m from the site with confirmed internal structures and inhumations — without an evidence-based assessment of the impact on each asset's setting is not consistent with the requirements of the EIA Directive or the EIAR's own cited guidance
- The EIAR separates landscape impact (Chapter 6) and cultural heritage impact (Chapter 13). No integrated assessment of heritage setting in the context of landscape change has been carried out, contrary to EIA Directive Article 3

Athenry's Heritage Centre- Athenry is a tourism town

3.16.11 Tourism and Heritage Value

Athenry is a recognised heritage destination. Galway County Council describes the Athenry Town Centre ACA as being of ***'international significance'*** and ***'a potentially greater cultural attraction'*** (Section 13.3.2.1). Tourism depends on historic character, landscape setting and cultural identity.

The introduction of a 30m stack, a 36m telecommunications mast and large above-ground industrial tanks into the rural landscape immediately west of a town of international heritage significance alters the perception of heritage, introduces incongruous industrial elements into the cultural setting, and affects the visitor experience of Athenry's historic assets.

The NTS confirms that the landscape change will be moderate adverse during construction (NTS 6.2.1) and slight adverse during operation (NTS 6.2.1) — a long-term adverse impact on the landscape in which a heritage destination of international significance is set. The EIAR does not assess the downstream effects of this landscape change on heritage tourism or on the visitor experience of Athenry's historic assets.

3.16.12 Cumulative Effects

Chapter 13 does not provide an adequate assessment of cumulative cultural heritage effects. The NTS cumulative heritage assessment (Section 16.10) identifies only a lapsed milking parlour permission, a wind turbine test site, and two solar farms as cumulative projects. This is insufficient.

The following cumulative heritage impacts are not assessed:

- The combined heritage impact of the Peaker Plant, the 8.1km UGC corridor traversing eight townlands, the 36m telecommunications mast, the proposed access road affecting CH057, and the HDD exit pit affecting CH059, when considered as a single integrated project across the cultural landscape
- The proposed Gannow Windfarm (8 turbines, maximum tip height 185m, Pl. Ref. 25/61412) and its combined visual and setting impact on the shared archaeological landscape, including the ringfort and enclosure network visible from the Peaker Plant site
- The proposed 30m telecommunications lattice mast adjacent to the site (GCC Ref. 2561637), assessed in the NTS as resulting in a slight adverse cumulative visual effect (NTS 16.3.1), in combination with the Peaker Plant structures on the setting of the 14 heritage assets with confirmed visibility
- Progressive industrialisation of the agricultural hinterland of a medieval town of international heritage significance — the combined effect of the Peaker Plant, UGC, mast, and associated infrastructure on the character of the cultural landscape surrounding Athenry

The EIAR's conclusion that 'no residual cumulative effects on archaeological, architectural and cultural heritage are predicted' (NTS 16.10.1) is stated without adequate supporting analysis and is not consistent with the breadth of development now proposed across this landscape.

3.16.13 EIAR Methodology and Legal Deficiency

The EIAR relies on limited investigation, focuses on direct physical impacts, separates heritage from landscape, and does not adequately assess setting or cumulative effects. This approach is inconsistent with the requirements of Holohan v An Bord Pleanála, which require a complete assessment of environmental effects and full consideration of interactions between factors. Specific legal and methodological deficiencies include:

- The EIAR (Section 13.2.11) states that 'there were no difficulties or limitations encountered' during the assessment. This is irreconcilable with the confirmed flooded survey conditions, the absence of geophysical survey along the 8.1km UGC corridor, and the absence of test excavation at CH057 and CH059 prior to submission
- The applicant's own significance matrix (Tables 13-2 and 13-6) produces significance levels inconsistent with the post-mitigation conclusions in Table 13-19: a Very High baseline site subject to a Moderate effect should yield a Moderate to Significant residual significance, not Slight
- Archaeological monitoring proposed as mitigation for CH057 and CH059 (Section 13.5) is a reactive measure that records rather than avoids impact. It cannot reduce a significant pre-mitigation effect to Negligible residual significance for sites that were not pre-excavated
- The EIAR's own setting guidance (Section 13.2.9, Table 13-7) is not applied to any of the 14 heritage assets with confirmed visibility of the Peaker Plant, including the intervisibility principle identified as a key factor by Historic England 2017
- The study area for the UGC was limited to a 250m buffer (Section 13.1.2, Table 13-1). No geophysical survey was carried out along the cable corridor prior to submission, meaning the full heritage baseline for 8.1km underground route traversing eight townlands has not been established

- The reasoning in Section 13.6 that excavating unknown archaeology during construction is acceptable because it 'provides data to the archaeological community' conflicts with state policy (cited in Section 13.5) that preservation in situ is the preferred option
- No independent peer review of the test excavation conclusions has been provided, despite the same contractor carrying out the field inspection, geophysical survey and test excavation

3.16.14 Conclusion

The proposed development is located within a culturally sensitive landscape associated with Athenry, a town described by Galway County Council as being of international heritage significance and characterised by a concentration of 70 recorded archaeological and cultural heritage sites across multiple periods from prehistoric to post-medieval. The EIAR concludes that residual impacts will be not significant. That conclusion is not supported.

In particular, the assessment fails to demonstrate that:

- Archaeological sensitivity has been adequately characterised across the full project boundary, given that geophysical survey was limited to the Peaker Plant site and test excavation did not cover CH057 or the 8.1km UGC corridor
- The EIAR's conclusion that 'no difficulties or limitations were encountered' (Section 13.2.11) is credible, given the confirmed flooded survey conditions and unexcavated heritage sites
- The post-mitigation significance of 'Slight' for the RMP Zone of Notification crossings (CH019–CH020) is consistent with the applicant's own significance matrix, which produces Moderate to Significant for a Very High baseline site
- The post-mitigation significance of 'Negligible' for CH057 and CH059 is supported, given that these sites were not pre-excavated and the sole mitigation is reactive archaeological monitoring during construction
- The setting of heritage assets will not be adversely affected by the 30m stack, 36m mast, large storage tanks and associated lighting confirmed as visible from 14 heritage assets, including the excavated ringfort 100m from the site
- The dismissal of screening for all 14 visually affected heritage assets is consistent with the EIAR's own cited guidance on intervisibility (Historic England 2017, Table 13-7)
- The historical wet/marshy character of the site reduces rather than increases its archaeological sensitivity, given that the EIAR's own matrix assigns Medium/High baseline value to marshy/wetland areas, and the same chapter identifies fulachta fiadh in wet marshy land 600m from the site
- The cultural landscape of multi-period settlement and agriculture surrounding a town of international heritage significance will not be adversely affected by the permanent industrialisation of 19.17 hectares and an 8.1km underground corridor
- Cumulative heritage impacts have been adequately assessed, including the combined effect of the Peaker Plant, UGC, telecommunications mast, access road and associated infrastructure across the Athenry cultural hinterland
-

The proposed development conflicts with the policy framework set out in the Galway County Development Plan (ARC 4, ARC 9, ARC 10, ARC 12) and the Athenry Town Centre First Plan (Appendix I), which emphasise the protection of heritage setting and the relationship between the town and its surrounding landscape.

Accordingly, the conclusions of the EIAR are not supported, and the proposed development is not consistent with the protection of cultural heritage or the proper planning and sustainable development of the area.

3.17 Aviation Safety & Air Corps Safeguarding

3.17.1 Overview of Assessment

The EIAR does not include a dedicated assessment of the potential effects of the proposed development on aviation safety. Instead, aviation is referenced only in the context of stakeholder consultation, where it is noted that the Irish Aviation Authority (IAA) was notified and confirmed receipt, with no further response recorded.

The EIAR relies on this absence of comment as an indication that no significant aviation safety issues arise. This approach is not sufficient.

The Environmental Impact Assessment Directive requires that all likely significant effects of a proposed development be identified, described and assessed. This obligation rests with the developer and cannot be satisfied through reliance on consultation responses alone. The absence of a response from a statutory body does not constitute an assessment, nor does it demonstrate that potential effects have been evaluated.

The proposed development includes vertical structures commonly subject to aviation assessment, including a stack of approximately 30 metres and a mast of approximately 36 metres, together with associated lighting and infrastructure. These elements constitute potential aviation obstacles and introduce interaction with airspace that has not been assessed.

Accordingly, the EIAR does not provide a complete, precise and definitive assessment of aviation safety.

3.17.2 Aviation Safeguarding Policy Context

Aviation safety considerations extend beyond civil aviation and include military and emergency aviation activity.

The Irish Air Corps has published aviation safeguarding guidance in relation to tall structures, emphasising the need to protect low-level flight corridors and avoid obstruction of operational airspace. While not specific to this development, this guidance reflects established State aviation safety principles and the operational requirements of military and emergency aviation, including the need to maintain safe and unobstructed low-level airspace.

The EIAR does not demonstrate that these considerations have been taken into account.

3.17.3 Low-Level and Emergency Aviation Activity

The receiving environment is a rural area within the wider Galway region, where airspace is commonly used for low-level helicopter navigation, emergency aviation operations, infrastructure inspection (including gas pipelines), and routing along transport corridors.

Emergency aviation services operating in the region include the Irish Coast Guard, the HSE Air Ambulance, and the Garda Air Support Unit. These operations frequently occur at low altitude, are time-critical in nature, and may take place in conditions of reduced visibility or adverse weather.

The introduction of permanent vertical structures into this environment reduces available manoeuvring space, introduces fixed obstacles into otherwise open rural airspace, and increases operational complexity for pilots. The EIAR does not assess these effects.

3.17.4 Physical Obstruction and Structure Height

The proposed development introduces vertical elements which may interact with aviation activity, including the potential to obstruct low-level flight, interfere with visual navigation, and reduce available clearance margins.

The EIAR does not include obstacle limitation analysis, a spatial assessment of aviation activity, or an evaluation of worst-case aviation scenarios. In the absence of such analysis, it has not been demonstrated that aviation safety will not be affected.

3.17.5 Lighting and Visibility Effects

The proposed development includes lighting associated with tall structures, which may affect aviation safety through visual distraction, confusion with other light sources, and reduced clarity of navigation cues.

In rural environments with low background lighting, such effects may be more pronounced. The EIAR does not assess the interaction between aviation lighting and site lighting, cumulative lighting effects, or visibility under varying meteorological conditions.

3.17.6 Interaction with Meteorological Conditions

Aviation safety is highly dependent on visibility and weather conditions. In circumstances such as fog, low cloud, or night-time operation, pilots rely heavily on visual cues and awareness of obstacles.

The EIAR does not assess how the proposed development may interact with such conditions or affect aviation safety under reduced visibility scenarios.

3.17.7 Interaction with Major Accident Scenarios (Chapter 3.12)

A significant deficiency arises in the failure to assess the interaction between aviation safety and major accident scenarios. As set out in Chapter 3.12, the proposed development introduces risks including fire, explosion, diesel pool fires, and vapour cloud explosions.

In such events, smoke plumes may reduce visibility, combustion gases may affect airspace conditions, and thermal effects may alter local air behaviour. These factors are directly relevant to aviation safety, particularly in the context of helicopter access, emergency response operations, and low-altitude manoeuvring.

The EIAR does not assess the impact of smoke on aviation visibility, the interaction between accident scenarios and aviation operations, or the ability of emergency aviation services to operate safely. This represents a failure to assess interaction between environmental factors.

3.17.8 Strategic Aviation Context

Galway Airport, while not currently operational, remains part of the wider strategic aviation context. Planning decisions must therefore consider long-term infrastructure capacity and the safeguarding of future aviation use.

The introduction of tall structures may introduce additional obstacle constraints and reduce future aviation flexibility. These issues are not assessed in the EIAR.

3.17.9 EIAR Deficiency and Legal Context

The EIAR fails to include a dedicated assessment of aviation safety and does not evaluate the effects of vertical structures on aviation activity, low-level and emergency aviation operations, interaction with major accident scenarios, or lighting and meteorological effects.

This is inconsistent with the requirements of the Environmental Impact Assessment Directive and established case law, including *Holohan v An Bord Pleanála* and *Sweetman v An Bord Pleanála*, which require a complete assessment of environmental effects, consideration of interactions between environmental factors, and a fully integrated evaluation.

Reliance on stakeholder consultation alone does not meet this standard.

3.17.10 Conclusion

The proposed development introduces vertical structures and associated infrastructure into a rural airspace environment used by low-level and emergency aviation. The EIAR does not include a dedicated aviation safety assessment and relies solely on stakeholder consultation without substantive analysis.

In circumstances where aviation safety has not been assessed as an environmental factor, interaction with low-level and emergency aviation has not been evaluated, interaction with major accident scenarios has not been assessed, and lighting and visibility effects have not been considered, it has not been demonstrated that the proposed development will not give rise to adverse effects on aviation safety.

Accordingly, a relevant environmental factor has not been assessed, interaction with other risks has not been evaluated, and the EIAR is incomplete. This represents a material deficiency in the environmental assessment, and the conclusions of the EIAR cannot be relied upon.

3.18 Housing, Residential Amenity & Land Use Compatibility

3.18.1 Overview of Assessment

The EIAR does not include a dedicated assessment of housing, residential amenity, property, or long-term residential investment. Instead, these matters are addressed only indirectly through other environmental topics, including noise and vibration (Chapter 3.9), air quality (Chapter 3.6), traffic and infrastructure (Chapter 3.14), and major accident risk (Chapter 3.12). Within those chapters, the EIAR concludes that impacts on human receptors will be not significant. That conclusion is not supported.

Housing is a distinct and critical planning consideration encompassing residential amenity, quality of life, safety and suitability for habitation, long-term residential investment, and future housing potential. These matters require a coherent and integrated assessment, which has not been provided.

3.18.2 Receiving Environment

The receiving environment comprises an established rural residential area within the wider catchment of Athenry, characterised by dispersed one-off housing, agricultural landholding, and long-standing family-based settlement patterns. The area is recognised as a desirable residential location due to its proximity to Athenry town, access to schools and services, and connectivity to Galway City.

The introduction of a large-scale industrial energy facility into this environment represents a significant and fundamentally incompatible change in land use.

3.18.3 Land Use Compatibility

The proposed development introduces an industrial energy facility into a rural residential and agricultural environment. This gives rise to an inherent conflict between industrial land use, residential use, and agricultural activity.

Planning policy requires that incompatible land uses are avoided, residential amenity is protected, and development is appropriately located. In planning terms, the key issue is not whether impacts can be mitigated individually, but whether the development is compatible with residential use in this location.

The EIAR does not demonstrate that the proposed development is compatible with the receiving environment.

3.18.4 Residential Amenity and Quality of Life

Residential amenity is determined by the combined effect of environmental factors, including air quality, noise and vibration, visual impact, lighting, and traffic.

The proposed development introduces large-scale industrial structures, including a 30 metre stack and a 36-metre mast, together with operational activity, intermittent noise, artificial lighting, and both construction and operational traffic.

While these factors are assessed individually within the EIAR, their combined effect on residential amenity is not addressed (see Chapter 3.19). In practice, these effects occur simultaneously, are experienced cumulatively by residents, and materially alter the character and experience of the area as a place to live.

3.18.5 Proximity to Residential Receptors

Residential receptors are located in close proximity to the proposed development, including dwellings approximately 550–600 metres from the site and a dwelling approximately 19 metres from the access road. These receptors will be exposed to construction traffic, abnormal load movements, operational activity, and potential major accident scenarios.

As set out in Chapter 3.12, consequence zones extend beyond the site boundary and a statistical expectation of fatalities is identified. The EIAR does not demonstrate that residential receptors are adequately protected in a planning context or that the proposed development is compatible with nearby residential use.

3.18.6 Residential Investment and Stability

Residential properties within the receiving environment represent significant financial investment, long-term family commitment, and ongoing improvement and upgrading, often at considerable cost, including investment in energy efficiency measures.

Such investment is made in reliance on environmental quality, land use stability, and the compatibility of surrounding development. The introduction of a large-scale industrial facility into this environment introduces uncertainty and potential incompatibility, undermining confidence in the long-term suitability of the area for residential use.

The EIAR does not assess the effect of the proposed development on residential investment or the relationship between environmental change and long-term confidence in the area.

3.18.7 Future Development Potential

The Galway County Development Plan 2022–2028 supports sustainable rural housing and the maintenance of rural communities.

The receiving environment includes lands in established residential use and lands suitable for future residential development. The proposed development may adversely affect future planning applications, constrain extensions to existing dwellings, and restrict both agricultural and residential development.

Such constraints may arise from proximity to industrial activity, environmental effects, and infrastructure limitations, including underground cabling (see Chapter 3.15). The EIAR does not assess these impacts or their implications for the future development of the area.

3.18.8 Conclusion

The proposed development introduces large-scale industrial infrastructure into an established rural residential environment.

The EIAR does not include a dedicated assessment of housing or residential amenity and does not demonstrate that the proposed development is compatible with residential use in this location. Key issues including proximity to dwellings, long-term residential investment, and future development potential are not adequately assessed.

In these circumstances, it has not been demonstrated that the proposed development will not give rise to adverse effects on residential amenity or that it represents an appropriate form of development in this location.

3.19 Cumulative and Interaction Effects

3.19.1 Overview of Assessment

The Environmental Impact Assessment Report (EIAR) is required to assess cumulative effects and the interactions between environmental factors in accordance with the Environmental Impact Assessment Directive. While individual environmental topics are addressed within separate chapters, the EIAR does not provide a clear, coherent, or quantitative assessment of cumulative effects or the interactions between them. This represents a significant and material deficiency in the assessment of the proposed development.

3.19.2 Nature of Cumulative Effects

Cumulative effects arise where multiple environmental impacts occur together and interact over time. These effects may differ in nature, scale, and duration, but when combined can give rise to impacts greater than those identified in individual assessments.

In the context of the proposed development, cumulative effects include the combined influence of air quality, noise and vibration, traffic, visual impact, lighting, groundwater risk, and major accident scenarios. The EIAR assesses these factors separately and does not evaluate their combined effect on the receiving environment or on individual receptors.

3.19.3 Interaction Between Environmental Factors

Environmental effects do not occur in isolation. There is a clear and direct potential for interaction between the environmental factors arising from this development, including:

- interaction between traffic volumes, road condition, and noise — construction HGV movements on the L3103 generate both noise and vibration impacts that are not assessed in combination
- interaction between air emissions and human health — combustion emissions from the gas turbine interact directly with human health outcomes but are assessed under separate chapters without integration
- interaction between major accident scenarios and emergency response — fire, explosion, and vapour cloud scenarios affect traffic circulation and emergency access simultaneously
- interaction between visual intrusion and residential amenity — the combined effect of lighting, visual change, and industrial noise on the lived experience of nearby residents is not assessed
- interaction between groundwater risk and agricultural land use — contamination pathways in a karst limestone setting interact with agricultural and domestic water supply in ways the EIAR does not evaluate

The EIAR does not provide a structured assessment of these interactions or evaluate how impacts may combine or amplify one another. This limits the reliability of the conclusions reached in each individual chapter.

3.19.4 Combined Impact on Sensitive Receptors

The receiving environment includes sensitive receptors — residential properties, agricultural land, and groundwater resources — each of which is subject to multiple concurrent impacts. The EIAR does not provide an integrated assessment of how these combined impacts affect specific receptors. In practice:

- residents at the nearest Noise Sensitive Locations (NSLs) are simultaneously exposed to noise, operational lighting, altered visual character, traffic, and perceived major accident risk — none of which is assessed in combination
- agricultural land in the vicinity may be affected by both groundwater contamination risk and air emissions from plant operation, with no integrated assessment of combined effect on land quality or food production
- the road infrastructure of the L3103 is subject to combined construction traffic, operational maintenance traffic, abnormal load movements, and emergency access requirements that are not assessed in aggregate

The proposed development also comprises multiple components — including the generating plant, fuel storage infrastructure, site access works, underground cabling, and construction and operational traffic — each giving rise to its own impacts. The EIAR does not adequately assess how these elements combine in practice or the cumulative burden arising from their interaction.

3.19.5 Site Coverage and Physical Intensification

The cumulative impact of the development is further intensified by the extent of site coverage. Approximately 64% of the site will comprise impermeable surfaces, including buildings, roadways, and hardstanding. This represents a substantial alteration of natural ground conditions and gives rise to:

- increased surface water runoff and reduced natural infiltration, with direct implications for groundwater recharge in a karst setting
- intensification of visual impact through the elimination of natural landscape features across a substantial site area
- reduced ecological connectivity and soil function across the development footprint

These physical effects interact with groundwater vulnerability, landscape character, and ecological conditions. They are not assessed cumulatively within the EIAR.

3.19.6 Temporal and Long-Term Cumulative Effects

Cumulative effects must be considered over time. The proposed development will operate until 31 December 2050, meaning construction-phase impacts will be followed by over two decades of operational impacts. The EIAR does not adequately assess:

- how construction and operational phases interact — in particular, whether ground disturbance during construction affects groundwater vulnerability during the operational phase
- how repeated and intermittent impacts, such as traffic movements, operational emissions, and start-up noise events, may contribute to long-term environmental change

- how prolonged exposure to combined environmental stressors — noise, air quality, visual change — affects residential amenity and human health over the operational lifetime

Long-term cumulative change of this nature is not assessed in an integrated manner within the EIAR.

3.19.7 Interaction with Major Accident Risk

As set out in Chapter 3.12, the proposed development introduces major accident scenarios including fire, explosion, and vapour cloud hazards. These risks interact with other environmental factors in ways the EIAR does not assess:

- traffic conditions and the capacity of the L3103 affect emergency access and evacuation response
- air quality pathways would be materially affected by smoke and combustion products in an incident scenario
- the proximity of residential receptors increases the potential for off-site consequences
- cumulative environmental conditions — including groundwater vulnerability and settlement proximity — may influence the magnitude of incident consequences

The failure to assess these interactions means the overall public safety and environmental risk profile of the proposed development cannot be reliably determined.

3.19.8 Cumulative Effects with Existing and Future Development

The receiving environment already includes agricultural activity, rural residential use, existing traffic on local and national roads, and reliance on private groundwater wells. The proposed development adds additional pressures to this environment. The EIAR does not adequately assess:

- cumulative effects with existing infrastructure and land use, including the compounding effect of the proposed development on already-constrained road conditions
- interaction with existing environmental conditions, including baseline groundwater quality in a karst setting
- the potential for cumulative industrialisation of the rural landscape if the site establishes a precedent for further energy or industrial development
- long-term land use implications arising from permanent change of a greenfield agricultural site

3.19.10 Conclusion

The EIAR does not provide a comprehensive assessment of cumulative effects or the interaction between environmental factors. Multiple environmental impacts arise simultaneously, sensitive receptors are exposed to combined effects, interactions between factors are not assessed, and long-term accumulation of impacts is not evaluated.

Environmental impacts do not occur in isolation. The failure to assess their combined and interacting effects means that the overall environmental impact of the proposed development cannot be reliably determined. The conclusions of the EIAR are accordingly incomplete and not supported.

3.20 Sustainable Development, Policy Compliance & Planning Balance

3.20.1 Overview

The assessment of the proposed development must consider not only its immediate environmental effects, but also its contribution to sustainable development, the distribution of benefits and impacts, and its alignment with the statutory planning framework.

The Environmental Impact Assessment Report (EIAR) primarily addresses technical and operational aspects of the development but does not provide a clear and integrated assessment of these broader considerations.

3.20.2 Policy Framework

The determination of the proposed development must be made having regard to the Galway County Development Plan 2022–2028, national planning policy, and the principles of proper planning and sustainable development.

The Development Plan includes clear objectives relating to the protection of residential amenity, environmental quality, groundwater resources, agricultural land, rural character, and the appropriate siting of industrial development.

As identified in earlier chapters, land use compatibility has not been demonstrated (Chapter 3.18), environmental risks are not fully assessed (Chapters 3.11 and 3.12), impacts on infrastructure and safety remain unresolved (Chapter 3.14), and cultural and landscape impacts are not adequately addressed (Chapters 3.8 and 3.16).

In the absence of a complete assessment of these matters, it has not been demonstrated how the proposed development aligns with the objectives of the Development Plan.

3.20.3 Sustainable Development Principles

Sustainable development requires that environmental, social and economic factors are balanced, that impacts are not disproportionately borne by local communities, and that development is appropriately located.

The EIAR does not provide a comprehensive assessment of the distribution of benefits and impacts, the balance between local impacts and national benefits, long-term operational sustainability, intergenerational effects, or future land use implications.

This represents a gap in the assessment of the development as a whole.

3.20.4 Balance Between Benefits and Impacts

The proposed development is a large-scale energy infrastructure project involving fossil fuel-based energy generation, including natural gas and diesel backup, significant industrial infrastructure, and connection to national energy networks.

While the development contributes to national energy supply, grid stability, and strategic infrastructure provision, these benefits are national or regional in scale and are not directly linked to the local community.

In contrast, the impacts of the proposed development are localised, long-term in nature, and borne primarily by the surrounding community, including environmental effects, traffic and infrastructure impacts, major accident risk, impacts on residential amenity, land use constraints, and cultural and landscape impacts.

The EIAR does not provide an integrated assessment of how these impacts are distributed or whether this balance is appropriate.

The EIAR also does not clearly demonstrate the need for the proposed development at this location.

3.20.5 Long-Term Sustainability

The EIAR does not provide a robust assessment of the long-term operation of the proposed development over its anticipated lifespan, including to 2050.

Uncertainty remains in relation to future fuel sourcing, operational patterns, and the implications of gas supply constraints over time. In the context of evolving national and European energy policy and the transition toward decarbonisation, these factors are material to the assessment of long-term sustainability.

In the absence of a robust assessment of alternatives (see Chapter 3.4), it has not been demonstrated that this location represents the least environmentally damaging or most appropriate option.

The EIAR does not demonstrate that the proposed development is consistent with long-term climate policy or the transition to a low-carbon energy system.

3.20.6 Capacity of the Receiving Environment

Sustainable development requires that the receiving environment has the capacity to accommodate development without unacceptable impact.

As identified in earlier chapters, the receiving environment is characterised by rural residential use, agricultural activity, high groundwater vulnerability associated with karst geology, constrained road infrastructure, and proximity to sensitive receptors.

These characteristics indicate a limited capacity to accommodate large-scale industrial development, major accident risk, and sustained traffic intensification.

The EIAR does not demonstrate that the receiving environment has sufficient capacity to accommodate the proposed development without giving rise to unacceptable impacts. In this context, the issue is not solely the magnitude of potential impacts, but the suitability of the location for this type of development.

3.20.7 Future Land Use and Development Patterns

The EIAR does not consider how the proposed development may influence future land use patterns.

In particular, it does not assess the potential for similar infrastructure to locate in the area, the risk of clustering of energy or industrial development, or the long-term implications for rural land use and character.

This represents a material omission, as planning decisions must consider not only the immediate proposal but also its potential influence on future development patterns.

3.20.8 Planning Precedent and Policy Consistency

A fundamental principle of the planning system is that similar developments should be treated consistently unless material differences justify an alternative outcome.

The proposed development is of a scale and nature that is not typical of the receiving rural environment. In the absence of a clear and robust justification for a departure from established policy, the granting of permission may give rise to pressure for similar infrastructure in comparable rural locations.

This has the potential to cumulatively alter the character and function of rural areas, increase pressure for industrial-scale development in sensitive locations, and undermine the application of Development Plan policies relating to rural protection and the appropriate siting of development.

A relevant planning precedent exists in PL07.302034 (GCC Ref. 17/1538), in which permission for a solar farm was refused due to impacts on driver safety, including glare and visual distraction. This demonstrates that developments may be refused where risks to public safety or amenity are identified.

The EIAR does not consider the broader planning implications of permitting such development, including the precedent it may set, or how policy is to be applied consistently in future decision-making.

3.20.9 Precautionary Principle and Legal Context

The Environmental Impact Assessment Directive and European case law require that likely significant effects are fully assessed and that scientific uncertainty is addressed prior to decision-making.

As established in the *Waddenzee* case and *Sweetman v An Bord Pleanála*, where reasonable scientific doubt remains, it must be resolved, and reliance on mitigation alone is not sufficient.

As demonstrated throughout this submission, uncertainties remain in relation to environmental effects, interactions between environmental factors are not fully assessed (Chapter 3.19), and reliance is placed on mitigation and post-consent measures.

The EIAR does not demonstrate how these issues have been resolved in accordance with the precautionary principle.

3.20.10 Conclusion

The proposed development raises significant issues in relation to sustainable development, policy compliance, and the overall balance of impacts.

The EIAR does not provide a complete and integrated assessment of the development in terms of long-term sustainability, distribution of impacts, capacity of the receiving environment, or future land use implications.

In circumstances where:

- land use compatibility has not been demonstrated (Chapter 3.18)
- cumulative and interaction effects are not fully assessed (Chapter 3.19)
- environmental and safety risks remain unresolved
- the balance between local impacts and national benefits is not evaluated
- broader planning and precedent implications are not considered

it has not been demonstrated that the proposed development represents an appropriate or sustainable form of development in this location.

Taken together, the deficiencies identified in Chapters 3.18, 3.19 and 3.20 demonstrate that the environmental assessment is incomplete and that the proposed development has not been shown to be acceptable in planning terms.

Accordingly, the proposed development is not consistent with the principles of proper planning and sustainable development and should not be permitted.

3.21 Legal Requirements for Cumulative and In-Combination Effects

3.21.1 Overview

Building on the environmental deficiencies identified in Chapter 3.19, this section sets out the legal and procedural requirements relating to cumulative and in-combination effects and demonstrates that the EIAR does not meet those requirements. The consequence is that An Coimisiún Pleanála cannot be satisfied that the likely significant effects of the proposed development have been properly identified, described, and assessed.

3.21.2 Legal Basis

The requirement to assess cumulative and in-combination effects arises under the Environmental Impact Assessment Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU). Article 3 of the Directive requires that the environmental impact assessment identify, describe, and assess the direct and indirect significant effects of a project on a range of factors, and shall encompass the interaction between those effects.

This requirement has been given effect in Irish law through the Planning and Development Act 2000 (as amended) and the European Union (Planning and Development) (Environmental Impact Assessment) Regulations. The requirement is not discretionary. It is a condition of a valid environmental impact assessment that cumulative and interacting effects be assessed.

The requirement is further confirmed by the following case law:

- Holohan v An Bord Planála [2018] IESC 48 — the Supreme Court confirmed that environmental effects, including those on human health, must be assessed in a complete, precise, and integrated manner, taking account of cumulative and interacting factors. A failure to do so renders the EIAR legally deficient.
- O'Grianna v An Bord Planála [2017] IEHC 7 — the High Court confirmed that interactions between environmental factors must be evaluated and that the assessment must be complete and scientifically robust.
- People Over Wind v Coillte Teoranta (C-323/17) — the Court of Justice of the European Union confirmed that the cumulative effects of a project must be assessed, including in combination with other plans and projects.

3.21.3 The Segmented Approach and Its Consequences

The EIAR assesses environmental topics on a chapter-by-chapter basis: air quality, noise and vibration, traffic and transport, human health, major accidents, landscape, and cultural heritage are each addressed in separate chapters with independent conclusions.

This chapter-by-chapter approach is a standard and acceptable starting point for an EIAR. However, it requires a further and essential step: the interactions between these topics must be assessed in an integrated manner, and the combined effect of all topics on the receiving environment must be evaluated as a whole.

That further step has not been taken. Instead:

- impacts are assessed in isolation, with conclusions drawn independently for each topic

- no integrated evaluation of how topics interact or compound one another is provided
- the EIAR proceeds from individual chapter conclusions to an overall conclusion without any analysis of how those conclusions combine

This results in a structural gap in the assessment. The Board is presented with a series of individual topic assessments but no evaluation of the overall environmental burden on the receiving environment. This is precisely the gap that the requirement for cumulative and in-combination assessment is intended to fill.

3.21.4 Inadequacy of the Interactions Matrix

The EIAR includes an interactions matrix at Section 4.1. It is submitted that this matrix does not satisfy the legal requirement to assess cumulative and in-combination effects, for the following reasons:

- the matrix is qualitative in nature and does not provide a meaningful or quantitative evaluation of combined environmental effects
- it identifies the existence of interactions at a high level but does not evaluate the extent to which those interactions may amplify overall impacts or affect sensitive receptors
- no clear methodology is applied to assess how interactions translate into cumulative significance
- no analysis is provided of how impacts accumulate over time, including across the construction and operational phases
- the matrix does not address the specific characteristics of the receiving environment, including karst geology, dispersed rural settlement, and the proximity of residential receptors to multiple concurrent impact sources

The interactions matrix is a presentational device, not an assessment. It does not demonstrate that the EIAR has evaluated how environmental effects combine in practice. Accordingly, it does not provide a sufficient basis for concluding that the proposed development would not give rise to significant adverse cumulative effects.

3.21.5 Sensitivity of the Receiving Environment

The legal requirement to assess cumulative effects is particularly acute in the context of this receiving environment, which is characterised by factors that amplify the significance of combined impacts:

- high groundwater vulnerability associated with karst limestone geology — cumulative effects on recharge, quality, and contamination pathways are directly relevant to private domestic water supply (Chapters 3.7 and 3.11)
- dispersed rural residential settlement at close proximity to the proposed development — residents are exposed to overlapping impacts from noise, air emissions, traffic, lighting, and perceived major accident risk simultaneously (Chapter 3.8)
- a sensitive rural landscape of low capacity that has not previously accommodated industrial development of this scale — cumulative landscape and visual change is permanent and cannot be mitigated (Chapter 3.8)
- agricultural land use that depends on groundwater and soil quality — cumulative effects on land productivity and water access are not assessed

In a receiving environment of this sensitivity, the absence of a cumulative assessment is not merely a procedural irregularity. It means the Board cannot know whether the combined effect of the development on this specific environment would be significant. Under Holohan, that is a fatal deficiency.

3.21.6 Internal Cumulative Effects of the Development

The development itself comprises multiple components, each giving rise to impacts that combine in practice. These include:

- the generating plant — continuous operational noise, air emissions, visual intrusion, and lighting
- fuel storage infrastructure — major accident risk, groundwater contamination risk, and visual impact
- site access and road upgrades — construction and operational traffic, noise, and vibration on the L3103
- underground grid connection works — 8.1 km of cable route with a nine-month construction programme affecting receptors at distances of 10–30 m
- construction traffic and abnormal loads — sustained HGV movements on constrained rural roads

The EIAR does not assess how these components combine. No cumulative traffic assessment considers the aggregate of HGV construction traffic, abnormal loads, and operational maintenance movements over time. No integrated noise assessment considers how cable route construction noise combines with main site construction and operational plant noise over the full project timeline. No integrated risk assessment considers how fuel storage, site operations, and emergency access constraints interact in an incident scenario.

This represents a failure to assess the development as a whole, as required by the Directive.

3.21.7 In-Combination Effects with Other Development

The EIA Directive and the case law of the Court of Justice require that in-combination effects with other plans and projects be assessed. The EIAR does not provide a detailed assessment of in-combination effects with:

- existing infrastructure and permitted developments in the vicinity
- potential future energy or industrial development that may be attracted to the area by the establishment of this facility
- the cumulative industrialisation of the rural landscape arising from the clustering of infrastructure development
- increased pressure on local road infrastructure and services from combined development activity

The failure to assess in-combination effects with existing and potential future development means that the longer-term environmental implications of granting permission for this development have not been evaluated.

3.21.8 Consequence for the Decision-Maker

The legal requirements for cumulative and in-combination assessment serve a specific purpose: they ensure that the decision-maker — in this case An Coimisiún Pleanála — has before it a complete and integrated picture of the environmental effects of a proposed development before deciding whether to grant permission.

Where those requirements have not been met, the Board is not in a position to be satisfied that the likely significant effects of the proposed development have been fully identified, described, and assessed. Permission cannot lawfully be granted on the basis of an incomplete assessment.

As the Supreme Court confirmed in Holohan, the assessment must be complete, precise, and integrated. The EIAR does not meet that standard in respect of cumulative and in-combination effects. The Galway County Development Plan further requires the protection of residential amenity and environmental quality in rural areas. An incomplete cumulative assessment cannot demonstrate compliance with those objectives.

3.21.9 Conclusion

The EIAR fails to provide a comprehensive assessment of cumulative and in-combination effects as required by the Environmental Impact Assessment Directive and established case law. In particular, it does not:

- assess the interaction between environmental factors in an integrated manner
- evaluate the combined effect of multiple project components on the receiving environment
- assess interaction between environmental impacts and major accident scenarios
- evaluate cumulative effects across the construction and operational phases
- assess in-combination effects with existing and potential future development
- apply a clear, transparent, or quantitative methodology to the assessment of cumulative significance

As a result, the full extent of the development's environmental impacts is not understood, the interaction between environmental factors is not properly assessed, and the overall environmental effect of the proposed development cannot be reliably determined.

In the absence of a complete and integrated cumulative assessment, it has not been demonstrated that the likely significant effects of the proposed development have been fully identified, described, and assessed in accordance with the requirements of the Directive. Accordingly, the EIAR is legally deficient, and permission cannot properly be granted on the basis of the assessment as submitted.

3.22 Reasons for Refusal

3.22.1 Introduction

Having regard to the assessment set out in this submission, it is submitted that the proposed development should be refused for the following reasons:

3.22.2 Inadequate Environmental Assessment

The Environmental Impact Assessment Report (EIAR) does not provide a complete, precise or integrated assessment of the likely significant environmental effects of the proposed development.

In particular, cumulative and interaction effects are not adequately assessed, and key environmental risks remain uncertain.

In these circumstances, the proposed development is contrary to the requirements of the Environmental Impact Assessment Directive and fails to provide a sufficient basis for decision-making.

3.22.3 Land Use Incompatibility

The proposed development represents a large-scale industrial energy facility located within a rural residential and agricultural environment.

It has not been demonstrated that the proposed development is compatible with the receiving environment or that it would not adversely affect residential amenity, land use, and the character of the area.

The proposed development is therefore contrary to the proper planning and sustainable development of the area.

3.22.4 Risk to Public Safety and Environment

The proposed development introduces major accident risks, including fire and explosion hazards, with consequence zones extending beyond the site boundary.

It has not been demonstrated that these risks, and their interaction with other environmental factors, have been adequately assessed or that residential receptors and the wider community would be adequately protected.

The proposed development would therefore pose a risk to public safety and environmental protection.

3.22.5 Inadequate Assessment of Infrastructure and Traffic

The proposed development would give rise to increased traffic, including heavy goods vehicles and abnormal loads, on a rural road network not designed for sustained industrial use.

It has not been demonstrated that the receiving road network has the capacity to accommodate these impacts safely or that impacts on road users and local communities would be acceptable.

3.22.6 Failure to Demonstrate Sustainable Development

The proposed development has not been demonstrated to represent sustainable development.

In particular:

- the balance between national benefits and local impacts has not been assessed
- long-term operational sustainability remains uncertain
- the capacity of the receiving environment is limited

In these circumstances, the proposed development is not consistent with the principles of proper planning and sustainable development.

3.22.7 Conflict with Development Plan Policy

The proposed development has not been demonstrated to comply with the Galway County Development Plan 2022–2028, including objectives relating to:

- protection of residential amenity
- environmental protection
- appropriate siting of industrial development
- protection of rural character

The proposed development would therefore be contrary to the Development Plan and the proper planning and sustainable development of the area.

3.22.8 Conclusion

Having regard to the foregoing, it is submitted that the proposed development:

- has not been adequately assessed
- gives rise to significant environmental and planning concerns
- is not appropriate to the receiving environment
- is not consistent with Development Plan policy

Accordingly, permission should be refused.

4. Policy, Climate Law and Legal Compliance

4.1 Overview

This chapter assesses the proposed development in the context of:

- national planning policy
- climate policy and legislation
- energy policy
- European environmental law

It also considers whether the EIAR provides sufficient information to allow lawful assessment of the development.

This section is informed by the independent legal analysis contained in **Appendix B – Legal Opinion on Climate Law Compliance (Fred Logue, Solicitor)**.

It is submitted that the EIAR does not provide a clear or robust demonstration of compliance with the applicable policy and legal framework.

4.2 National Planning and Development Policy

The National Planning Framework (NPF) requires that development:

- is sustainable and appropriately located
- protects environmental quality
- aligns infrastructure with environmental capacity

The proposed development introduces large-scale industrial infrastructure into a rural environment characterised by:

- dispersed residential settlement
- agricultural land use
- environmental sensitivity

The EIAR does not demonstrate how this location is consistent with these principles.

4.3 Climate Action and Low Carbon Development Act 2015

Section 15(1) of the Climate Action and Low Carbon Development Act 2015 requires that both the applicant and the competent authority perform their functions in a manner consistent with:

- Climate Action Plans
- Carbon Budgets
- Sectoral Emissions Ceilings
- the National Climate Objective

The National Climate Objective requires the transition to a climate-neutral economy by 2050.

- However:
- the EIAR does not demonstrate how the proposed development aligns with carbon budgets
- no assessment is provided of compliance with sectoral emissions ceilings
- the development facilitates continued fossil fuel emissions extending toward 2050

In the absence of sufficient and verifiable emissions data, it is not possible to conclude compliance with Section 15(1).

4.4 Carbon Budgets and Sectoral Emissions

Ireland's carbon budget framework requires:

- a 75% reduction in electricity sector emissions by 2030 near-zero emissions in the electricity sector by 2035–2050

However:

- current projections indicate that targets are unlikely to be met
- the electricity sector is already under pressure to remain within budget
- only limited fossil fuel generation is accounted for

The proposed development introduces additional fossil fuel capacity without demonstrating how it can operate within these constraints.

4.5 Compatibility with Climate Trajectory

The EIAR assumes continued operation of the development to 2050.

However:

- national policy requires rapid decarbonisation the electricity sector must transition to near-zero emissions

This creates a clear tension between:

- long-term fossil fuel operation
- legally binding climate objectives

The EIAR does not resolve this issue or demonstrate compatibility.

4.6 Future Energy Demand and Justification

The justification for the proposed development is linked to future electricity demand and the need for flexible generation capacity.

However, the EIAR does not provide a clear or robust assessment of:

- the specific level of future demand that necessitates this development

- how this development fits within national electricity demand projections
- whether alternative technologies or demand-side measures could meet the same need

In particular, there is no clear demonstration that:

- the proposed development is required in addition to existing or consented generation capacity
- the scale and operational lifespan of the development are consistent with projected demand
- the development can operate within the constraints of national climate policy and carbon budgets

While future demand is referenced at a high level, the EIAR does not demonstrate a direct and necessary link between that demand and the specific development proposed.

In the absence of such analysis, it has not been established that the proposed development represents the most appropriate or necessary response to future energy requirements.

This creates uncertainty as to whether the development is justified in planning and policy terms.

4.7 Environmental Impact Assessment Directive

The Environmental Impact Assessment Directive requires that the EIAR include:

- a full and accurate assessment of environmental effects
- a description of reasonable alternatives
- an assessment of climate impacts

The EIAR does not adequately:

- provide transparent greenhouse gas calculations
- assess lifecycle emissions
- clearly identify emissions sources
- provide sufficient detail on fuel use and efficiency

These deficiencies limit the ability to carry out a proper environmental assessment.

4.8 Assessment of Alternatives

The EIA Directive requires a meaningful assessment of reasonable alternatives.

However:

- the EIAR does not provide a robust comparison of alternative technologies
- the selection of open-cycle gas turbine technology is not fully justified

Alternative technologies, including closed-cycle systems, may offer:

- greater efficiency
- lower emissions

The absence of a proper alternatives assessment represents a significant gap in the EIAR.

4.9 EU Taxonomy and Sustainability

The EU Taxonomy Regulation establishes criteria for environmentally sustainable activities.

To meet these criteria, development must:

- contribute to climate mitigation
- avoid significant environmental harm
- meet emissions thresholds

The EIAR does not demonstrate that these criteria are met.

In particular:

- emissions thresholds are not clearly assessed
- lifecycle impacts are not fully evaluated
- sustainability criteria are not addressed

4.10 Absence of Critical Emissions Data

A significant limitation of the EIAR is the absence of key emissions data.

This includes:

- fuel consumption rates
- plant efficiency
- emissions per unit of electricity generated
- independent verification of emissions

Without this information:

- emissions cannot be independently assessed
- compliance with climate policy cannot be verified
- environmental impact cannot be fully understood

This represents a fundamental evidential gap.

4.11 Development Plan and Land Use Policy

The Galway County Development Plan requires that development:

- protects rural character

- supports sustainable communities
- is compatible with surrounding land uses

The introduction of industrial infrastructure into this environment raises issues of:

- land use compatibility
- residential amenity
- environmental capacity

The EIAR does not demonstrate compliance with these objectives in a clear and integrated manner.

4.12 Conclusion

The EIAR does not provide a clear or robust demonstration that the proposed development is consistent with:

- national planning policy
- climate legislation
- the Environmental Impact Assessment Directive
- the Galway County Development Plan

In particular:

- compliance with Section 15 of the Climate Act is not demonstrated
- compatibility with carbon budgets and emissions ceilings is unclear
- critical emissions data is not provided
- the assessment of alternatives is inadequate

In these circumstances, it has not been demonstrated that the proposed development is consistent with the requirements of climate law or the principles of proper planning and sustainable development.

5. Community Engagement and Impact

5.1 Overview of Community Engagement

The developer undertook a programme of non-statutory public consultation in advance of the planning application. This included public information events, leaflet distribution, local advertising, a project website and engagement with elected representatives.

Three public information events were held at the Raheen Woods Hotel, Athenry during 2025, with a total attendance of approximately 184 persons. Leaflets were distributed to approximately 320 addresses within a 2–3-kilometre radius of the proposed development site.

The town of Athenry had a recorded population of 4,603 persons in the 2022 Census. More recent indicators suggest that the population has exceeded 5,000, reflecting ongoing housing delivery, increased commuter demand, improved rail connectivity and local employment growth.

This growth further increases the scale of the receiving population and reinforces that the proportion of households directly engaged represents a relatively small fraction of those potentially affected.

In particular, the distribution of consultation materials to approximately 320 households represent a limited proportion of the potentially affected population, especially when considering the wider rural hinterland within several kilometres of the proposed development site.

Furthermore, the restriction of consultation activities to a 2–3-kilometre radius does not reflect the wider extent of potential impacts associated with a development of this scale, including:

- traffic routes
- grid infrastructure
- landscape and visual impacts
- cumulative environmental effects

While consultation activities were undertaken, attendance at public information events does not equate to meaningful public participation or community acceptance. The consultation process appears to have been primarily informational in nature, relying on summary materials and high-level presentations rather than facilitating a full understanding of the scale, complexity and long-term implications of the proposed development.

The Environmental Impact Assessment Report (EIAR) comprises extensive and highly technical documentation across multiple volumes and appendices. This level of complexity, combined with the statutory review period, creates a significant barrier to meaningful public engagement and limits the ability of members of the public to fully understand and respond to the proposal.

There is no clear evidence within the application documentation that feedback arising from consultation has materially influenced the design, siting or environmental assessment of the development.

5.2 Effectiveness of Public Consultation

The consultation process undertaken by the applicant does not demonstrate meaningful or effective public participation and appears to have been conducted primarily as a procedural exercise rather than a substantive engagement process.

There is no clear evidence that community concerns influenced the design, siting, or assessment of the proposed development, nor that feedback from the consultation process resulted in any material modification of the proposal. In particular, there is no indication that alternative sites or technologies were meaningfully considered in response to community input (refer to Chapter 3 – Alternatives Assessment and Chapter 4 – Policy, Climate Law and Legal Compliance).

The consultation process relied heavily on simplified information presented through public events and summary materials, while the Environmental Impact Assessment Report (EIAR) comprises extensive, highly technical documentation distributed across multiple volumes. This creates a clear disconnect between how the project was presented to the public and its actual scale, complexity, and potential impacts, including long-term, cumulative, and uncertain environmental effects.

In addition, the fragmentation of the project across multiple consenting processes further reduces transparency and accessibility. Members of the public are effectively required to assemble and interpret the full scope of the development from separate applications and documentation streams. This significantly increases the complexity of engagement and limits the ability of the public to form a complete understanding of the proposal.

The format of consultation also appears to have been primarily informational in nature, with limited evidence of meaningful two-way engagement. There is no clear demonstration of how feedback was recorded, assessed, or incorporated into the project design, nor evidence of an iterative consultation process. In these circumstances, the consultation cannot be regarded as a genuine participatory exercise.

The effectiveness of the consultation process is further undermined by the absence of targeted engagement with key stakeholders within the receiving environment. In particular, there is no evidence of meaningful engagement with local schools, sports organisations, or recreational facilities such as **Athenry Golf Club**, despite these being identified as sensitive receptors within the EIAR. These locations represent areas of sustained human activity, including children and other vulnerable groups. In the absence of direct engagement with such receptors, it cannot be concluded that the concerns of those most likely to be affected have been adequately considered.

Taken together, these issues indicate that the public may not have been afforded a full and fair opportunity to participate in the decision-making process.

5.2.1 Access to Information and Procedural Fairness

The effectiveness of public participation is fundamentally dependent on timely, accessible, and transparent access to information.

It was indicated that planning documentation would be made available for public inspection at Athenry Library. Nevertheless, it took about four weeks after the application was submitted for this documentation to be released, and this only happened after members of the local community made follow-up inquiries.

This delay materially reduced the effective period during which members of the public could access and review the application documentation within the statutory timeframe. In practical terms, it limited the ability of members of the public—particularly those reliant on physical access—to engage meaningfully with the proposal.

In the context of a complex EIAR comprising multiple volumes and technical appendices, timely access to documentation is a critical component of effective participation. The delay in this instance therefore represents a material constraint on the ability of the public to fully consider and respond to the application.

Under the **Environmental Impact Assessment Directive**, public participation must be both *early and effective* and must provide a real opportunity for the public to examine environmental information and express views prior to the granting of consent.

Similarly, the **Aarhus Convention** requires that the public is provided with timely and effective access to environmental information, together with a genuine opportunity to participate in environmental decision-making.

Where access to documentation is delayed or restricted, the ability of the public to engage with complex environmental information is materially reduced. This is particularly relevant in the case of large-scale infrastructure proposals supported by extensive technical documentation.

In these circumstances, the delay in making documentation available constitutes a procedural deficiency which undermines the effectiveness of public participation and the overall integrity of the consultation process.

5.2.2 Overall Conclusion on Consultation Effectiveness

Having regard to the issues set out above, it is submitted that the consultation process does not meet the standard of effective public participation required under:

- The Environmental Impact Assessment Directive
- The Aarhus Convention

The process is characterised by:

- Limited and non-inclusive stakeholder engagement
- Lack of transparency and project fragmentation
- A disconnect between public-facing information and technical documentation
- Barriers to understanding arising from complexity
- Delayed access to critical information
- Absence of evidence of meaningful two-way engagement or influence on project design

The scale and consistency of public response demonstrate widespread and reasoned concern within the receiving community. This level of engagement reflects not only the scale of the proposed development, but also the extent to which it is perceived as incompatible with the existing environment and community structure.

It is also important to note that the volume and nature of submissions received may not represent a true or complete reflection of the level of concern within the receiving community. The deficiencies identified in the consultation process—including limited stakeholder engagement, delays in access to documentation, the technical complexity of the EIAR, and the lack of clear and accessible information—are likely to have acted as barriers to participation.

In these circumstances, it is reasonable to conclude that a proportion of affected individuals and groups may not have engaged with the process or may have been unable to make fully informed submissions. Accordingly, the submissions received should not be interpreted as a definitive measure of community response or acceptance of the proposed development.

In these circumstances, it cannot be concluded that the public has been afforded a full, fair, or effective opportunity to participate in the decision-making process. The adequacy of the consultation process is therefore fundamentally in question.

5.3 Nature of the Receiving Community

The proposed development is located within a rural agricultural landscape characterised by:

- dispersed residential settlement
- agricultural land use
- a quiet rural environment

The receiving environment has no established pattern of heavy industrial development and is defined by its rural character, amenity value and strong sense of place.

The introduction of a large-scale industrial energy installation represents a significant and incompatible land-use change.

It would materially alter the character of the area and give rise to impacts on:

- residential amenity
- landscape character
- environmental quality

5.4 Key Community Concerns

The concerns expressed by the local community are consistent, credible and aligned with the technical issues identified throughout this submission.

These concerns relate to:

- residential amenity and proximity to development
- environmental protection, particularly groundwater vulnerability

• potential impacts on human health
• air quality and long-term exposure to emissions
• traffic safety on rural road infrastructure
• the broader industrialisation of a rural landscape

These concerns are supported by quantitative evidence from the community survey, which recorded **1,056 responses as of 23rd April 2026 (Appendix A)**.

The survey results demonstrate a high level of concern across multiple issues. Notably, **80.3%** of respondents selected "**All of the above**," confirming that concerns are cumulative, interrelated, and pervasive across all aspects of the proposed development

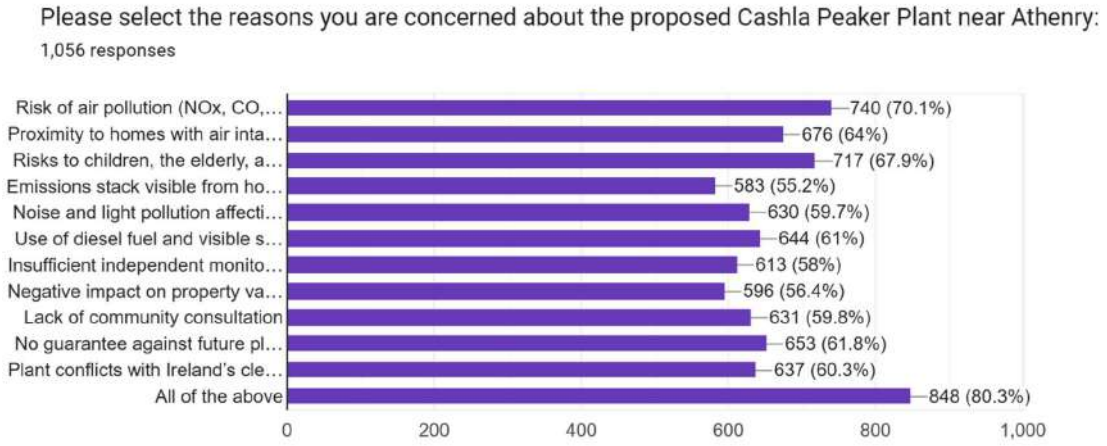
In addition, organised community responses have been submitted through petitions comprising signatories formally objecting to the development (**Appendix J**).

Individual community statements further illustrate the nature and depth of these concerns (**Appendix F**).

Taken together, these sources demonstrate that community concerns are:

• widespread
• consistent
• supported by both qualitative and quantitative evidence

Figure 6.2 – Summary of Community Concerns (1,056 Responses, 23rd April 2026)



5.5 Community Statements (Summary)

Members of the local community have expressed consistent and substantive concerns regarding the proposed development, including its scale, location and potential impacts.

These concerns include:

• long-term environmental impacts, particularly in relation to groundwater and water supply
• the suitability of the site within a rural setting
• potential health implications for residents
• incompatibility with the existing character of the area

A full set of representative statements is provided in **Appendix F – Community Statements and Observations**.

5.6 Cumulative Impact on Quality of Life

The EIAR assesses environmental impacts on an individual topic basis; however, the lived experience of residents is cumulative.

The proposed development will result in simultaneous exposure to multiple environmental stressors, including:

• noise (Chapter 3.9)
• traffic (Chapter 3.14)
• air emissions (Chapter 3.5 & 3.6)
• visual and landscape impacts (Chapter 3.8)

The combined effect of these impacts represents a deterioration in environmental conditions experienced by residents.

This cumulative impact is not fully assessed in the EIAR.

5.7 Conclusion on Community Impact

The consultation process undertaken does not demonstrate effective public participation as required under the Environmental Impact Assessment Directive and the Aarhus Convention.

Community concerns are consistent, evidence-based and aligned with the environmental and planning issues identified throughout this submission.

This is supported by:

• quantitative survey results (**Appendix A – 1,056 responses**)
• individual community statements (**Appendix F**)
• petitions demonstrating the scale of opposition (**Appendix J**)

The EIAR does not adequately assess the cumulative impact of the development on the receiving community or quality of life.

6. Economic Context, Gas Dependence and Assessment of Alternatives

Recent analysis by the Economic and Social Research Institute (ESRI), including *A Descriptive Comparison of Irish and European Electricity Prices 2018–2024* and associated 2026 summary findings, demonstrates that "the international price of gas is an important driver of electricity prices" and that "Irish electricity prices tend to track trends in natural gas prices". The ESRI further finds that "Ireland's exposure to international gas prices helped push residential electricity prices to the highest in Europe" and that the State "has been less able to diversify away from gas-fired generation".

In parallel, Government policy under the Large Energy User Action Plan (LEAP) provides that energy system planning should "model a range of LEU development scenarios" and assess "the required level of gas generation… under a range of economic and sectoral growth scenarios". This approach makes clear that the extent of reliance on gas-fired generation is not a fixed system requirement, but is contingent on modelling assumptions, including the deployment of storage, interconnection and demand-side flexibility.

In this context, the proposed development raises a material concern that it may reinforce an existing structural dependency on gas, which is itself identified by the ESRI as a driver of high and volatile electricity prices, without demonstrating that lower-cost and lower-carbon alternatives have been fully assessed. This is particularly relevant given ongoing concerns regarding electricity affordability and the extent to which domestic consumers bear the cost of system-wide energy decisions. Accordingly, from an economic and system planning perspective, there is a clear question as to whether the justification for the proposed development has been robustly established, or whether it represents a continuation of an existing dependency rather than a transition away from it.

These matters are directly relevant to the requirement under Article 5 of the EIA Directive to provide "a description of the reasonable alternatives studied by the developer" and the main reasons for the option chosen. Where the level of reliance on gas-fired generation is acknowledged to depend on modelling assumptions, it follows that alternative system pathways must be robustly assessed. In the absence of such analysis, there is a question as to whether the Environmental Impact Assessment Report provides a sufficient basis for the competent authority to carry out a lawful assessment of the project's environmental effects, including its consistency with the obligations under Section 15(1) of the Climate Action and Low Carbon Development Act 2015. In particular, if lower-carbon or non-fossil alternatives have not been adequately examined, the conclusion that the proposed development is necessary may not be sufficiently supported by evidence.

7. Conclusion

7.1 Overall Conclusion

This submission has assessed the proposed Cashla Peaker Plant development having regard to:

• the Environmental Impact Assessment Report (EIAR)
• the receiving environment
• national and local planning policy
• climate law and environmental obligations
• community engagement and participation

It is submitted that the EIAR does not provide a complete, robust or legally sufficient assessment of the likely significant effects of the proposed development.

7.2 Key Findings

The assessment undertaken in Chapters 3, 4 and 5 identifies a number of fundamental issues.

(a) Incomplete and Deficient EIAR

The EIAR:

• fails to adequately assess cumulative and in-combination effects
• relies on limited or uncertain baseline data in key areas
• does not fully assess interactions between environmental factors
• omits or inadequately addresses relevant issues, including aviation safety and long-term operational impacts

As a result, it does not meet the requirements of the Environmental Impact Assessment Directive.

(b) Lack of Demonstrated Need and Justification

The EIAR does not demonstrate a clear or necessary link between:

• projected future electricity demand
• and the specific development proposed

In particular:

• no robust assessment of demand has been provided
• the role of the development within national energy strategy is unclear
• alternative technologies and solutions have not been properly assessed

It has therefore not been established that the proposed development represents the most appropriate or necessary response to future energy requirements.

(c) Conflict with Climate Policy and Law

The proposed development facilitates continued fossil fuel use extending towards 2050.

However:

• national policy requires rapid decarbonisation
• the electricity sector must transition to near-zero emissions
• compliance with carbon budgets and sectoral emissions ceilings has not been demonstrated

In the absence of sufficient emissions data and analysis, compliance with the Climate Action and Low Carbon Development Act 2015 cannot be established.

(d) Incompatibility with the Receiving Environment

The proposed development introduces large-scale industrial infrastructure into a rural environment characterised by:

• dispersed residential settlement
• agricultural land use
• high environmental sensitivity

This represents a significant and incompatible land-use change and gives rise to impacts on:

• residential amenity
• landscape character
• environmental quality

(e) Community Impact and Procedural Deficiencies

The consultation process does not meet the standard of effective public participation required under the Environmental Impact Assessment Directive and the Aarhus Convention.

In particular:

• engagement was limited relative to the affected population
• access to information was constrained, including delays in the provision of documentation
• there is no clear evidence that community feedback influenced the development

Community concern is demonstrated through:

• **1,056 survey responses (Appendix A)**
• **individual statements (Appendix F)**
• **petitions comprising signatories formally objecting (Appendix J)**

These sources demonstrate a consistent and widespread level of concern within the receiving community.

(f) Internal Inconsistencies and Uncertainty

There are material inconsistencies within the EIAR, including:

• acknowledgement of environmental sensitivity alongside conclusions of no significant impact
• reliance on mitigation to resolve fundamental conflicts
• uncertainty arising from limited or constrained survey conditions

These issues undermine confidence in the reliability of the assessment.

7.3 Overall Planning Assessment

Having regard to:

• the deficiencies identified in the EIAR
• the absence of a clear and robust justification for the development
• the conflict with climate policy and legal obligations
• the incompatibility with the receiving rural environment
• the scale and consistency of community concern

it has not been demonstrated that the proposed development would not give rise to significant adverse environmental effects.

Nor has it been demonstrated that the proposed development is consistent with the requirements of proper planning and sustainable development.
The failure to assess identified receptors, including outdoor recreational receptors such as Athenry Golf Club, further demonstrates that the EIAR is incomplete and does not provide a reliable basis for assessment.

In these circumstances and having regard to the deficiencies and uncertainties identified throughout this submission, it is not possible for An Coimisiún Pleanála to reach a reasoned conclusion that the proposed development would not give rise to significant adverse effects. Accordingly, permission must be refused.

For the community living in Athenry, this proposed development represents a fundamental and permanent change to their environment, with potential consequences for health, well-being and quality of life over decades. In circumstances where such impacts have not been fully or reliably assessed, a precautionary approach is required.

7.4 Conclusion

In the absence of:

• a complete and robust environmental assessment
• sufficient information to assess climate and emissions impacts
• a clear demonstration of need and justification
• effective public participation

the competent authority cannot be satisfied that the proposed development complies with:

• the Environmental Impact Assessment Directive
• the Climate Action and Low Carbon Development Act 2015
• the Galway County Development Plan
• the principles of proper planning and sustainable development

Accordingly, it is submitted that the proposed development should not be permitted.

8. Appendices

Appendix A – Community Survey Results

A.1 Introduction

This appendix presents the results of a community survey undertaken in relation to the proposed Cashla Peaker Plant development.

The purpose of the survey was to gather structured feedback from members of the local community regarding their concerns and views on the proposed development.

The results provide quantitative evidence of community sentiment and should be read in conjunction with:

• Appendix F – Community Statements and Observations
• Appendix J – Petitions and Collective Submissions

A.2 Survey Methodology

The survey was conducted within the local community and surrounding area through community engagement and outreach.

Responses were collected through a combination of local distribution and online participation.

A total of **1,056 responses** were recorded as of **23rd April 2026**.

The survey was designed to:

• identify key areas of concern
• capture recurring issues
• provide a structured overview of community sentiment

A.3 Summary of Findings

The survey results demonstrate a high level of concern across a broad range of issues associated with the proposed development.

Based on 1,056 responses, a significant majority (80.3%) selected “all of the above,” indicating that concerns are cumulative and overlapping rather than limited to a single issue. The most prominent concerns relate to human health and safety, including air pollution (70.1%) and risks to vulnerable groups such as children and older persons (67.9%). A substantial proportion of respondents also identified concerns regarding proximity to residential areas (64%), potential future expansion (61.8%), and the use of diesel fuel (61%). Additional issues, including conflict with climate objectives, lack of meaningful community consultation, noise and light pollution,

and the absence of independent monitoring, were each cited by approximately 58–60% of respondents.

Overall, the results demonstrate strong and multi-dimensional public concern, primarily driven by health, environmental, and governance-related issues.

A.4 Interpretation of Results

The survey results indicate:

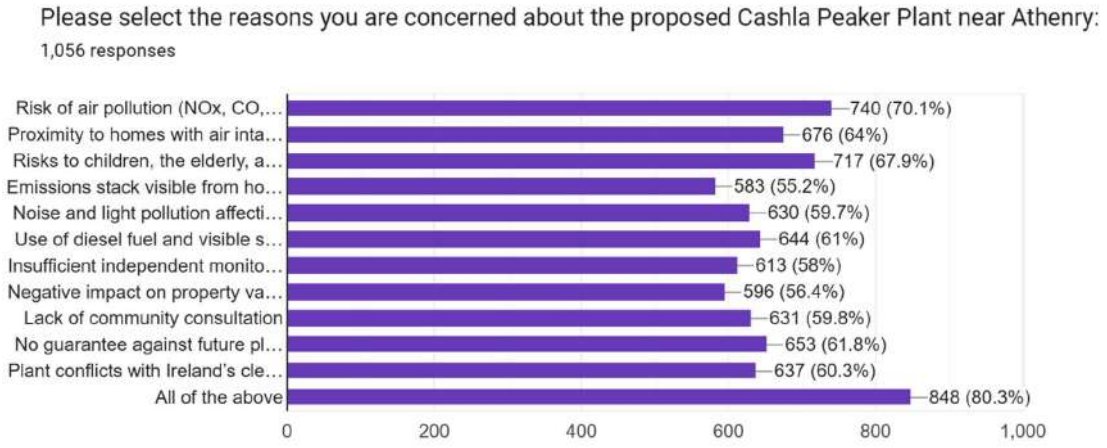
• a high level of awareness of the proposed development
• strong consistency in the nature of concerns raised
• alignment between community concerns and the environmental and planning issues identified throughout this submission

The scale and consistency of responses demonstrate that concerns are widespread and not confined to a small number of individuals.

A.5 Survey Data Presentation

Figure 6.2 – Summary of Community Concerns (1,056 Responses, 23rd April 2026)

This figure provides a visual representation of the distribution of concerns expressed by respondents.



A.6 Limitations

The survey represents a voluntary response dataset and is not intended to constitute a statistically controlled sample.

However, the large number of responses and consistency of findings provide a reliable indication of community sentiment.

A.7 Conclusion

The survey results demonstrate a clear, consistent and widespread pattern of concern within the local community in relation to the proposed development.

These findings provide strong quantitative support for the environmental, planning and community issues identified throughout this submission.

Appendix B – **Legal Opinion on Climate Law Compliance**

Prepared by Fred Logue, Solicitor

B.1 Introduction

This appendix contains **an independent legal opinion prepared by**

Fred Logue, Solicitors, addressing the compliance of the proposed development with national and European climate law, including the Climate Action and Low Carbon Development Act 2015 and the Environmental Impact Assessment Directive.

The opinion has been commissioned by the Athenry Peaker Plant Concern Group to inform this submission and is relied upon in particular in Chapter 4 (Policy, Climate Law and Legal Compliance).

The document is attached here in full and should be read in conjunction with the main submission.

FPLOGUE SOLICITORS

Our Reference: FPL/1045/03340
Your Reference:

22 April 2026

Re:	PA07.324113
Applicant:	Bord Gais Energy
Proposed Development:	Construction of an open-cycle gas turbine power plant, primarily fueled by Natural Gas, Above Ground Installation and ancillary development
Development address:	Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway

A Chara

Introduction

1. I have set out in this letter a legal note in relation climate change and the EIAR.

2. In my view:

    a. The EIAR does not comply with Article 5 of the EIA Directive in relation to:

        i. Providing an accurate calculation of Greenhouse Gas Emissions
        ii. Providing information to determine whether the Commission can grant permission in compliance with its obligations under Section 15(1) of the Climate Action and Low Carbon Development Act 2015 (the **2015 Act**)
        iii. Providing sufficient details to assess proposed reasonable alternatives against those same obligations

    b. The proposed development is inconsistent with the matters set out in Section 15 of the 2015 Act or alternatively there is insufficient information to demonstrate consistency

    c. The proposed development cannot be considered sustainable development or environmentally sustainable in relation to climate change and therefore must be refused or alternatively it is a category of development for which the Paris Agreement and more detailed EU law does not encourage investment because it doesn't meet specific criteria in relation to climate change mitigation.

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3. While it is my view that permission ought to be refused, recent case law has held that even where planning permission is refused an EIA must nonetheless be carried out by the competent authority which means that the deficiencies in the EIAR must be addressed by the Commission regardless of the decision[1].

Background

4. The Proposed Project includes a gas fired power plant (named Cashla Peaker Plant), as well as the construction of an ESB substation compound within the Peaker Plant site, and associated infrastructure, the construction of approximately 8.1 kilometres (km) of an underground grid connection route and laying of cable from the proposed ESB Substation (in the Cashla Peaker Plant Site) to the Cashla 220 kV Substation, along the L7109, L71093, L7108 and 3103 roads.

5. The proposed Cashla Peaker Plant (herein referred to as the Peaker Plant) is in a greenfield site located in Pollnagroagh, Athenry, ca. 18 km east of Galway City and ca. 2 km west of Athenry. The proposed Peaker Plant site is positioned between the northern and eastern arms of the M6/M18 interchange

6. The EIAR Non-technical summary states:

> *The proposed Peaker Plant plays a critical role in this context. Rather than competing with renewable energy, it functions as an enabler of the net zero transition, providing fast-response capacity that facilitates renewable generation to be safely connected to the grid. By bridging periods of low renewable output, the facility ensures grid stability and prevents supply shortfalls, supporting the integration of renewable generation, and storage technologies.*
>
> *Within national policy documents, the need for flexible gas generation is recognised as a key part of the energy transition to net zero and for the purposes of energy security. The most recent Climate Action Plan (CAP 25) includes the delivery of at least 2 Gigawatts (GW) of New Flexible Gas Plant by 2030 as a national target alongside other renewable energy generation targets, recognising the role that flexible gas plants have to play in supporting a flexible and resilient electricity system. The Proposed Peaker Plant will help bridge this gap. The flexible nature of the plant means it can be turned on and off to react to fluctuations in renewable generation, by ramping up quickly to meet peak demand. The Cashla Peaker Plant is selected as open cycle as this configuration provides a much quicker response time to start up and begin generation. This fast response time is required to meet the rapid changes in the transmission grid electrical supply and demand imbalance. In terms of efficiency the combined cycle gas turbine is better and therefore once operating at maximum load will produce less emissions per megawatt (MW).*

Climate Action and Low Carbon Development Act 2015

7. Section 15(1) of the 2015 Act requires both Bord Gas Energy and An Coimisiún Pleanála (the "Commission") as relevant bodies to, in so far as practicable, perform their functions in a manner consistent with—

> (a) the most recent approved climate action plan,
> (b) the most recent approved national long term climate action strategy,
> (c) the most recent approved national adaptation framework and approved sectoral adaptation plans,
> (d) the furtherance of the national climate objective, and

[1] *Ventway v An Bord Pleanála* [2025] IEHC 406

(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

8. These obligations are part of an interrelated suite of measures all aimed at furthering the National Climate Objective ("NCO") defined in Section 3(1) of the 2015 Act as requiring that "*the State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.*"

9. For the purposes of enabling the State to pursue and achieve the NCO the Minister is required to submit to the Government for Approval:

   (a) carbon budgets in accordance with sections 6B and 6D,

   (b) a sectoral emissions ceiling in accordance with section 6C,

   (c) a climate action plan in accordance with section 4,

   (d) a national long term climate action strategy in accordance with section 4, and

   (e) a national adaptation framework in accordance with section 5.

10. With Section 6A(1) Carbon Budgets must be consistent with furthering the achievement of the NCO and are prepared by the Climate Change Advisory Council (the **CCAC**), finalised by the Minister and Approved by the Government for successive five-year periods starting on 1 January 2021. At any one time there must be a carbon budget programme covering three successive five-year periods, with the budget for the third such period made in draft form (referred to as a "provisional carbon budget").

11. In preparing carbon budgets the CCAC shall

   (a) carry out its functions under [Section 6A] in a manner—

      (i) that is consistent with the ultimate objective specified in Article 2 of the United Nations Framework Convention on Climate Change done at New York on 9 May 1992 and the matters specified in subparagraphs (i) and (ii) of section 3(3)(a), and

      (ii) which takes account of—

         (I) the most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency,

         (II) relevant scientific advice, including with regard to the distinct characteristics of biogenic methane,

         (III) international best practice on the reporting of greenhouse gas emissions and removal, and

         (IV) in so far as practicable, the need to maximise employment, the attractiveness of the State for investment and the long term competitiveness of the economy,

   (b) have regard to climate justice when carrying out its functions under this section, and

(c) *the Advisory Council shall comply with regulations under subsection (5A) when carrying out its functions under this section.*

12. With Section 3(3) the Minister and the Government shall carry out their respective functions under sections 4, 5, 6, 6A, 6B, 6C and 6D in a manner—

    (a) that is consistent with the ultimate objective specified in Article 2 of the United Nations Framework Convention on Climate Change done at New York on 9 May 1992, and:

        (i) any mitigation or adaptation commitments entered into by the European Union in response or otherwise in relation to that objective;

        (ii) the steps specified in Articles 2 and 4(1) of the Agreement done at Paris on 12 December 2015 to achieve that objective, and

    (b) *which takes account of the most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency.*

13. Article 2 of the United Nations Framework Convention on Climate Change ("UNFCCC") provides:

    The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

14. Article 2 of the Paris Agreement provides:

    1. *This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:*

        a. *Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;*
        b. *Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and*
        c. *Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.*

    2. *This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.*

15. Article 4(1) of the Paris Agreement Provides

    In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will

take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

16. Both Ireland and the EU are parties to the UNFCCC and the Paris Agreement.

17. With Section 6C, Sectoral Emissions Ceilings must be prepared within the limits of the carbon budget, setting the maximum amount of greenhouse gas emissions that are permitted in different sectors of the economy during a budget period.

18. The annual Climate Action Plans prepared under Section 4(1)(a) must be consistent with the carbon budget programme and set out a roadmap of actions to include:

    (i) sector specific actions that are required to comply with the carbon budget and sectoral emissions ceiling for the period to which the plan relates,

    (ii) sector specific actions that are required to address any failure, or projected failure, to comply with the carbon budget and sectoral emissions ceiling for the period to which the plan relates, and

    (iii) other actions and measures that are reasonably necessary to support Government policy on climate change, including measures to inform, and promote dialogue with, the public regarding the challenges and opportunities in the transition to a climate neutral economy,

19. The National Long Term Climate Action Strategy (**NLTCAS**) prepared under Section 4(1)(b) shall specify the manner in which it is proposed to achieve the national climate objective and shall include:

    a. projected reductions in greenhouse gas emissions and the enhancement of sinks, for a minimum period of 30 years,

    b. projected reductions in greenhouse gas emissions in each of the relevant sectors determined by the Government under section 6C and the enhancement of removals in such sectors, for a minimum period of 30 years, and

    c. an assessment of potential opportunities for achieving reductions in greenhouse gas emissions in the sectors referred to in paragraph (b).

Climate Action Plans and other measures

20. As of now the Government is in default of its obligation to prepare a CAP for 2026 and to have in place carbon budgets for three successive five year periods, at this stage up to 2040.

21. Chapter 12 of the Climate Action Plan 2024 (**CAP24**) and Chapter 11 of the Climate Action Plan 2025 (**CAP25**) concern the electricity sector. CAP24 and CAP25 are to be read together and identify the sectoral emissions ceilings:

    - Carbon Budget 1 (2021-2025) :40 MtCO2eq.
    - Carbon Budget 2 (2026-2030): 20 MtCO2eq.
    - Emissions Abatement (on 2018): -75% (3 MtCO2eq. per annum by 2030)

31. EPA's latest projections show that even in the WAM scenario Ireland will only achieve 21.7% reduction in emissions compared to 2005 levels against a target of 42% in areas covered by the Effort Sharing Regulation.

32. In relation to the NCO the EPA projections show that Ireland is not on target to meet the interim target of 51% reduction of GHG emissions between 2018 and 2030 with a very significant gap of 20 MtCO2e in the WAM scenario and an even worse 30 MtCO2e in the WEM scenario. No projections are offered in relation to the NCO and 2050.

33. In relation to carbon budgets the EPA projections indicate that for the Budget 2 period carryover of between 8 and 12 MtCO2e will be needed reducing the Carbon Budget during that period to between 188 and 192 MtCO2e in period 2 and between 37 and 75 MtCO2e in period 3 (provisional).

34. In relation to the SEC for Electricity emissions in 2030 are projected to be 3.1 MtCO2e, slightly above the 3 MtCO2e target representing a 70% change compared to 2018 against a target of 75%. An exceedance of 1.6 MtCO2e in the WAM scenario is projected in the 2026 to 2030 period. Only 1.4GW of net gas-fired generation capacity is projected to be added by 2030.

National Long Term Climate Action Strategy

35. Under the NLTCAS the pathway emissions for electricity are as follows in (MtCO2e/yr)

2018	10
2030	3
2035	2 to 0
2050	0 to -5

(Figure 4.1)

EIA Directive

36. The Developer has submitted an EIAR for the project with the planning application. It is not disputed that the project and the proposed development come within the scope of that directive.

37. Article 5(1) of the EIA Directive requires the developer to prepare and submit an EIAR which shall include at least:

    (a) a description of the project comprising information on the site, design, size and other relevant features of the project;
    (b) a description of the likely significant effects of the project on the environment;
    (c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
    (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
    (e) a non-technical summary of the information referred to in points (a) to (d); and
    (f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

38. The Developer and the Competent Authority have shared responsibility for the completeness and quality of the environmental impact assessment report. In the first instance it is for the Developer to ensure the EIAR is prepared by competent experts. In the second it is for the Commission to ensure that it has or has access to sufficient expertise to examine the EIAR and where necessary to seek

supplementary information in accordance with Annex IV which is directly relevant to reaching the reasoned conclusion on the significant effects on the environment.

39. Any authorities holding relevant information, with particular reference to Article 3, must make this information available to the developer.

40. Annex IV(4) specifically mentions climate (for example greenhouse gas emissions, impacts relevant to adaption) as one of the factors specified in Article 3(1) likely to be significantly affected by the project. Annex IV(5)(f) lists the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change as one of the likely significant effects to be described in the EIAR.

41. Since climate change is a very important environmental concern, it is submitted that the documents made available to the public concerned must contain the data that are necessary in order to assess the effects of the project on climate change and in particular to assess whether a grant of permission would be consistent with the Commission's obligations under Section 15(1) of the 2015 Act since this a substantive requirement of environmental law and effects on the environment which infringe environmental law would be significant in any case.

42. In relation to the assessment of alternatives, at least in the case of climate change, the information presented must allow for direct comparison between different alternatives against the section 15 measures, as well as carbon budgets and SECs and therefore require calculations of the quantum of emissions and their evolution over time for all alternatives condiered. This requirement stems from the fact that carbon budgets are limited to an absolute amount of GHG emissions and the Paris Agreement requires emissions globally to reach a peak as soon as possible, recognising that it will take longer in developing countries and to undertake rapid reductions. Parties must also undertake rapid reductions thereafter in accordance with best available science. All else being equal the alternative with the lowest cumulative emissions is the one that should be chosen having regard to section 15(1) interpreted in so far as possible consistently with the Paris Agreement, unless it would be impracticable. This is also important here because in Ireland the electricity sector is envisaged to be at net zero, and even having net removal, as early as 2035.

43. Similarly the information needed to ascertain whether the proposed development is one supported by climate-related investment policies under Article 2(1)(c) of the Paris Agreement and the Taxonomy Regulation is not present. This is important particularly where the Developer is a Public Authority it has direct obligations in relation to the investment of public money stemming from the Paris Agreement and the Taxonomy Regulation as well as the 2015 Act.

44. It is submitted that the EIAR does not contain sufficient information so that the Commission can be satisfied that in granting permission it exercises its functions consistently with the matters set out in section 15(1).

45. The largest contribution to GHG emissions is stated to come from the operational energy which includes the electricity demand by site buildings, natural gas use by (100hrs per year) by turbine and backup generator (72hrs per year) and low sulphur diesel use by testing of backup generator. The EIAR estimates that predicted GHG emissions will be in the range 19,320 to 19,800 ktCO2e/ye depending on the type of open cycle gas turbine used. It appears that this level of emissions is envisaged to remain constant up to 2050.

46. The problem with the EIAR is that it is impossible to separate out the different components of this total and in turn to verify that the calculation is correct. There is no statement of the quantity of gas or other fossil fuels or the thermal energy of the proposed fossil fuel usage as a function of time. Similarly

there is no information on the total energy output per year or the average rate of carbon emissions per unit of electrical energy produced. There is no information on turbine efficiency or the emissions profile during ramp up and ramp down cycles. This makes it impossible to benchmark the performance of the proposed power plant against the best available science, which is a requirement of the Paris Agreement, or against the EU standards as set out below.

47. In relation to alternatives the use of more efficient closed cycle technology is dismissed on the basis that open cycle technology can ramp up more quickly. However there is no information presented to show that closed-cycle technology would result in overall lower GHG emissions bearing in mind that closed cycle might be double the efficiency of open cycle. In fact the Commission granted permission to the Shannon LNG flexible generation plant, a closed-cycle technology, on the basis that it would result in lower emissions. This finding was upheld by the High Court in a judgment on 1 April 2026. Therefore as a matter of fact as settled by the High Court, closed-cycle has lower emissions than open cycle for flexible generation. This finding is binding on the Commission.

48. Section 8.5.1.5 indicates that significance should be measured in terms of the level of mitigation taking place and the extent to which the project aligns with the trajectory to net zero by GHG. This trajectory is set out in the NLTCAS and is one of the measures which the Commission must act consistently with. The EIAR acknowledges this strategy but does not appear to engage with it at all

49. The issue here is that the EIAR envisages uniform GHG emissions from start of operation out to 2050 whereas the trajectory to net-zero envisages 0 or negative emissions from electricity from 2035 onwards. Based on the information presented in the EIAR, the project is not compatible with the NLTCAS.

Compliance with the standard of environmental sustainability in the Taxonomy Regulation

50. Sustainability underpins climate action. Article 2 of the UNFCCC states as its ultimate objective to prevent dangerous anthropogenic interference with the climate system to enable economic development to proceed in a sustainable manner.

51. The Paris Agreement, through Article 2, enhances the implementation of the UNFCCC by strengthening the global response to climate change in the context of sustainable development.

52. The NCO itself is framed in the same way aimed at achieving an environmentally sustainable and climate neutral economy.

53. Given that the measures established under the 2015 Act are derived from international treaties to which Ireland and the EU are parties and the EU has exercised its competencies in relation to the subject matter, the interpretation of the 2015 Act is a matter of EU law and the Commission is therefore required to interpret national law to the fullest extent possible in accordance with the objectives of the UNFCCC and the Paris Agreement.

54. In relation to environmentally sustainable activities the EU has developed a series of criteria for assessing whether generation of fossil gas is environmentally sustainable for the purposes of investment as part of its implementation of Article 2(1)(c) of the Paris Agreement.

55. It is submitted that the concept of "sustainable development" and "environmentally sustainable development" under the Planning and Development Act, the 2015 Act and the NCO must be interpreted consistently in light of the UNFCCC and the Paris Agreement and that the same criteria must be applied as developed through the Taxonomy Regulation.

56. Alternatively it is submitted that it is not consistent with the concept of sustainable development or environmental sustainability to grant permission for a fossil gas generation plant aimed at reinforcing renewable deployment which is less likely to attract finance because it does not satisfy the Taxonomy criteria, and therefore less likely to be developed.

57. Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (OJ L 198/13 22.6.2020, p. 13-43) (the "Taxonomy Regulation") establishes criteria for determining whether certain economic activities qualify as environmentally sustainable for the purposes of establishing the degree to which an investment is environmentally sustainable. The Taxonomy Regulation further defines criteria which are considered to significantly harm certain environmental objectives, including climate change mitigation.

58. Recital 3 of the Taxonomy Regulation records that

> *The Paris Agreement adopted under the United Nations Framework Convention on Climate Change (the 'Paris Agreement') was approved by the Union on 5 October 2016. Article 2(1)(c) of the Paris Agreement aims to strengthen the response to climate change by making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development, among other means. In that context, on 12 December 2019, the European Council adopted conclusions on climate change. In light thereof, this Regulation represents a key step towards the objective of achieving a climate-neutral Union by 2050.*

59. Recital 24 records:

> *An economic activity that pursues the environmental objective of climate change mitigation should contribute substantially to the stabilisation of greenhouse gas emissions by avoiding or reducing them or by enhancing greenhouse gas removals. The economic activity should be consistent with the long-term temperature goal of the Paris Agreement. That environmental objective should be interpreted in accordance with relevant Union law, including Directive 2009/31/EC of the European Parliament and of the Council*

60. Article 2(5) defines "climate change mitigation" to mean the process of holding the increase in the global average temperature to well below 2 °C and pursuing efforts to limit it to 1,5 °C above pre-industrial levels, as laid down in the Paris Agreement.

61. Article 3 of the Taxonomy Regulation sets out four cumulative criteria which must be satisfied for an economic activity to qualify as environmentally sustainable:

> *For the purposes of establishing the degree to which an investment is environmentally sustainable, an economic activity shall qualify as environmentally sustainable where that economic activity:*
>
> *a) contributes substantially to one or more of the environmental objectives set out in Article 9 in accordance with Articles 10 to 16;*
>
> *b) does not significantly harm any of the environmental objectives set out in Article 9 in accordance with Article 17;*
>
> *c) is carried out in compliance with the minimum safeguards laid down in Article 18; and*
>
> d) *complies with technical screening criteria that have been established by the Commission in accordance with Article 10(3), 11(3), 12(2), 13(2), 14(2) or 15(2).*

62. Article 10(1) of the Taxonomy Regulation defines what is meant by a "substantial contribution to climate change mitigation":

> *"An economic activity shall qualify as contributing substantially to climate change mitigation where that activity contributes substantially to the stabilisation of greenhouse gas concentrations in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system consistent with the long-term temperature goal of the Paris Agreement through the avoidance or reduction of greenhouse gas emissions or the increase of greenhouse gas removals, including through process innovations or product innovations, by:*
>
> *...*
>
> *(g) establishing energy infrastructure required for enabling the decarbonisation of energy systems"*

63. Article 10(2) recognises that in some instances carbon-emitting activities must be deployed to support the transition to a climate-neutral economy:

> *2. For the purposes of paragraph 1, an economic activity for which there is no technologically and economically feasible low-carbon alternative shall qualify as contributing substantially to climate change mitigation where it supports the transition to a climate-neutral economy consistent with a pathway to limit the temperature increase to 1,5 0C above pre-industrial levels, including by phasing out greenhouse gas emissions, in particular emissions from solid fossil fuels, and where that activity:*
>
> *(a) has greenhouse gas emission levels that correspond to the best performance in the sector or industry;*
>
> *(b) does not hamper the development and deployment of low-carbon alternatives; and*
>
> (c) *does not lead to a lock-in of carbon-intensive assets, considering the economic lifetime of those assets.*

64. Article 10(3) empowers the European Commission to adopt a delegated act in accordance with Article 23 to supplement paragraphs 1 and 2 of Article 10 and Article 17 by establishing technical screening criteria for determining the conditions under which a specific economic activity qualifies as contributing substantially to climate change mitigation and by establishing, for each relevant environmental objective, technical screening criteria for determining whether an economic activity in respect of which technical screening criteria have been established causes significant harm to one or more of those objectives.

65. Using this power, the European Commission has adopted Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (OJ L 442, 9.12.2021 p.1-349) (as amended by Commission Delegated Regulation 2022/1214) (the "Delegated Regulation").

66. Paragraph 4.29 of Annex 1 of the Delegated Regulation sets technical screening criteria in relation to climate change mitigation for electricity generation from fossil gaseous fuels and Paragraph 4.29 of Annex II of the Delegated Regulation sets technical screening criteria in relation to climate change

adaption as well as "Do No Significant Harm" to climate change mitigation for electricity generation from fossil gaseous fuels (the "Technical Screening Criteria").

67. Copies of these paragraphs are included in the annex to this letter.

68. Sub-paragraph 1(a) of 4.29 of Annex I supports greenfield power generation using fossil gas where the life-cycle GHG emissions from generation are lower than 100 gCO2e/kWh. This requires the use of lower carbon gases and/or abatement. Sub-paragraph 1(b) envisages, for a limited period of time, permits for fossil gas power generation with direct emissions lower than 270 gCO2e/kWh or annual direct emissions that do not exceed an average of 550kgCo2e/kW over 20 years for plants which replace an existing high emitting electricity generating activity using solid or liquid fossil fuel (for example coal or oil).

69. The Table at the end of Paragraph 4.29 of Annex II defines "Do no significant harm" to climate mitigation for fossil gas electricity generation as "the direct GHG emissions of the activity are lower than 270 gCO2e/kWh".

70. The 2015 Act identifies in section 6A(9)(a)(ii)(IV) and section 4(8)(g) the need to maximise the attractiveness of the State for investment and the long term competitiveness of the economy, and these are factors that have been taken into account by the CCAC, the Minister and the Government in developing carbon budgets, CAPs and the NLTCAS.

71. CAP24 identifies the Taxonomy Regulation as follows (p. 149):

> *"[T]he EU has developed a science-based taxonomy as the gold standard for sustainable activities. This aims to scale up sustainable investment, both to underpin the ambitions of the European Green Deal and to support the achievement of Member States' own climate action objectives. It provides a consistent, science-based, classification framework to companies, investors, and policymakers, through which economic activities can be considered environmentally sustainable, and sets out the requirements that must be met by each activity for it to be sustainable."*

Discussion

72. There are major lacunae in the baseline due to the Government's failure to adopt CAP 2024, finalise the budget for the third period 2030 to 2035 and to adopt a provisional budget for the period 2035 to 2040. It is very difficult to see how a lawful EIA carried out in that context and indeed how the Commission can act consistently with Section 15(1) when key elements have not been put in place particularly for the period after 2030.

73. In that context it is submitted that the decision-making process be suspended until the Government comes back into compliance with its obligations under the 2015 Act and adopts a new CAP and finalises carbon budgets out to 2040

74. Moving on from that, the Commission has a positive obligation to require supplementary information from the Developer so that a full assessment of significant effects on climate can be carried out including in relation to Section15(1) of the 2015 Act as described in more detail. Critical data and information is missing from the EIAR which makes it impossible to carry out an assessment and indeed for the public concerned to get an accurate impression of climate change impacts.

75. As things stand the proposed development seems clearly to be at odds with the trajectory of the electricity sector towards the NCO which envisages in one scenario zero emissions by 2035 and negative emissions thereafter. While the EIAR at section 8.11 includes some commentary on lower

carbon gases this is presented "for information" indicating that it is not certain enough to be included in the assessment (see, e.g. *Kilkenny Cheese*).

76. There is no information in the EIAR to assess whether the proposed development satisfies the criteria in paragraph 1(a) of the Technical Screening Criteria since it has not been demonstrated that life-cycle GHG emissions from the generation of electricity using fossil gaseous fuels are lower than 100 gCO2e/kWh. The EIA Screening indicates that the emissions associated with natural gas are assumed to be 204 g CO2e/kWh net calorific value but taking into account that open cycle gas turbines operate at around 35% efficiency the direct emissions are likely to be in the region of 580 gCO2e/kW.

77. Furthermore, there is no information on the file to demonstrate that the quantified life-cycle GHG emissions are verified by an independent third party. In fact, there is no life-cycle calculation at all.

78. The proposed development also does not come within the cumulative criteria in paragraph 1(b) of the Technical Screening Criteria since this only applies in the case where a project replaces an existing high emitting electricity generation activity that uses solid or liquid fossil fuels and that has been verified by an independent third party. There is no evidence that the proposed development is a replacement for solid or liquid fossil fuel power station – it is not being promoted by the Developer in order to achieve or replace fossil fuel power stations powered by solid or liquid fossil fuels and any such claim is mere speculation.

79. In addition, there is no information to show how the proposed development satisfies the DNSH requirement. In fact, it appears that the proposed development will emit direct emissions of significantly more than 270 gCO2e/kWh and therefore will significantly harm climate change mitigation.

80. The proposed development, despite the claim that it is energy infrastructure required for enabling the decarbonisation of energy systems, does not satisfy either of the criteria set out in paragraph 1 of the Technical Screening Criteria or the DNSH limitation and therefore it does not substantially contribute to climate change mitigation and therefore it is not environmentally sustainable and/or is not a transitional activity as a matter of EU law.

81. The Commission therefore cannot conclude that the proposed development would be in accordance with the proper planning and sustainable development of the area in circumstances where the proposed development is an unsustainable development for the purposes of EU law and will cause significant harm to climate, similar the Commission cannot conclude that the proposed development is consistent with CAP24 given that CAP24 incorporates the taxonomy regulation criteria.

82. Furthermore granting permission would be incompatible with the objective of maximising the attractiveness of the State for investment under the 2015 Act and of the Paris Agreement obligation to make finance flows consistent with the pathway towards low greenhouse gas emissions and climate resilient development. This obligation is particularly acute in the situation where there only a limited scope of new gas generation and where the Developer in this instance is a public authority with direct legal obligations stemming from EU law and from the UNFCCC and the Paris Agreement.

83. The Commission must refuse permission to ensure that it complies with its obligations under section 15(1) of the Climate Action and Low Carbon Development Act 2015 and CAP24 and CAP25.

84. The Commission could only achieve such consistency by granting permission for the proposed development which includes fossil gas electricity generation if it was satisfied the Technical Screening Criteria under the Taxonomy Regulation and the Delegated Regulation were complied with, notwithstanding the claim that the proposed development is energy infrastructure required for

enabling the decarbonisation of energy systems, namely through the provision of flexible gas capacity as envisaged in the Climate Action Plans.

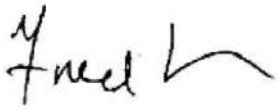
85. The Commission is also obliged to refuse permission under Section 15(1)(e) for a proposed development which will not do no significant harm to climate change mitigation.

Conclusion

86. In light of the above it is my considered opinion that an EIAR is required for this project, that it is not consistent with Section 15 of the Climate Action and Low Carbon Development Act 2015, it is not an environmentally sustainable activity and as a matter of law will do significant harm to climate change mitigation and therefore should be refused.

87. In the alternative the Commission could consider granting planning permission for a limited amount of time so that a new permit and a new assessment could be carried out taking into account evolving climate policies, but as things stand.

Yours sincerely



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Annex 1 – Table of Gas Fired Power provided by Gas Networks Ireland

Contracted Power Gen	Developer	Location	Installed Capacity (MWe)	T-4 Auction Awarded Capacity Derated(MWe)	Related Capacity Auction (Year)	Capcity Auction Final Results
BNM Edenderry	BNM	Edenderry, Offaly	116	105	25/26'	T-4-2025-26-Final-Capacity-Auction-Results-Report.pdf
LCC Power / Kilshane Energy	LCC Power	Kilshane, Dublin	275	253	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
ESB Poolbeg	ESB	Poolbeg, Dublin	299	255	26/27'	FCAR2627T-4-report.pdf
BGE Cashla	BGE	Athenry, Galway	340	282	28/29'	20282029-T-4-Final-Capacity-Auction-Results-Report-FCAR2829T-4.pdf
Lumcloon Castlelost	VPI	Castlelost, Westmeath	275	247	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Greener Ideas Athlone	BGE	Athlone Westmeath	100	90	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Greener Ideas Profile	BGE	Grangecastle, Dublin	100	90	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Grange Backup Power	SDCL	Grangecastle, Dublin	115	104	23/24'	T-4-2023-2024-Final-Capacity-Auction-Results-Report.pdf
ESB Ringsend Flex Gen	ESB	Ringsend, Dublin	65	57	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
ESB Poolbeg Flex gen	ESB	Poolbeg, Dublin	65	57	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
ESB Corduff/Goddamendy Flex Gen	ESB	Corduff, Dublin	65	57	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Bulmer / Data Power & Hub services	Data Power & Hub Services	Grangecastle, Dublin	55	50	27/28'	FCAR2728T-4-report-v1.0.pdf

Annex 2 – Copies of Paragraph 4.29 to Annex I and Annex II to the Delegated Act

4.29. Electricity generation from fossil gaseous fuels

Description of the activity

Construction or operation of electricity generation facilities that produce electricity using fossil gaseous fuels. This activity does not include electricity generation from the exclusive use of renewable non-fossil gaseous and liquid fuels as referred to in Section 4.7 of this Annex and biogas and bio-liquid fuels as referred to in Section 4.8 of this Annex.

The economic activities in this category may be associated with several NACE codes, notably D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

Technical screening criteria

Substantial contribution to climate change mitigation

1. The activity meets either of the following criteria:
   (a) the life-cycle GHG emissions from the generation of electricity using fossil gaseous fuels are lower than 100 g CO2e/kWh.
   Life-cycle GHG emissions are calculated based on project-specific data, where available, using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018.
   Quantified life-cycle GHG emissions are verified by an independent third party.
   Where facilities incorporate any form of abatement, including carbon capture or use of renewable or low-carbon gases, that abatement activity complies with the criteria set out in the relevant Section of this Annex, where applicable.
   Where the CO_2 that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO_2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.
   (b) facilities for which the construction permit is granted by 31 December 2030 comply with all of the following:
      (i) direct GHG emissions of the activity are lower than 270g CO2e/kWh of the output energy, or annual direct GHG emissions of the activity do not exceed an average of 550kgCO2e/kW of the facility's capacity over 20 years;
      (ii) the power to be replaced cannot be generated from renewable energy sources, based on a comparative assessment with the most cost-effective and technically feasible renewable alternative for the same capacity identified; the result of this comparative assessment is published and is subject to a stakeholder consultation;
      (iii) the activity replaces an existing high emitting electricity generation activity that uses solid or liquid fossil fuels;
      (iv) the newly installed production capacity does not exceed the capacity of the replaced facility by more than 15 %;
      (v) the facility is designed and constructed to use renewable and/or low-carbon gaseous fuels and the switch to full use of renewable and/or low-carbon gaseous fuels takes place by 31 December 2035, with a commitment and verifiable plan approved by the management body of the undertaking;
      (vi) the replacement leads to a reduction in emissions of at least 55 % GHG over the lifetime of the newly installed production capacity;
      (vii) where the activity takes place on the territory of a Member State in which coal is used for energy generation, that Member State has committed to phase-out the use of energy generation from coal and has reported this in its integrated national energy and climate plan referred to in Article 3 of Regulation (EU) 2018/1999 of the European Parliament and of the Council [*8] or in another instrument.

Compliance with the criteria referred to in point 1(b) is verified by an independent third party. The independent third-party verifier has the necessary resources and expertise to perform such verification. The independent third party verifier does not have any conflict of interest with the owner or the funder, and is not involved in the development or operation of the activity. The independent third party verifier carries out diligently the verification of compliance with the technical screening criteria. In particular, every year the independent third party publishes and transmits to the Commission a report:
   (a) certifying the level of direct GHG emissions referred to in point 1(b)(i);

(b) where applicable, assessing whether annual direct GHG emissions of the activity are on a credible trajectory to comply with the average threshold over 20 years referred to in point 1(b)(i);
(c) assessing whether the activity is on a credible trajectory to comply with point 1(b)(v).

When undertaking the assessment referred to in point 1(b), the independent third party verifier takes into account in particular the planned annual direct GHG emissions for each year of the trajectory, realised annual direct GHG emissions, planned and realised operating hours, and planned and realised use of renewable or low carbon gases.
On the basis of the reports transmitted to it, the Commission may address an opinion to the relevant operators. The Commission shall take those reports into account when performing the review referred to in Article 19(5) of Regulation (EU) 2020/852.

2. The activity meets either of the following criteria:
   (a) at construction, measurement equipment for monitoring of physical emissions, such as those from methane leakage, is installed or a leak detection and repair programme is introduced;
   (b) at operation, physical measurement of emissions are reported and leak is eliminated.
3. Where the activity blends fossil gaseous fuels with gaseous or liquid biofuels, the agricultural biomass used for the production of the biofuels complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex. Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants. No significant cross-media effects occur. For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

	An Environmental Impact Assessment is completed prior to the construction of a nuclear power plant, in accordance with Directive 2011/92/EU. The required mitigation and compensatory measures are implemented. The relevant elements in this Section are covered by Member States' reports to the Commission in accordance with Article 14(1) of Directive 2011/70/Euratom.
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex. Non-radioactive emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the best available techniques (BAT) conclusions for large combustion plants. No significant cross-media effects occur. For nuclear power plants greater than 1 MW thermal input but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193. Radioactive discharges to air, water bodies and ground (soil) comply with individual licence conditions for the specific operations, where applicable, and/or national threshold values in line with Directive 2013/51/Euratom and Directive 2013/59/Euratom). Spent fuel and radioactive waste is safely and responsibly managed in accordance with Directive 2011/70/Euratom and Directive 2013/59/Euratom. An adequate capacity of interim storage is available for the project, while national plans for disposal are in place to minimize the duration of interim storage, in compliance with the provision of Directive 2011/70/Euratom that considers radioactive waste storage, including long-term storage, as an interim solution, but not an alternative to disposal.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex. An Environmental Impact Assessment is completed prior to the construction of a nuclear power plant, in accordance with Directive 2011/92/EU. The required mitigation and compensatory measures are implemented. For sites/operations located in or near biodiversity sensitive areas likely to have a significant effect on biodiversity sensitive areas (including the Natura 2000 network of protected areas, Unesco World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment, where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented. The sites/operations shall not be detrimental to the conservation status of any of the habitats or species present in protected areas.

4.29. **Electricity generation from fossil gaseous fuels**

Description of the activity

Construction or operation of electricity generation facilities that produce electricity using fossil gaseous fuels that meet the criteria in point 1(a) of Section 4.29 of Annex I. This activity does not include electricity generation from the exclusive use of renewable non-fossil gaseous and liquid fuels referred to in Section 4.7 of Annex I and biogas and bio-liquid fuels referred to in Section 4.8 of Annex I.

The economic activities in this category may be associated with several NACE codes, notably D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Technical screening criteria

Substantial contribution to climate change adaptation
1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity. 2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps: (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime; (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity; (c) an assessment of adaptation solutions that can reduce the identified physical climate risk. The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that: (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale; (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios ([16]) consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments. 3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports ([17]), scientific peer-reviewed publications and open source ([18]) or paying models. 4. The adaptation solutions implemented: (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; (b) favour nature-based solutions ([19]) or rely on blue or green infrastructure ([20]) to the extent possible; (c) are consistent with local, sectoral, regional or national adaptation plans and strategies; (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met; (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

([16]) Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

([17]) Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, https://www.ipcc.ch/reports/.

([18]) Such as Copernicus services managed by the European Commission.

([19]) Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of [adoption date]: https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/).

([20]) See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) – Enhancing Europe's Natural Capital, COM/2013/249 final.

Do no significant harm ('DNSH')	
(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO2e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex. Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants. No significant cross-media effects occur. For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

4.30. **High-efficiency co- generation of heat/cool and power from fossil gaseous fuels**

Description of the activity

Construction, refurbishment and operation of combined heat/cool and power generation facilities using fossil gaseous fuels that meet the criteria in point 1(a) of Section 4.30 of Annex I. This activity does not include high-efficiency co-generation of heat/cool and power from the exclusive use of renewable non-fossil gaseous and liquid fuels referred to in Section 4.19 of Annex I and biogas and bio-liquid fuels referred to in Section 4.20 of Annex I.

The economic activities in this category may be associated with NACE codes D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Technical screening criteria

Substantial contribution to climate change adaptation

1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity.
2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps:
   (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime;
   (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity;
   (c) an assessment of adaptation solutions that can reduce the identified physical climate risk.

   The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that:
   (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

Appendix C – Landscape and Visual Impact Assessment (LVIA) – Independent Peer Review

Landscape and Visual Impact Assessment (LVIA) – Independent Peer Review

Proposed Cashla Peaker Power Plant, Co. Galway
Prepared on behalf of Athenry Peaker Plant Concern Group
Date: 29 March 2026

C.1 Introduction

This appendix contains an independent peer review of the Landscape and Visual Impact Assessment (LVIA) submitted as part of the Environmental Impact Assessment Report (EIAR) for the proposed Cashla Peaker Plant development.

The purpose of this review is to assess the methodology, visualisations and conclusions presented within the LVIA and to identify areas where the assessment may not fully represent the likely landscape and visual effects of the proposed development.

This review should be read in conjunction with Section 4.7 of this submission, which summarises the key findings and planning implications arising from this technical assessment.

C.2 Scope of Review

The LVIA peer review examines:

- The methodology adopted in the assessment
- The use and interpretation of Zone of Theoretical Visibility (ZTV) mapping
- The role of vegetation in screening the development
- The visual assessment and photomontages
- The treatment of mitigation planting
- The assessment of lighting and night-time effects
- The consideration of cumulative landscape and visual impacts
- The alignment of the assessment with relevant planning policy

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C.3 Key Findings (Summary)

The review identifies a number of key issues which are directly relevant to the assessment of landscape and visual impact:

- Over-reliance on vegetation screening assumptions which may not reflect actual conditions
- Underestimation of visibility due to reliance on vegetation-filtered ZTV rather than bare-earth ZTV
- Insufficient emphasis on worst-case (unmitigated) scenarios, particularly in early operational years
- Photomontages that may underrepresent the visual prominence of the development
- Absence of a detailed assessment of lighting and night-time visual effects
- Limited consideration of cumulative landscape and visual impacts
- Underestimation of the overall extent and significance of visual effects

These issues indicate that the conclusions of the LVIA may not fully represent the likely landscape and visual impacts of the proposed development.

C.4 Relevance to Planning Assessment

The findings of this peer review are directly relevant to the determination of the application.

In particular, they indicate that:

- The extent of visibility of the proposed development may be greater than presented
- Visual impacts may be more significant in early operational years prior to the establishment of mitigation planting
- Lighting may increase the perceived prominence of the development, particularly during night-time
- The cumulative impact of the development within a rural landscape may be underestimated

These issues raise concerns regarding compliance with the Galway County Development Plan, which seeks to protect landscape character and visual amenity and to ensure that development is appropriately integrated into its surroundings.

C.5 Full LVIA Peer Review Document

The full Landscape and Visual Impact Assessment Peer Review is included below

Landscape and Visual Commentary / Peer Review

Proposed Cashla Peaker Power Plant, Co. Galway

(Prepared on behalf of Peaker Plant Concern Group)

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INTRODUCTION

1.1. This report provides an independent review of the Landscape and Visual Impact Assessment (LVIA) prepared by Eamonn Byrne Landscape Architects on behalf of the Applicant in support of the proposed Cashla Peaker Power Plant development.

1.2. The LVIA is presented within Volume 3 of the EIAR (Appendix 6.1) and assesses the potential landscape and visual effects of the Proposed Development within the defined study area. The assessment is supported by Zone of Theoretical Visibility (ZTV) mapping (including both bare earth and vegetation-filtered scenarios) and a series of verified photomontages prepared from a network of representative viewpoints across the study area.

1.3. The LVIA considers views from a range of receptor types, including local residents, road users and the wider rural landscape, and presents visualisations illustrating the Proposed Development at both Year 1 and Year 15 following the establishment of mitigation planting.

1.4. The LVIA concludes that the Proposed Development will give rise to localised moderate adverse visual effects, primarily affecting receptors in close proximity to the site, with effects reducing to minor or negligible at greater distances due to intervening vegetation, built form and landform.

1.5. This review considers the methodology, visualisations, and conclusions presented within the LVIA, with particular regard to:

The Zone of Theoretical Visibility (ZTV) analysis, including the distinction between bare-earth and vegetation-filtered scenarios;

The role of existing and proposed vegetation in screening the development;

The assessment of visual effects and the reliance on mitigation planting;

The consideration of lighting and night-time effects; and

The cumulative landscape context

1.6. The purpose of this review is to identify areas where the LVIA may not fully represent the likely landscape and visual effects of the Proposed Development.

REVIEW of LVIA Methodology

2.1. The LVIA adopts a methodology broadly consistent with established guidance, including the principles set out in GLVIA3, and applies a structured approach to the assessment of landscape and visual effects. This includes the use of ZTV analysis, viewpoint-based assessment, and the preparation of photomontages to illustrate the likely appearance of the Proposed Development.

2.2. Notwithstanding this, a number of aspects of the methodology, and its application within the assessment, warrant further consideration.

Use of ZTV Analysis

2.3. The LVIA presents both a bare-earth ZTV and a vegetation-filtered ZTV, which is considered good practice in principle. However, it is noted that the vegetation-filtered ZTV incorporates assumed screening effects from hedgerows, woodland and built form, including:

Woodland heights of approximately 12m;

Unmanaged hedgerows of approximately 5m; and

Managed hedgerows of approximately 2m.

While these assumptions are clearly stated, their application introduces a level of uncertainty. Vegetation within the study area is variable in height, density and continuity, and is often subject to active management. As such, the level of screening assumed within the vegetation filtered ZTV may not be consistently representative of actual on-site conditions.

In this context, the bare-earth ZTV provides a more robust indication of the maximum potential extent of visibility, particularly during winter months or in locations where vegetation is limited or discontinuous

Role of Vegetation in the Assessment

A consistent feature of the LVIA is the reliance on vegetation - both existing and proposed - to reduce the perceived visibility of the Proposed Development.

However, the distinction between Existing baseline vegetation, and Proposed mitigation planting is not always clearly defined within the assessment narrative.

This distinction is important, as existing vegetation forms part of the baseline condition, whereas proposed planting represents a mitigation measure that will take time to establish and may not achieve the level of screening assumed.

The reliance on vegetation within both the ZTV modelling and the visual assessment therefore introduces a degree of uncertainty in the predicted level of effect.

Assessment of Mitigated vs Worst-Case Scenarios

The LVIA presents visualisations at both Year 1 and Year 15, reflecting the anticipated establishment of mitigation planting over time.

While this is appropriate, it is noted that:

The assessment appears to place greater weight on mitigated scenarios, particularly those reflecting more mature vegetation cover;

The potential for greater visibility during the early operational years is less clearly emphasised within the conclusions.

2.12. Best practice would typically require clear distinction between:

Worst-case (unmitigated or minimally mitigated) scenarios, and

Residual (post-mitigation) effects.

2.13. In this context, the reliance on assumed vegetation screening and mitigated scenarios is a key consideration, particularly in informing the interpretation of visibility and visual effects, as discussed further in the following section.

ZTV and Visibility Analysis

3.1. The LVIA includes a Zone of Theoretical Visibility (ZTV) analysis to inform the extent of potential visibility of the Proposed Development across the study area. Two ZTV scenarios are presented:

A bare-earth ZTV, which excludes the screening effects of vegetation and buildings; and

A vegetation-filtered ZTV, which incorporates assumed screening from hedgerows, woodland and built form.

The inclusion of both scenarios is appropriate and reflects good practice. However, a comparison of the two ZTVs highlights a notable variation in the extent of predicted visibility.

The bare-earth ZTV indicates a substantially wider extent of theoretical visibility, extending across a broad area of the surrounding rural landscape and including areas in proximity to Athenry. In contrast, the vegetation-filtered ZTV presents a more contained and fragmented pattern of visibility, reflecting the assumed influence of screening elements.

While it is acknowledged that vegetation and built form will influence actual visibility on the ground, the extent to which the vegetation-filtered ZTV reduces visibility is dependent on the accuracy of the underlying assumptions. As outlined in Section 2, these include hedgerow and woodland heights that may not be consistently representative of prevailing conditions within the study area.

In particular:

Hedgerows are assumed to provide continuous screening at heights of up to 5m;

Woodland blocks are assumed to provide uniform screening at heights of approximately 12m; and

The combined effect of vegetation is treated as a consistent visual barrier across the landscape.

In practice, vegetation within the receiving landscape is variable in height, density and continuity, and is subject to seasonal change and active management. As such, the level of screening illustrated within the vegetation-filtered ZTV may not be realised across all areas.

In this context, the bare-earth ZTV provides an important indication of the maximum potential extent of visibility, particularly:

During winter months when vegetation cover is reduced;

In locations where hedgerows are intermittent or actively managed; and

Prior to the establishment of proposed mitigation planting.

It is also noted that the conclusions of the LVIA appear to align more closely with the vegetation-filtered ZTV, with limited emphasis placed on the wider extent of visibility indicated by the bare-earth scenario.

This has the potential to underrepresent the overall extent of visibility of the Proposed Development, particularly in the early operational phase and in areas with limited existing screening.

Overall, while the ZTV analysis is comprehensive in its presentation, greater emphasis on the implications of the bare-earth scenario would provide a more balanced understanding of the likely visibility of the Proposed Development.

Visual Assessment and Photomontages

4.1. The LVIA includes a series of verified photomontages prepared from representative viewpoints across the study area, illustrating the Proposed Development under both Year 1 and Year 15 scenarios. These visualisations are a key component of the assessment and provide an indication of how the development may be perceived over time.

4.2. A review of the photomontages indicates that the predicted level of visibility is closely linked to the presence and effectiveness of vegetation screening, particularly along field boundaries and around the site perimeter.

4.3. The Year 15 visualisations demonstrate a substantial reduction in visibility, with the Proposed Development largely contained by established hedgerows and tree planting. However, it is evident that this level of screening is dependent on the successful establishment and long term growth of mitigation planting.

4.4. In contrast, the Year 1 visualisations indicate that:

Vegetation is already providing a notable degree of screening;

Hedgerows appear relatively continuous and established; and

The Proposed Development is partially filtered in a manner that reduces its visual prominence.

4.5. While the inclusion of a Year 1 scenario is appropriate, the level of vegetation shown at this stage appears optimistic. In practice, newly planted hedgerows and trees would typically:

Require a number of growing seasons to establish;

Exhibit gaps and variability in early years; and

Provide limited effective screening in the short term.

As such, there is potential for the photomontages to underrepresent the visibility of the Proposed Development during the initial operational phase, when mitigation planting has not yet matured.

This is particularly relevant in the context of the existing baseline, where:

The site is located within a relatively open agricultural landscape;

Field boundaries are defined by hedgerows of varying height and density; and

Existing vegetation does not appear to provide consistent or complete screening.

In addition, the photomontages illustrate the Proposed Development under daytime conditions only. Given the inclusion of lighting infrastructure as part of the development, the absence of night-time visualisations limits the ability to fully understand the visual effects associated with the operational phase.

Overall, the photomontages provide a useful indication of the potential long-term appearance of the Proposed Development.

However: The reliance on well-established vegetation within the visualisations may result in an underestimation of visual effects in the early years following construction, particularly for receptors in close proximity to the site.

Lighting and Night-Time Effects

5.1. The Proposed Development includes a range of lighting elements associated with the operation of the Peaker Plant, the above-ground installation (AGI), and the ESB substation. These include floodlighting columns (up to 8m in height), as well as operational and security lighting within the site.

5.2. The potential for lighting to give rise to environmental effects is acknowledged within the EIAR, including within the ecological assessment, which identifies that:

In the absence of mitigation measures, lighting has the potential to result in a permanent significant negative impact on local bat populations, through disturbance to commuting and foraging behaviour.

5.3. While lighting design is stated to accord with best practice guidance, the LVIA does not appear to include a detailed assessment of the landscape and visual effects of artificial lighting, particularly during the operational phase.

5.4. In particular:

There is no clear assessment of night-time visibility of the Proposed Development;

The interaction between lighting and the surrounding rural landscape is not fully explored; and

The potential for lighting to increase the perceived extent and prominence of the development is not addressed.

This is a notable omission, given the characteristics of the receiving environment, which comprises a predominantly rural and agricultural landscape with low baseline levels of artificial light. In such contexts, the introduction of new lighting can significantly alter the character of the area, particularly during hours of darkness.

Furthermore, while vegetation may provide some degree of screening during daylight hours, its effectiveness in reducing the visual influence of lighting is more limited. Light spill and glow can extend beyond the immediate site and may be perceptible from a wider area than the physical structures themselves.

The absence of night-time visualisations or a dedicated lighting assessment within the LVIA limits the ability to fully understand the visual effects of the Proposed Development.

In this context, the potential for lighting to contribute to increased visual prominence and to alter the character of the local landscape during the operational phase may not be fully represented within the assessment.

Cumulative Landscape and Visual Effects

6.1. The LVIA considers the Proposed Development as part of the wider landscape context, including the presence of existing infrastructure such as the Cashla 220kV substation, the M6/M18 motorway interchange, and the surrounding road network.

6.2. While the site is located within an area that already accommodates elements of infrastructure, the cumulative assessment appears to place emphasis on the existing developed character of the immediate context, rather than fully exploring the combined visual influence of multiple infrastructure elements.

6.3. In particular, the Proposed Development comprises several distinct but interrelated components, including:

The Peaker Plant and associated buildings;

The above-ground installation (AGI), including kiosks, vents and flues;

The ESB substation within the site; and

Associated lighting and ancillary infrastructure.

While some elements are assessed individually, the LVIA provides limited commentary on the combined visual effect of these components as a unified development, particularly when viewed from nearby receptors.

In addition, the Proposed Development introduces a new form of industrial energy infrastructure into a landscape that is currently characterised primarily by agricultural land uses, with infrastructure largely confined to linear elements (e.g. roads and existing utilities).

As such, the development represents not only an addition to the existing landscape, but also a change in the type and intensity of built form, which may not be fully captured through assessment of individual components in isolation.

The LVIA also appears to give limited consideration to:

The sequential experience of receptors travelling along local roads;

The interaction between the Proposed Development and existing infrastructure in combined views; and

The potential for the development to contribute to a perception of increased industrialisation within the local landscape.

While the presence of existing infrastructure is relevant, it does not necessarily reduce the significance of additional development. Instead, it may contribute to a layering of infrastructure, which can increase the overall visual complexity and perceived intensity of development within the landscape.

In this context, the cumulative landscape and visual effects of the Proposed Development, when considered alongside existing and associated infrastructure, may be greater than those presented within the LVIA.

Planning Policy Context

7.1. The Proposed Development falls within the administrative area of the Galway County Council and is therefore subject to the policies and objectives of the Galway County Development Plan 2022–2028.

7.2. The Development Plan includes a number of policies relating to landscape protection, visual amenity, and rural character, which are relevant to the consideration of the Proposed Development.

7.3. In particular, the Plan seeks to:

Protect the intrinsic character and visual quality of the rural landscape;

Ensure that new development is appropriately sited and visually integrated into the receiving environment; and

Avoid development that would result in significant adverse impacts on landscape character or visual amenity, particularly in open or sensitive rural areas.

The receiving landscape in the vicinity of the Proposed Development is characterised by agricultural land uses, field boundary hedgerows, and dispersed rural settlement, with existing infrastructure largely limited to linear elements such as roads and utilities.

While the LVIA concludes that visual effects will be localised and moderate, the findings of this review indicate that:

The extent of visibility may be greater than presented, particularly where vegetation screening is limited or seasonal;

The early operational phase may give rise to increased visual prominence prior to the establishment of mitigation planting; and

The introduction of lighting and industrial infrastructure has the potential to alter the character of the area, particularly during hours of darkness.

7.6. In this context, there is potential for the Proposed Development to conflict with the objectives of the Development Plan relating to the protection of landscape character and visual amenity, particularly where effects may be more pronounced than those identified within the LVIA.

Summary and Conclusions

8.1. This review has considered the Landscape and Visual Impact Assessment (LVIA) prepared in support of the proposed Cashla Peaker Plant development.

8.2. The LVIA adopts a structured methodology and includes a comprehensive suite of visualisations, including ZTV mapping and photomontages, which are consistent with established assessment practice. However, a number of aspects of the assessment introduce uncertainty in the conclusions presented.

8.3. In particular:

The vegetation-filtered ZTV relies on assumptions regarding the height, density and continuity of hedgerows and woodland, which may not be consistently representative of conditions across the study area;

The bare-earth ZTV, which indicates a wider extent of potential visibility, is not given equivalent weight in the interpretation of visual effects;

The visualisations place notable emphasis on established vegetation and mitigation planting, which may not reflect the level of visibility during the early years of operation;

The LVIA does not include a detailed assessment of lighting and night-time effects, despite the presence of floodlighting and the acknowledged potential for lighting to result in environmental effects; and

The cumulative effects of the Proposed Development, particularly in combination with existing infrastructure and as a unified development, are not fully explored.

8.4. Taken together, these factors suggest that the level of visibility and visual effect associated with the Proposed Development may be underrepresented, particularly:

In the initial years following construction;

In areas where vegetation is limited, seasonal or actively managed; and

During hours of darkness, when lighting may increase the perceived prominence of the development.

In the context of the policies and objectives of the Galway County Development Plan 2022– 2028, which seek to protect landscape character and visual amenity and ensure that development is appropriately integrated within the rural landscape, it is considered that the effects of the Proposed Development may be greater than those presented within the LVIA.

On this basis, further clarification and assessment would be required to fully understand the extent of landscape and visual effects arising from the Proposed Development, particularly in relation to early-stage visibility, vegetation assumptions, and night-time impacts.

Appendix D – Hydrogeology and Karst Risk Assessment

D.1 Introduction

This appendix provides an overview of the hydrogeological context of the proposed development site, with particular focus on the characteristics and risks associated with karst limestone environments.

It supports the assessment presented in Chapter 4.6 of this submission and outlines the key factors contributing to groundwater vulnerability and contamination risk.

D.2 Karst Limestone Environment

The proposed development is located within a karst limestone geological setting, as identified within the EIAR.

Karst landscapes are characterised by:

- Fissured and fractured bedrock
- Underground drainage systems and conduits
- Rapid infiltration of surface water
- Direct hydraulic connectivity between surface and groundwater

Karst environments are widely recognised, including by the Geological Survey Ireland, as highly vulnerable to groundwater contamination. Guidance notes that groundwater in karst settings can be “particularly vulnerable due to rapid flow and limited attenuation of contaminants.”

Unlike non-karst environments, groundwater flow in karst systems is often rapid and unpredictable, with limited attenuation of contaminants.

D.3 Groundwater Vulnerability

Karst limestone is typically classified as having high to extreme groundwater vulnerability.

This reflects:

- The presence of open fissures and conduits
- Thin or absent soil cover in places
- Direct pathways for contaminant transport

Guidance from the Environmental Protection Agency emphasises that groundwater requires protection as a “valuable resource” and highlights the importance of preventing contamination from surface activities.

In rural areas, groundwater may be used for domestic supply, agriculture and livestock, increasing the sensitivity of receptors.

D.4 Contamination Pathways

The proposed development introduces a number of potential contamination pathways, including:

- Storage and handling of fuels, including gas and diesel
- Oils, lubricants and other hazardous materials
- Surface water runoff from hardstanding areas
- Accidental spills, leaks or equipment failure
- Construction-related disturbance and drainage

Guidance, including that of the Environmental Protection Agency, notes that contaminants in karst environments can "travel rapidly with little or no natural filtration," increasing the risk of groundwater pollution.

This significantly increases the risk of groundwater contamination.

D.5 Surface Water and Groundwater Interaction

Karst systems often exhibit strong interaction between surface water and groundwater.

Surface water features, including streams and drainage channels, may be directly connected to groundwater through swallow holes or fissures.

This creates the potential for contaminants entering surface water to be transferred rapidly into groundwater systems.

Such interactions increase the complexity of hydrological behaviour and the difficulty of predicting contaminant pathways.

D.6 Limitations of Mitigation in Karst Environments

Mitigation measures are typically relied upon in EIAR assessments to reduce the risk of contamination.

However, in karst environments, the effectiveness of such measures is inherently uncertain due to:

- The complexity and variability of subsurface flow pathways
- The potential for undetected fissures or conduits
- The difficulty in containing or intercepting contaminants once released

As a result, mitigation measures cannot be assumed to provide full protection of groundwater resources.

D.7 Long-Term and Cumulative Risk

The proposed development has an operational lifespan extending to 2050.

Over such a timeframe, the potential for cumulative impacts increases, including:

- Gradual leakage or contamination
- System degradation or failure
- Increased frequency of operational incidents

In karst environments, contamination may not be immediately detectable and may persist over long periods.

This gives rise to long-term environmental risk.

D.8 Implications for Development Suitability

The presence of karst limestone and high groundwater vulnerability is a significant constraint on development.

Such environments require a high degree of precaution due to:

- The sensitivity of groundwater resources
- The potential for rapid and irreversible contamination
- The uncertainty associated with predicting subsurface behaviour

The introduction of large-scale industrial development in this context presents a heightened level of risk.

D.9 Conclusion

Karst limestone environments are inherently vulnerable to contamination and present significant challenges for groundwater protection.

The combination of rapid groundwater flow, direct surface-groundwater connectivity and limited natural filtration results in a high-risk environment.

In this context, the reliance on mitigation measures alone is insufficient to ensure protection of groundwater resources.

These factors support the conclusion that the proposed development gives rise to significant hydrogeological risk and that the suitability of the site is fundamentally constrained by its geological characteristics.

D.10 References

The information presented in this appendix is informed by established guidance and research on karst hydrogeology and groundwater protection, including:

- Geological Survey Ireland (GSI)
- Environmental Protection Agency (EPA Ireland)
- Environmental Protection Agency – Karst geology and contamination risk
- World Health Organization – Water quality and human health

These sources reflect established scientific understanding of karst environments and groundwater vulnerability.

Appendix E – Historical Aerial Imagery and Site Evolution

This appendix presents a series of historical aerial images of the proposed development site, spanning the period from 2011 to 2025.

The purpose of this analysis is to illustrate changes in land use, ground condition and landscape features over time, and to assess whether the baseline conditions described in the EIAR accurately reflect the current and historical state of the site.

The imagery indicates that the site has undergone progressive change over a relatively recent timeframe, including apparent land modification, drainage and alteration of vegetation patterns.

These observations are relevant to the assessment of biodiversity, land and soils, hydrology and archaeological potential.

Aerial Video of the site in 2021 and 2022,

https://youtu.be/10C1YdaQhN4

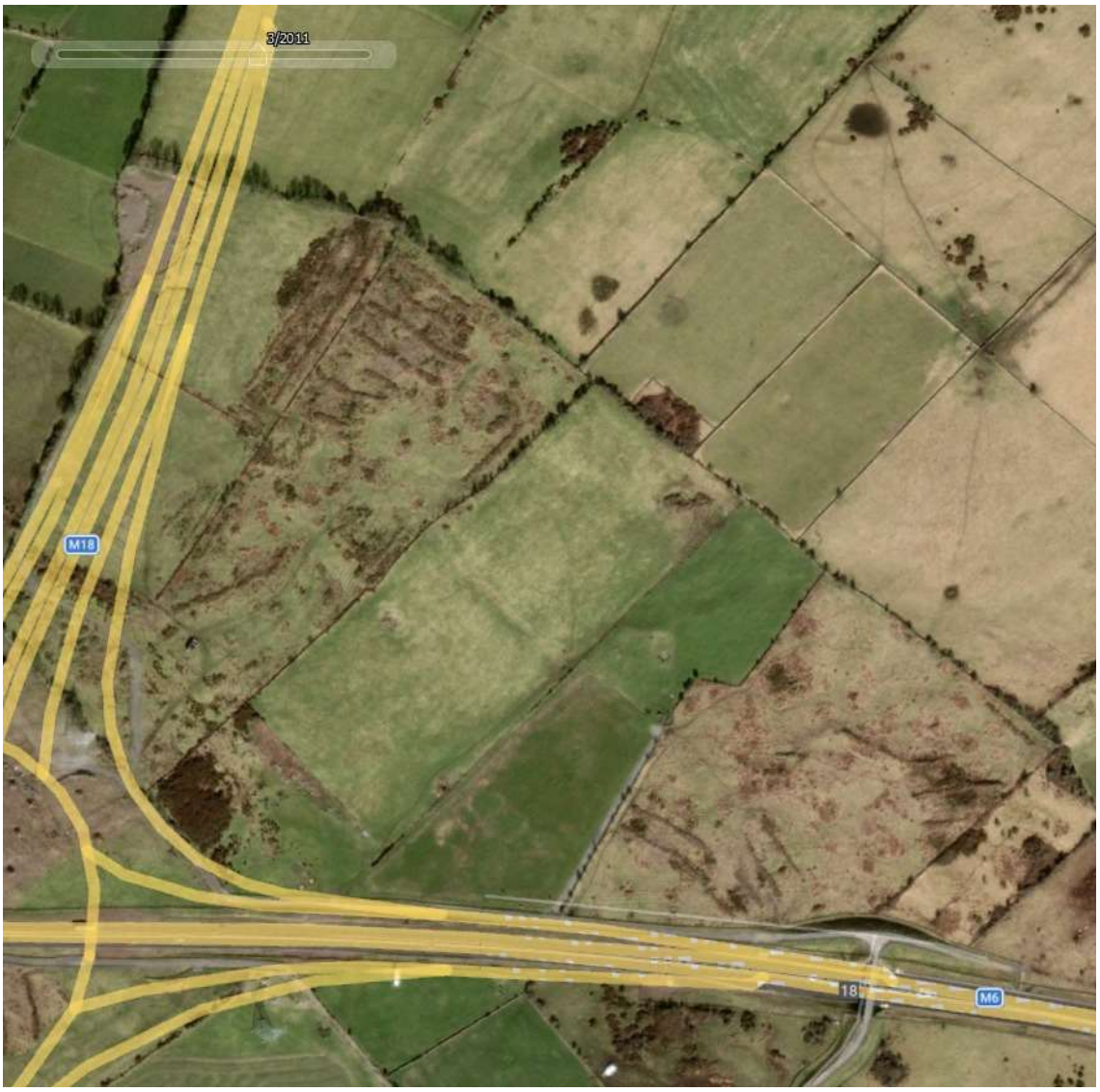


Figure E.1 – Site Aerial Image (March 2011)

The site appears partially undeveloped, with evidence of irregular field structure and areas consistent with wet or poorly drained ground conditions. Vegetation patterns appear varied, suggesting a semi-natural or less intensively managed landscape.

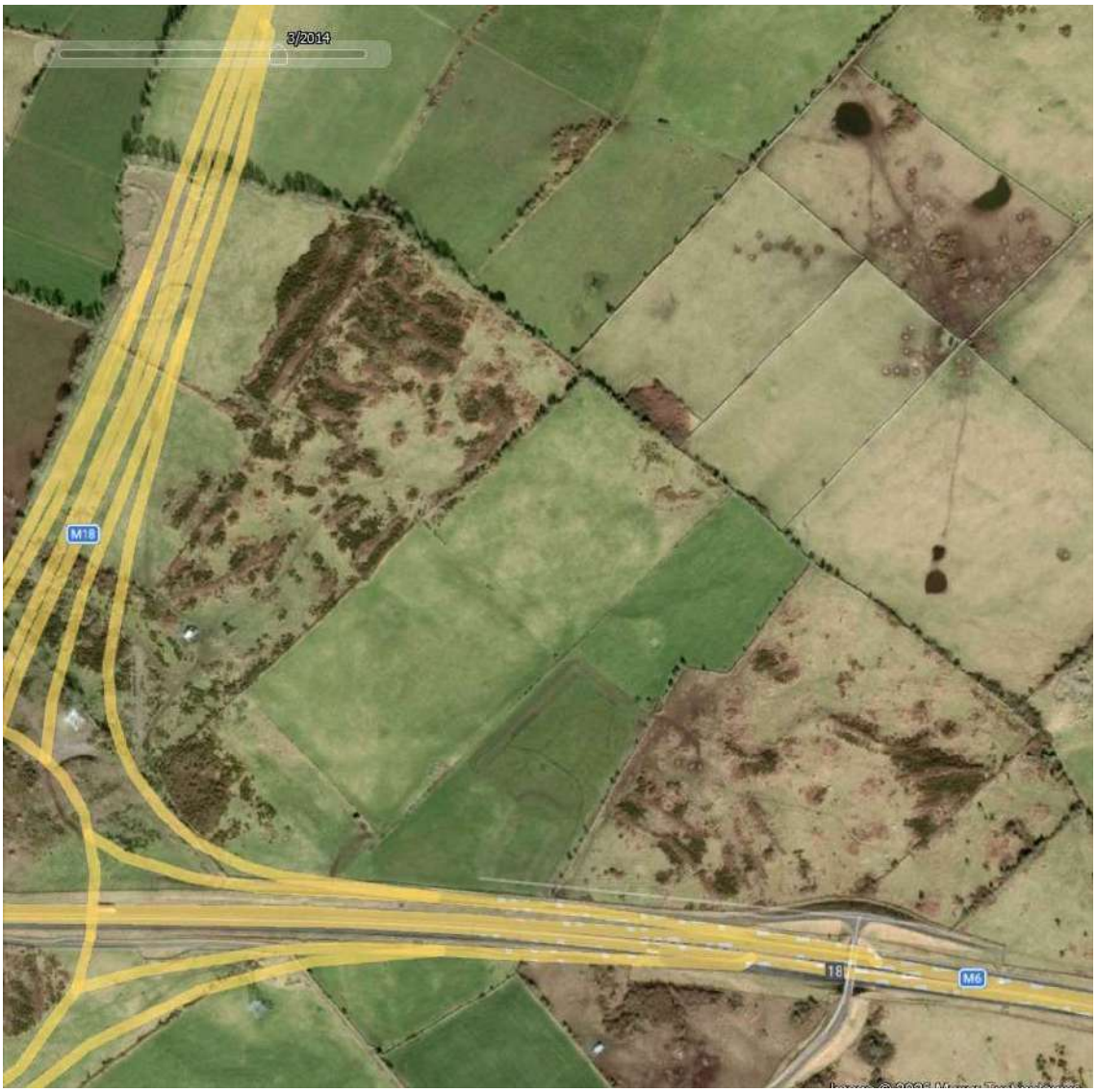


Figure E.2a – Site Aerial Image (March 2014 – View 1)

Early indications of land modification are visible, including changes in field definition and possible drainage or ground disturbance. Variations in surface tone suggest intervention in soil or ground conditions.

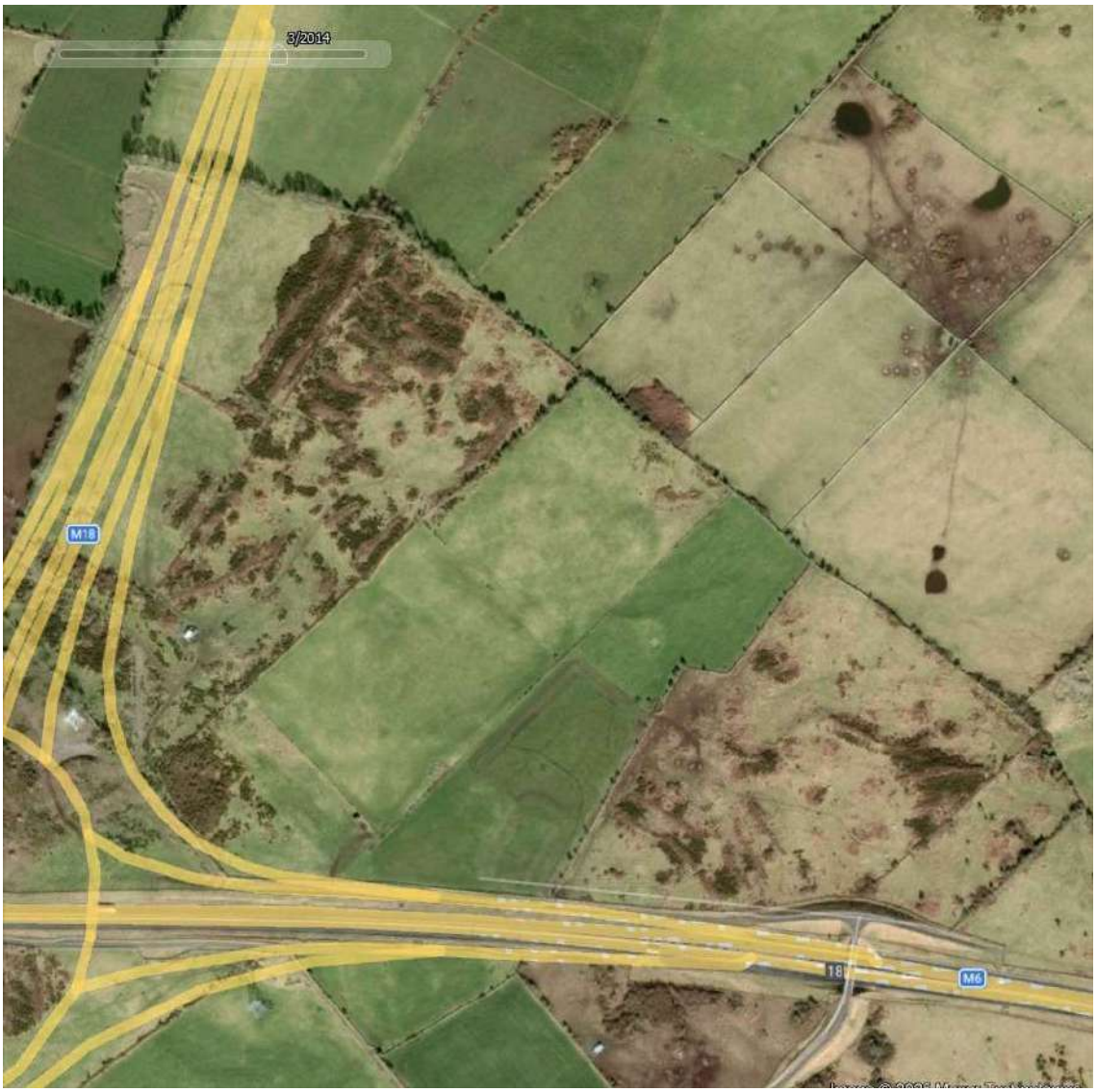


Figure E.2b – Site Aerial Image (March 2014 – View 2)

A second view from the same period shows further evidence of altered ground conditions, including more uniform field boundaries and reduced variability in vegetation. This may indicate ongoing land management or modification activity.

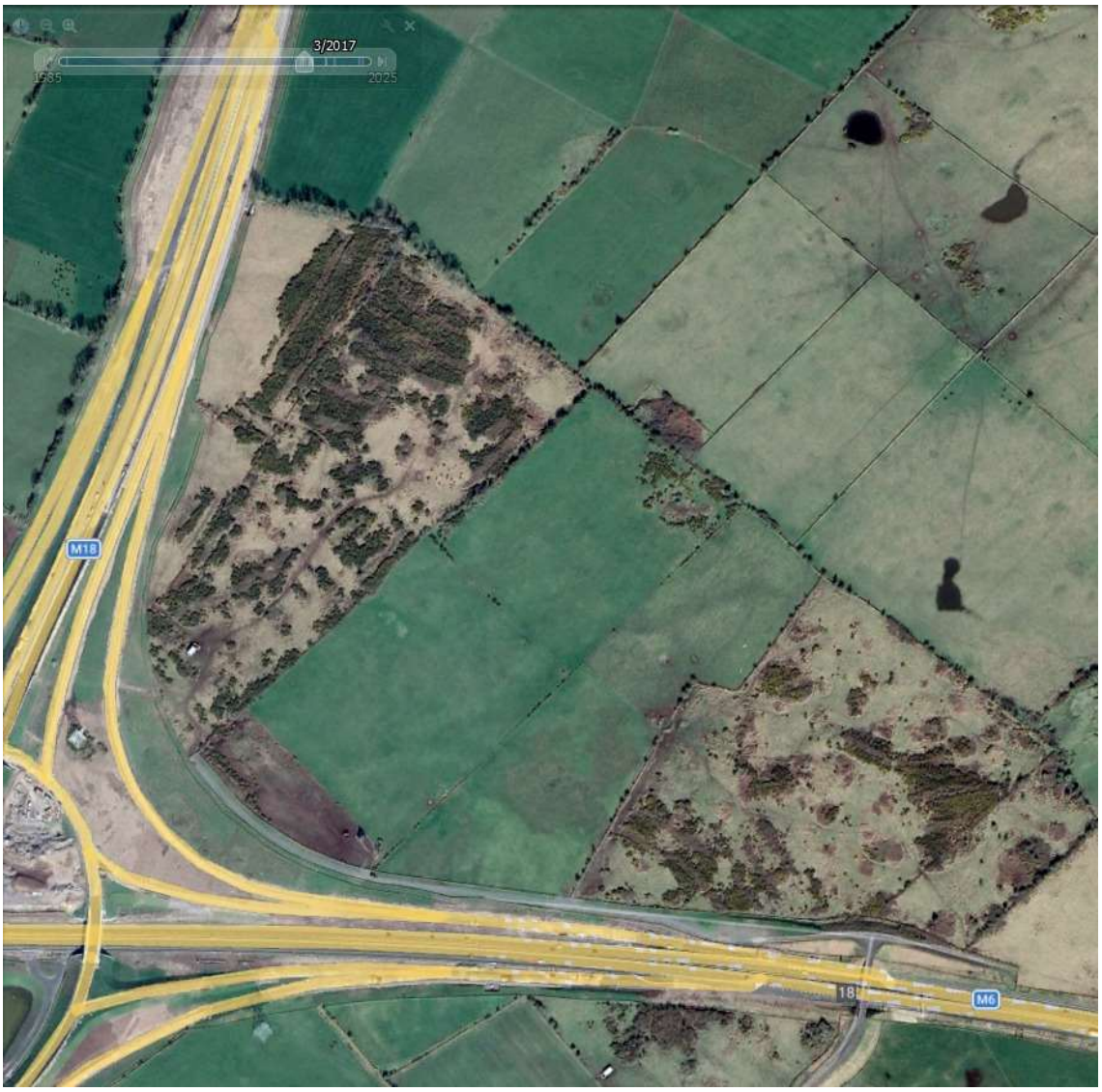


Figure E.3 – Site Aerial Image (March 2017)

The site shows increased uniformity compared to earlier imagery, with reduced evidence of natural variation. This may reflect continued ground modification, drainage or improvement works.

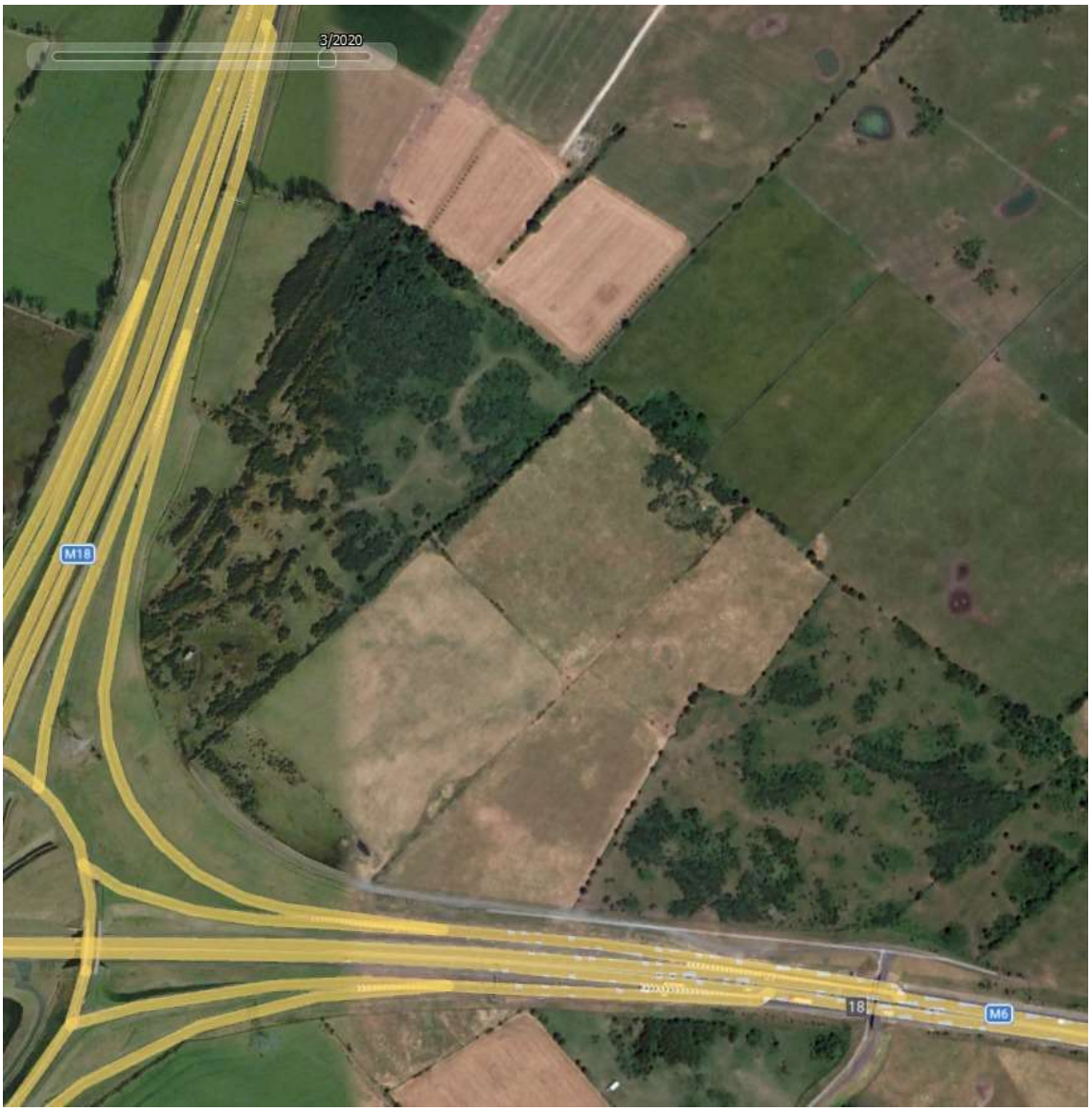


Figure E.4 – Site Aerial Image (March 2020)

The site appears more intensively managed, with consistent surface conditions across much of the area. Natural features such as wet patches or scrub appear less evident, suggesting further alteration of the original ground condition.

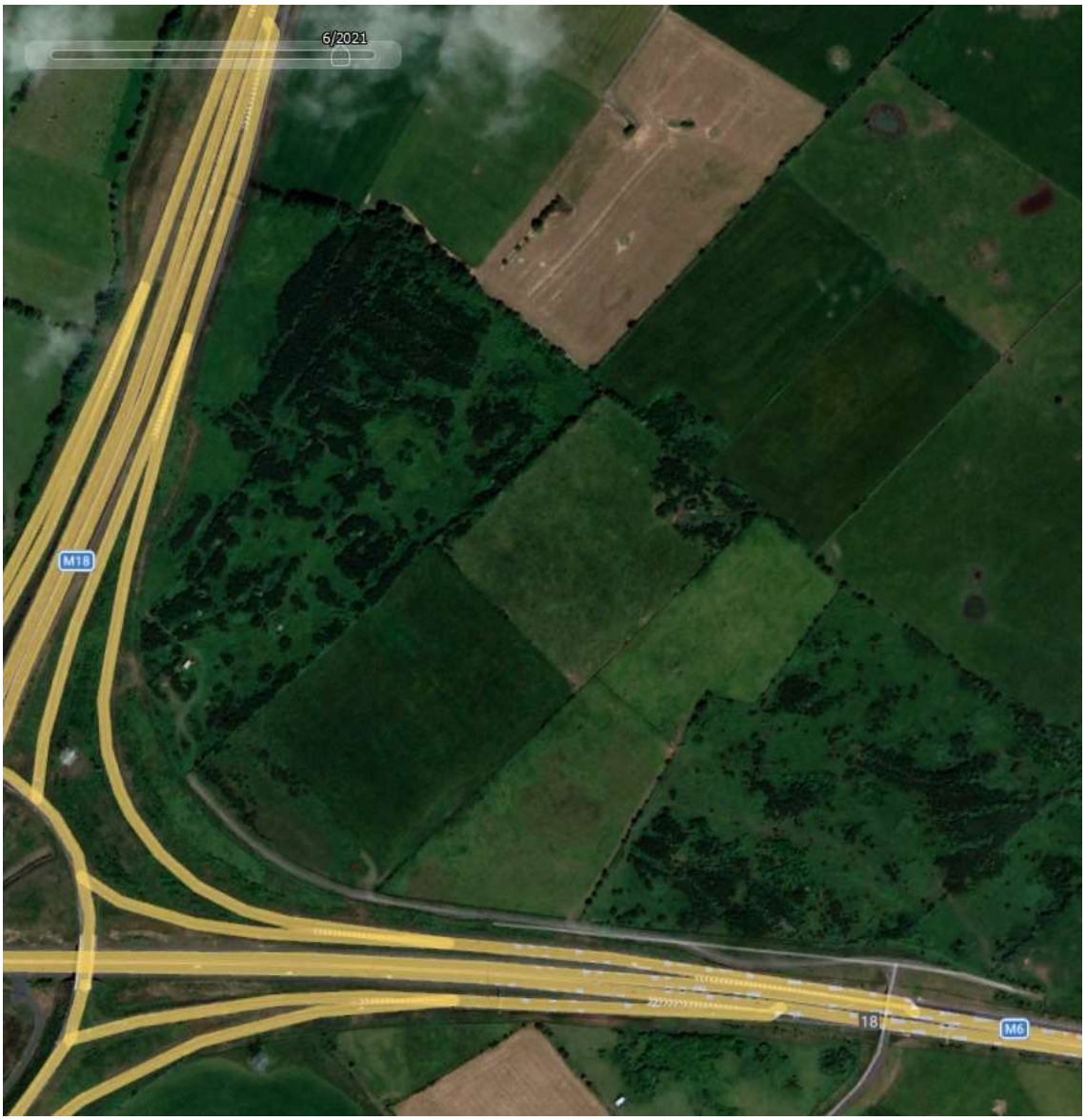


Figure E.5 – Site Aerial Image (June 2021)

The landscape appears increasingly homogenised, with clear evidence of managed agricultural use and limited visible semi-natural features. This indicates a continuation of the trend of land modification.

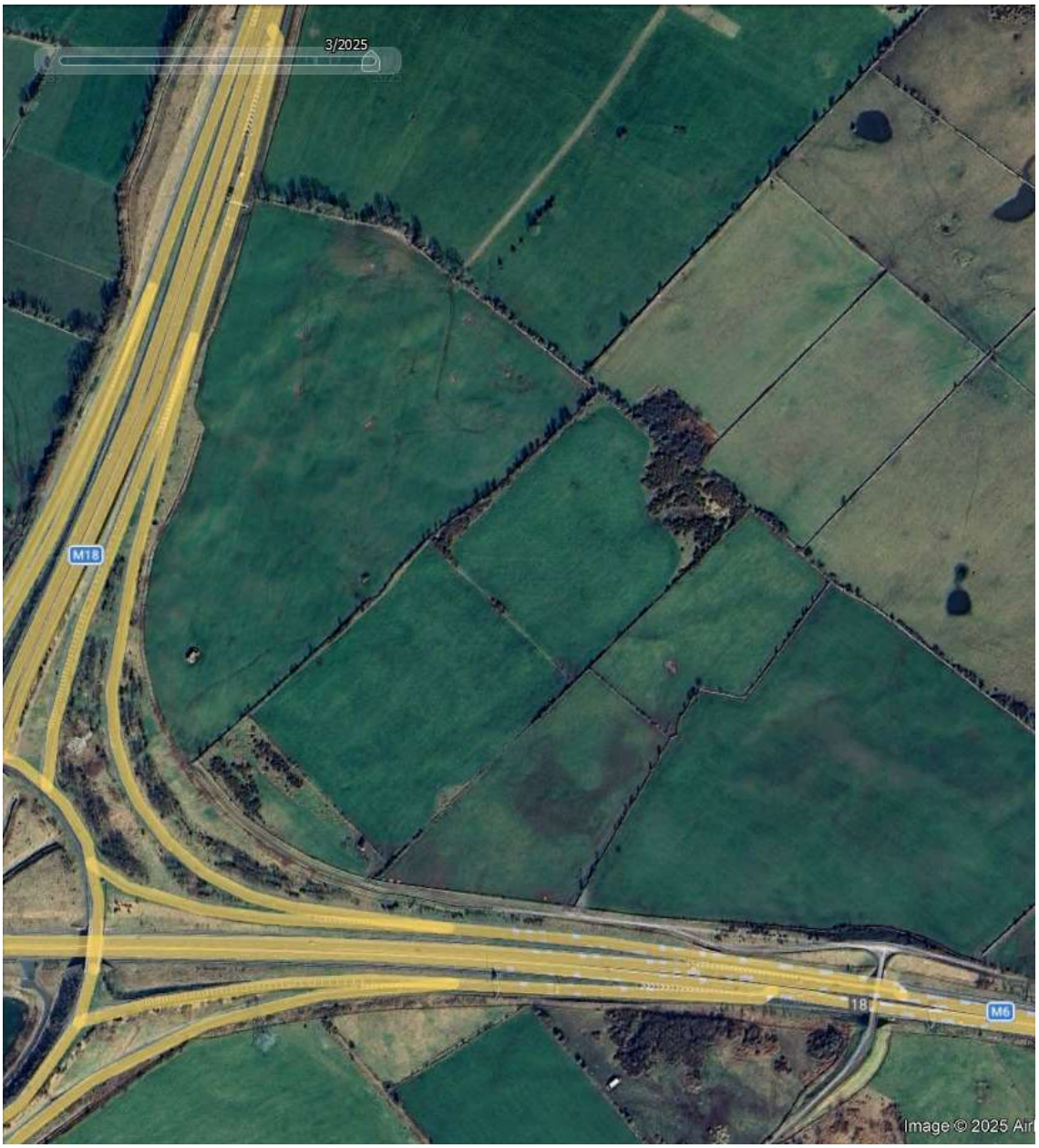


Figure E.6 – Site Aerial Image (March 2025)

The current condition of the site reflects a significantly altered landscape compared to earlier imagery. The site appears uniform and fully managed, with little visible evidence of earlier ground variability or natural features.

The sequence of aerial imagery indicates that the site has undergone progressive change over a relatively recent period.

This raises questions as to whether the baseline conditions described in the EIAR fully reflect the historical and current state of the site, particularly in relation to:

- soil condition and ground stability
- hydrological characteristics
- ecological function
- archaeological potential

Where land modification has occurred, it is necessary to consider whether:

- the current baseline represents a reduced or altered environmental condition
- previously existing habitats or features have been removed
- ground disturbance may have obscured or affected subsurface archaeological remains

In the absence of a clear assessment of land use change over time, the reliability of the EIAR baseline is uncertain.

F.1 Introduction

This appendix provides a summary of concerns expressed by members of the local community in relation to the proposed Cashla Peaker Plant development.

The statements presented are representative of issues raised through public consultation events, community engagement and ongoing local discussion. They reflect recurring themes relating to:

• environmental impact
• human health and safety
• land use compatibility
• the suitability of the proposed development within a rural setting

This appendix provides qualitative insight into community views and should be read alongside:

• Appendix A – Community Survey Results (quantitative evidence, 1,056 responses as of 23rd April 2026)
• Appendix J – Petitions and Collective Submissions (scale of organised opposition)

F.2 Summary of Community Concerns

The following themes have been consistently identified across individual community statements:

• incompatibility with rural character
• concerns regarding groundwater vulnerability and water supply
• potential health impacts and air quality concerns
• traffic and road safety risks
• visual impact and loss of amenity
• impacts on agricultural activity and farm operations
• uncertainty regarding operational patterns and fuel usage
• long-term environmental risk extending to 2050
• concerns regarding consultation and engagement

These themes are consistent with the findings of the community survey (Appendix A), where multiple concerns were frequently identified by respondents and 80.3% selected “All of the above”, indicating cumulative concern.

F.3 Representative Community Statements

The following statements are indicative of concerns raised by local residents:

“We are deeply concerned about the long-term impact on our environment and water supply, particularly given the sensitive karst geology in the area.”

“This is a quiet rural community and not a suitable location for industrial development of this scale.”

“The scale and nature of the proposed development are completely out of character with the surrounding area.”

“We are concerned about the potential health impacts for our families, particularly in relation to air quality and emissions.”

“The increase in traffic on narrow rural roads will create serious safety risks, especially for children and agricultural vehicles.”

“There is a real concern that once this development is approved, it will set a precedent for further industrialisation of the area.”

“As a farmer, I am concerned about the impact on agricultural land, water quality and daily farm operations. Increased traffic, potential contamination risks and the loss of rural character will directly affect farming activity and the long-term viability of the land.”

“There is significant uncertainty about how often the plant will operate and what fuels will be used over its lifetime. While described as a peaker plant, there is concern that it could operate more frequently than expected. The potential use of diesel and operation extending to 2050 raises concerns about long-term emissions and environmental impact.”

F.4 Community Engagement Observations

Community engagement to date indicates:

• a high level of concern and opposition
• a lack of confidence in the consultation process
• a perception that key concerns have not been addressed

These observations are reinforced by:

• the scale of survey responses (Appendix A)
• the number of signatories to petitions (Appendix J)
• the consistency of concerns across individual submissions

The formation of a local opposition group further reflects the level of concern within the receiving community.

F.5 Context and Relationship to Main Assessment

The concerns outlined in this appendix are presented as representative statements of community views.

These observations are considered alongside the technical assessment set out in the main body of this submission, including:

• Chapter 3 – Environmental Impact Assessment and Technical Review
• Chapter 4 – Policy, Climate and Legal Compliance
• Chapter 5 – Community Engagement and Impact

F.6 Conclusion

The statements included in this appendix demonstrate a consistent and recurring pattern of concern among members of the local community in relation to the proposed development.

When considered alongside the quantitative survey results (Appendix A) and the scale of organised opposition (Appendix J), these qualitative observations provide strong supporting evidence of widespread and sustained community concern.

Appendix G - Public Submission – Cashla Peaker Plant

This appendix includes a public submission challenging the necessity and efficiency of the proposed Cashla Peaker Plant, particularly in the context of wind energy performance and emissions.

Source: Submission by John Dooley to An Coimisiún Pleanála regarding the Cashla Peaker Plant (ACP-324113-26).

To
An Coimisiun Pleanala
64 Marlborough Square
Dublin 1
D01V902

Friday 27 March 2026

John Dooley
6 Riverchapel
Bank Riverchapel

Ardmine
Courtown
Co,Wexford
y25FF99

Dear Sir/Madam

I would like to make an observation on the application for S.I.D.(Strategic Infrastructure Development) for the Casla Peaker Plant ,ACP - 324113-26 , a dual use electricity generation plant .

Which os to be used on a "TIME- LIMITED BASIS ONLY, WITH AN OPERATIONAL LIFE UP TO AND

INCLUDING 31 DECEMBER 2050". Open Cycle Gas Plants are typically half as efficient at 30% and EMITS twice the CO2 EMISSIONS as a combined cycle gas plant. So to prevent CO2 Emissions from increasing significantly it is key that these Peaker Plant, ie Open Cycle Gas Plants, operating on an extremely limited time basis. However given the operational characteristics of the currently installed onshore Wind farms. Also given the future negative impact of increasing onshore wind turbine in Ireland further reduction in capacity factors due to the over extraction of kinetic energy from the wind. Wind Energy production from wind As set out in the conclusion of research on the output of wind turbines in Kansas called "Two methods for estimating limits to large -scale wind energy generation ". Even without a detailed analysis of current total output analysis the claim that this "Peaker Plant will operate on a TIME-LIMITED BASIS ONLY " would have to be taken with more than pinch of salt. The FACT

is that the current installed capacity of wind generation is extremely INEFFICIENT and spends quite a significant periods of time producing between less than 5MW and between 150 and 200MW. In reality a Peaker Plant is a concept from Green Mythology or Propaganda.

Examples of Real Wind Energy Actual Output

Examples of Wind Output supplied to the Grid for the period 1st of January 2025 until 31st of July 2025 and the % of the observed time it was supplied.

On 198 occasions of which on 5 occasions output was between 0 and 5 MW , at 15 minutes intervals ,49.5 hours or 2.0625 days the total of 4309MW installed produced 50 MW Assuming **80%** of peak output is 4000MW the

capacity required to achieve target 4000MW/50MW* 4309= 344,720 MW capacity for

0.97311% of the available time

On 385 occasions ,at 15 minute intervals, or 96.25 hours or 4.01041 days the grid produced 100MW . Assuming **80%** of peak output is 4000MW . The capacity required to achieve the target is 4000/100*4309=172,360MW capacity for **1.89%** of the available time

On 685 occasions , or 171,25 hrs or 7.1354 days the grid produced 150MW. Assuming

80% of peak demand is 4000MW The capacity required to achieve the target

400/150*4309 =113,906.664MW capacity for **3.366%** of the available time

On 750 occasions , 187.5 hrs or 7.82 Days it produced 200MW. Assuming **80%** of peak demand is 4000 MW. The capacity required to achieve the target is 4000/200*4309 = 86,180 MW capacity for **3.686%** of the available time

On 645 occasions,,161.25 hrs or 6.871875 Days it produced 250MW.Assuming **80%** of peak demand is 4000MW. The Capacity required to to achieve target is 4000/250*4309 = 68,8926 MW capacity for **3.170%** of the available time

On 654 occasions,, 163.5 hrs or 6.825 Days it produced 300MW . Assuming **80%** of peak demand is 4000MW . The capacity required . The capacity required to achieve target is 4000/300*4309=57,440MW capacity for **3.214%** of the available time

On 309 occasions . 77.25 hrs or 3.21 Days it produced 1500MW. Assuming **80%** of peak demand is 4000MW. The capacity required to achieve target is 4000/1500*4309= 11,488 MW capacity for **1.51%** of the available time

Output up to 3,900MW occurred 5 times. Given that the data is sampled the duration pf this output was 1.25 hrs or for .05208 Days or 5 occasions of the total output observations logged 20347 or **.02457%** of the period observed. At this level of output level you would need 4,419 ,48mw to achieve targeted grid penetration of 80%. But given the current data observations this only likely to happen 3 hours or less per year. 4419

MW capacity for **.02457%** of the available time

It is very unlikely ,even allowing for year to year variation, that the low output for the periods indicated will change significantly no matter how much onshore capacity is commissioned to the grid.

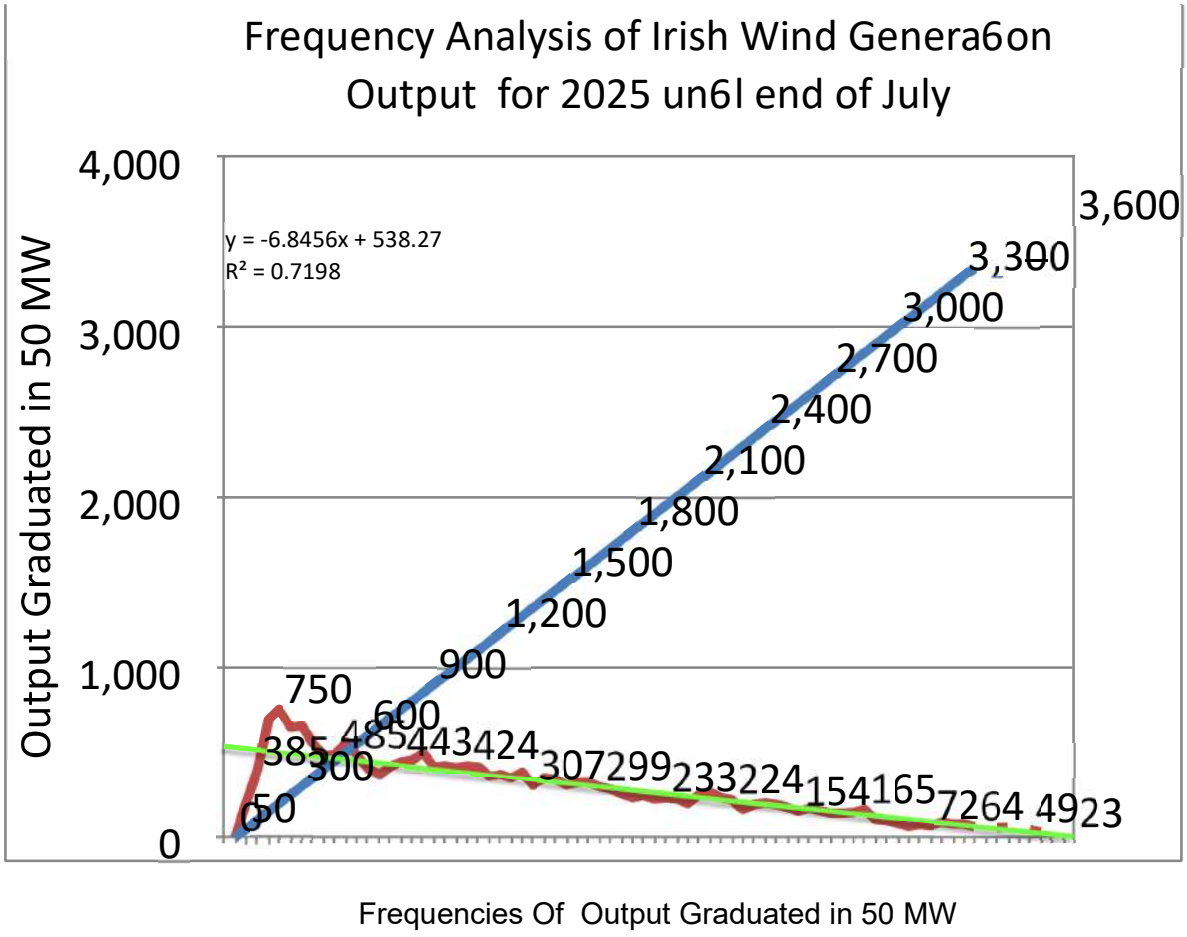
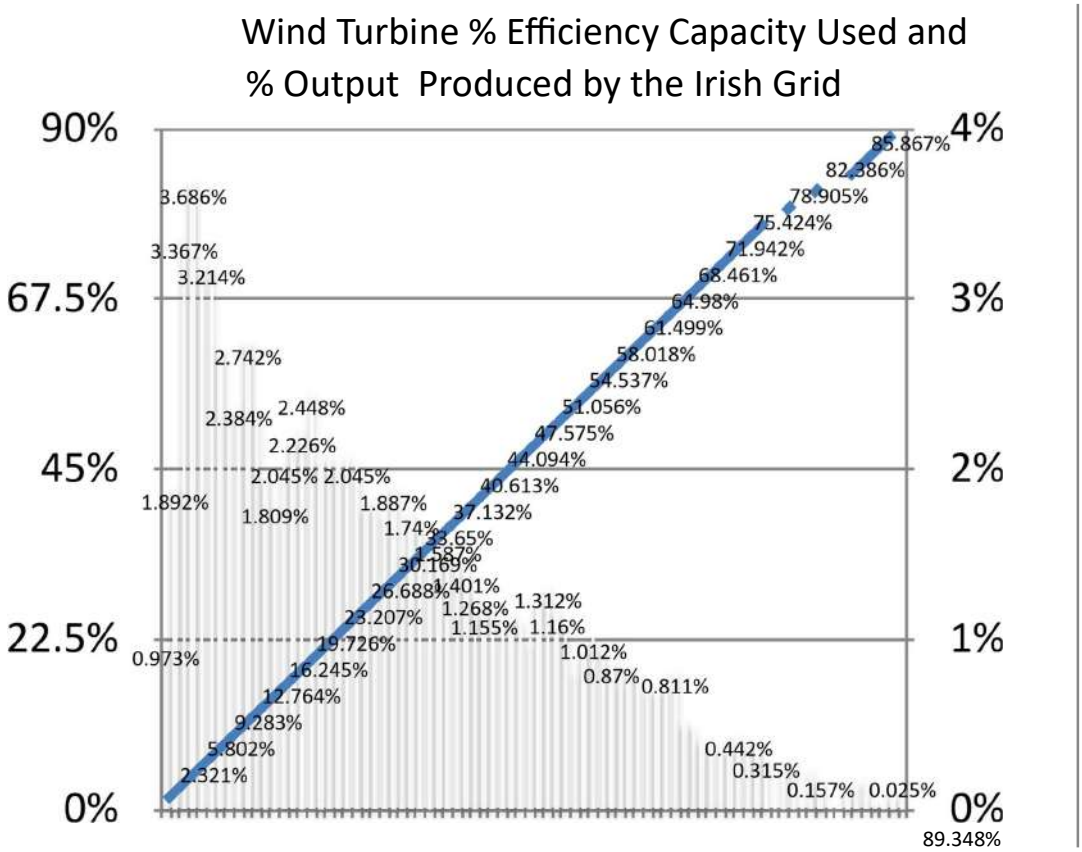


Fig 1, Frequency Analysis of the outputs, for the period 1/1/25 until 7/31/25 , of Wind Generation of the Irish Grid. As output increased its frequency decreased. t is possible to use the Trend Line,Y=-6.8456x+538.27, to predict

the likely output of additional added capacity . To achieve significant increases from adding wind turbine capacity a significant improvement in the output profile observed will have to be achieved. In other words higher wind speeds would be required throughout the year.

A casual observation of a Frequency Analysis(an observation every 15 minutes or 4 per hour) of actual data From Eirgrids Smart Dashboard informs you that the most frequent output of the commissioned wind energy capacity is of low or very low output. The highest output Frequency out put from 1 January 2025 until the end of July 2025) is 200MW or at 4% the installed capacity . Assuming an installed functional capacity of 4419.0MW. But with significant output 198 occasions output as low as 50MW being produced .



The Higher The % of Time Output is Produced The Lower the Efficiency of the Capacity Used . The Higher the % Efficiency of the Capacity used the Lower % of Time OutPut is Produced

Fig 2, This graph proves that wind turbines are a very inefficient way to produce electricity.Most of the output is produced when the machine is operating at low to very low very low levels of operational efficiency. Those who promote wind energy tend to ignore this reality. Any increase in capacity will produce a significant amount of output at extremely low levels of operational efficiency. To achieve significant output increases you will have add a massive amount of capacity which most the time will produce output at very low % of wind turbine operating efficiency

Current Peak Demand for electricity in Ireland is circa 5000MW high(close to 80% of Peak Demand) wind energy output occurs at approximately 2% of the time. If off-peak output was included it might reach 4% of the time. There is no available evidence that currently commissioned synchronous plant cannot supply any very infrequent small shortages in output this Peaker Plant is intended to supply. If the grid were short output such small amounts of electricity required could be supplied by currently installed diesel generation like those in Mount Lucas. During periods of high pressure or low wind speeds there will be almost no wind output that approaches peak demand.The incentive to operate these so-called Peaker Plants in reality are extremely inefficient high CO2 emission sources. Open Cycle Gas plants will be great therefore increasing our CO2 emission targets the failure to achieve will saddle us with massive financial fines. So is this Peaker Plant, An Open Cycle Gas Plant ,a Strategic Infrastructure Development it is not as given the actual production profile of wind energy output in Ireland available diesel generation capacity could supply any very infrequent shortages in electricity supply. If this ill perceived investment is given the go ahead it should be on the basis of an annual maximin stated operating hours with an actually stated annual maximum of strict limitations on CO2 emissions allowed. If this so-called Peaker Plant is built its should be clear to the developers that any incentive that would be available to generate on the extensive periods when wind generation is inadequate to supply demand this particular Peaker CANNOT be used to meet shortages in supplying electricity when wind generation is inadequate. It would be better this Peaker Plant not be built at all as current commissioned diesel capacity would supply such small and extremely rare shortages in electricity supply.It is virtually impossible that investments, such as this, will recover any capital or other costs involved it its construction. It is not a standalone(excluding subsidies) solvent investment.

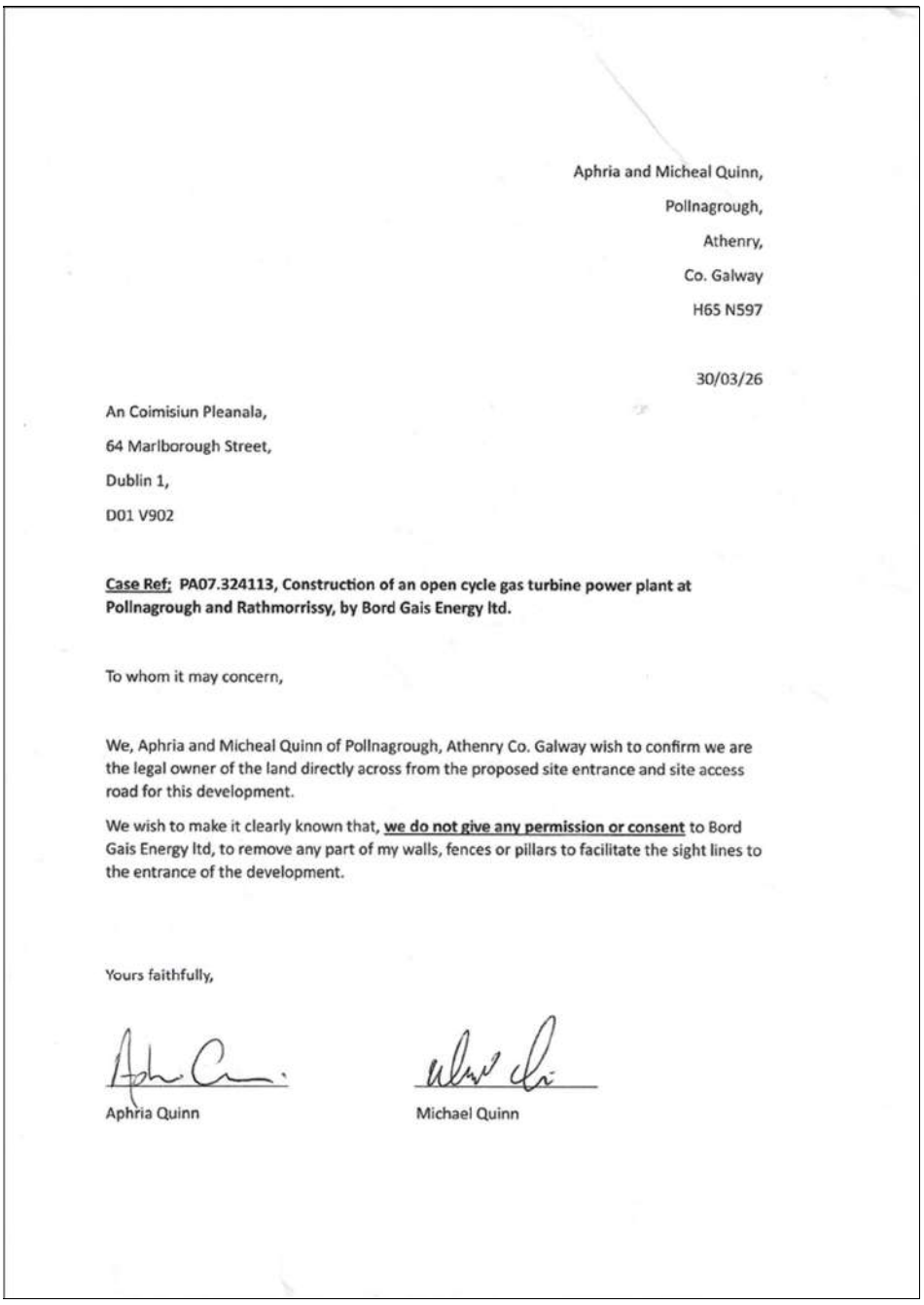
John Dooley

Appendix H Documentation of Third-Party Landowner Non-Consent (Visibility Splays)

The documentation included sets out the position of relevant landowners in respect of lands potentially required to achieve the necessary sightlines. These materials are provided to support and substantiate the matters raised in the main body of this submission.

Appendix H1 – Consent Letter Aphria and Michael Quinn

Legal owners of lands opposite the proposed access road



Aphria and Micheal Quinn,
Pollnagrough,
Athenry,
Co. Galway
H65 N597

30/03/26

An Coimisiun Pleanala,
64 Marlborough Street,
Dublin 1,
D01 V902

Case Ref: PA07.324113, Construction of an open cycle gas turbine power plant at Pollnagrough and Rathmorrissy, by Bord Gais Energy ltd.

To whom it may concern,

We, Aphria and Micheal Quinn of Pollnagrough, Athenry Co. Galway wish to confirm we are the legal owner of the land directly across from the proposed site entrance and site access road for this development.

We wish to make it clearly known that, **we do not give any permission or consent** to Bord Gais Energy ltd, to remove any part of my walls, fences or pillars to facilitate the sight lines to the entrance of the development.

Yours faithfully,

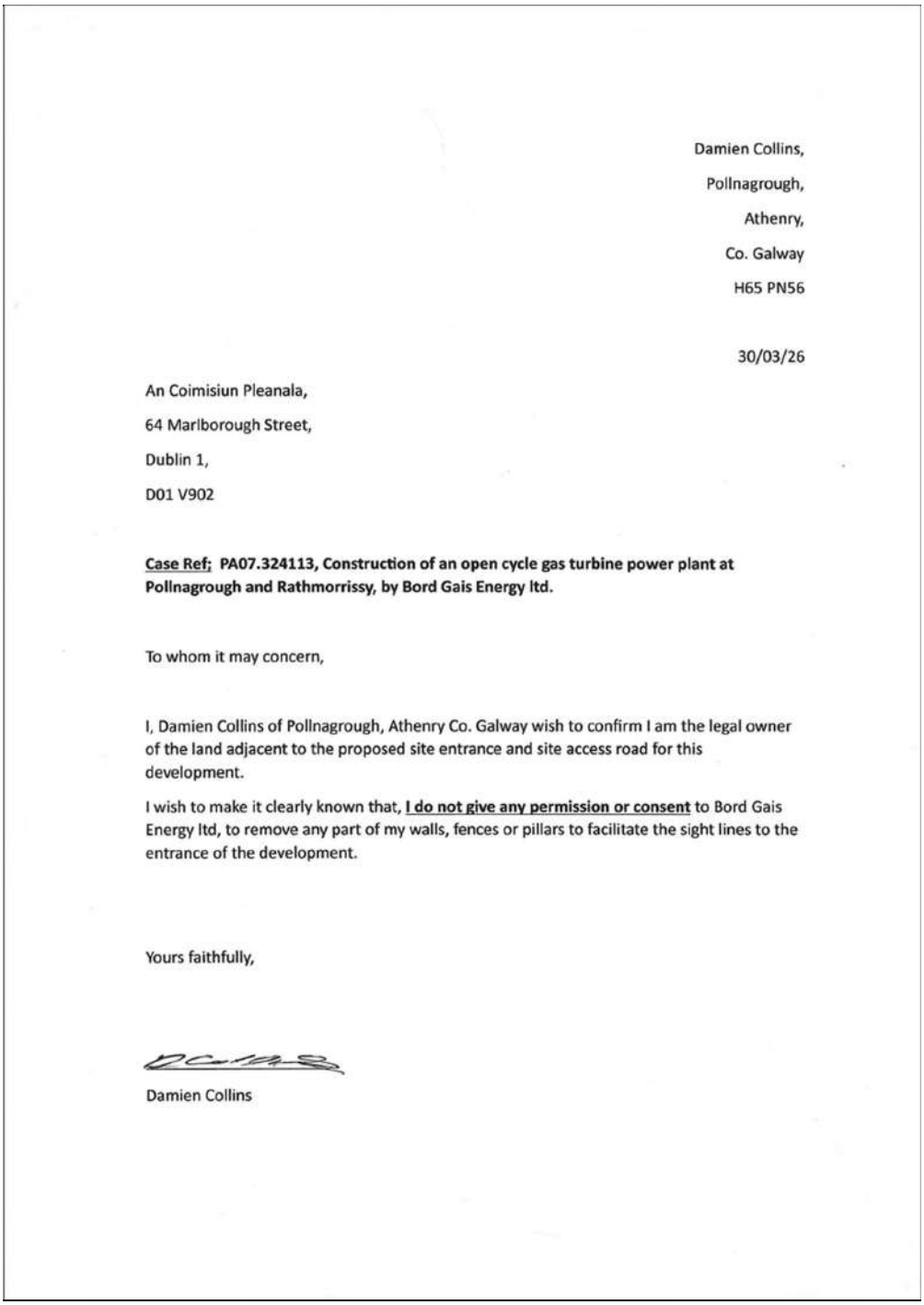
Aphria Quinn

Michael Quinn

Appendix H2 – Consent Letter Damien Collins

Legal owner of lands and residence adjacent to the proposed access road

The entrance to this residence is located directly beside the proposed access and is marked by distinctive entrance pillars serving a dwelling of over 100 years in age.



Damien Collins,
Pollnagrough,
Athenry,
Co. Galway
H65 PN56

30/03/26

An Coimisiun Pleanala,
64 Marlborough Street,
Dublin 1,
D01 V902

Case Ref; PA07.324113, Construction of an open cycle gas turbine power plant at Pollnagrough and Rathmorrissy, by Bord Gais Energy ltd.

To whom it may concern,

I, Damien Collins of Pollnagrough, Athenry Co. Galway wish to confirm I am the legal owner of the land adjacent to the proposed site entrance and site access road for this development.

I wish to make it clearly known that, **I do not give any permission or consent** to Bord Gais Energy ltd, to remove any part of my walls, fences or pillars to facilitate the sight lines to the entrance of the development.

Yours faithfully,

Damien Collins

Appendix I – Athenry Town Centre First Plan (Heritage, Setting and Landscape Context)

I.1 Introduction

This appendix provides extracts from the *Athenry Town Centre First Plan* (Galway County Council) relevant to the assessment of cultural heritage, archaeological context, and the relationship between Athenry and its surrounding rural landscape.

The purpose of this appendix is to demonstrate that:

- Athenry is a **heritage town of recognised significance**
- Its cultural value extends beyond the town core into the **surrounding rural hinterland**
- Heritage is intrinsically linked to **landscape setting and character**
- Planning policy requires protection of **both heritage assets and their setting**

These matters are directly relevant to the assessment set out in Chapter 3.16.

I.2 Heritage Significance of Athenry

The Town Centre First Plan identifies Athenry as:

"one of the best preserved medieval market towns in Ireland" (p.18)

It further confirms:

"Athenry is one of the best-preserved medieval towns in Ireland… Today, Athenry is celebrated for its medieval architecture, castle, and walls, attracting tourists and historians…" (p.21)

These statements demonstrate that Athenry possesses:

- **national-level heritage significance**
- a strong **medieval identity and continuity**
- an established role as a **heritage and tourism destination**

I.3 Relationship with Rural Hinterland

The Plan explicitly identifies the relationship between the town and its wider landscape:

"Athenry town serves a rural hinterland…" (p.18)

"The town is set within agricultural hinterland…" (p.17)

This confirms that:

- Athenry's heritage value is not confined to the built town centre
- The surrounding rural landscape forms part of its **cultural and historical context**
- The relationship between settlement and agriculture is a defining characteristic

This is directly relevant to the assessment of development located outside the town core.

I.4 Heritage and Tourism Function

The Plan highlights the importance of heritage in supporting tourism:

"The town has a historic past, showcased by its leading visitor attraction – Athenry Castle… Athenry has the potential to attract a lot of visitors…" (p.17)

This demonstrates that:

- Cultural heritage contributes to the **local economy**
- The **visitor experience** depends on the character and setting of the town
- The wider landscape plays a role in shaping perception of the heritage resource

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I.5 Historic Form and Landscape Context

The Plan describes the structure of the town as:

"The urban form of Athenry stems from its medieval fabric… numerous medieval buildings and features remain… within the historic town walls and the 'compact' town centre." (p.16)

It also identifies:

- a **compact historic core**
- surrounding **agricultural land and open landscape**
- a relationship between **historic settlement and rural hinterland**

This reinforces the importance of:

- **setting and landscape context**
- visual and spatial relationships
- continuity between town and countryside

I.6 Policy Protection of Heritage and Setting

The Plan references policies within the Athenry Local Area Plan:

"Policy ASP 39… seeks to ensure the protection… together with the integrity of their character and setting." (p.23)

"Policy ASP 40… seeks to protect, conserve and enhance… the character… respecting… setting of the Architectural Conservation Areas." (p.23)

These policies confirm that:

- Protection extends beyond physical structures
- **Setting and visual amenity are explicitly protected**
- Development must be assessed in terms of its **impact on heritage context**

I.7 Relevance to Cultural Heritage Assessment

The extracts presented above demonstrate that:

- Athenry's heritage significance is **recognised in statutory planning policy**
- The town is functionally and historically linked to its **rural hinterland**
- Cultural heritage includes:
    - built monuments
    - landscape setting
    - historic land use patterns

Accordingly:

- Heritage impact cannot be assessed solely on **distance or visibility**
- Development within the surrounding landscape has the potential to affect:
    - **setting**
    - **character**
    - **perception of heritage assets**

I.8 Conclusion

The Athenry Town Centre First Plan establishes that:

- Athenry is a **heritage town of national importance**
- Its cultural value is intrinsically linked to its **surrounding landscape**
- Planning policy requires protection of **heritage assets and their setting**

These findings support the conclusions set out in Chapter 3.16 that:

- the EIAR adopts an overly narrow interpretation of cultural heritage
- the wider cultural landscape has not been adequately assessed
- potential impacts on heritage setting and context cannot be excluded

In this context, the introduction of large-scale industrial development within the rural hinterland of Athenry has the potential to alter landscape character and weaken the relationship between the town and its surrounding agricultural setting. This is inconsistent with the objectives of the Athenry Town Centre First Plan and the Galway County Development Plan, which seek to protect cultural heritage, landscape character and historic context.

APPENDIX J – PETITIONS AND COLLECTIVE SUBMISSIONS

J.1 Introduction

This appendix contains petitions submitted in relation to the proposed Cashla Peaker Plant development.

These petitions comprise lists of signatories formally objecting to the proposed development and provide quantitative evidence of the scale of community opposition.

This appendix should be read in conjunction with:

• Appendix A – Community Survey Results (1,056 responses as of 23rd April 2026)
• Appendix F – Community Statements and Observations (individual submissions)

J.2 Summary of Petitions

The following petitions have been submitted:

Date Submitted.	Name
09/03/2025 13:28	Brendan kelly
09/04/2025 00:27	Brigid McGowan
6/21/2025 20:57:48	Kathleen Kelly
6/19/2025 13:28:02	Kelly gathering committee
09/03/2025 15:29	Aaron Mc Manamon
6/20/2025 8:16:05	Adam Leadbetter
6/23/2025 22:03:58	Adrian O'Boyle
6/22/2025 10:52:37	Agnieszka Kubielas
09/04/2025 11:41	Agnieszka Sewerynska

6/23/2025 20:18:53	Aidan Kelly
09/04/2025 21:32	Aidan O’Driscoll
09/03/2025 17:54	Aidan O'Reilly
6/19/2025 18:39:31	Ailbhe cousins
09/05/2025 11:48	Ailbhe Galvin
09/03/2025 21:53	aine o'donoghue
09/04/2025 14:36	Aine Ryan
09/06/2025 23:50	Aishling norton
8/27/2025 12:05:23	Aisling
09/04/2025 21:53	Aisling Hynes
09/03/2025 17:51	Aisling Gannon
6/27/2025 8:25:37	Aisling Griffin
6/25/2025 18:22:29	Aisling Kavanagh
09/04/2025 07:16	Aisling Kavanagh
09/03/2025 19:19	Aisling Murphy
09/03/2025 12:15	Aislinn Coll
6/19/2025 22:31:51	Alan Coyle
09/04/2025 21:48	Alan Croke
09/03/2025 12:13	Alan Hennigan
8/20/2025 22:22:55	Alan McGuinn
09/05/2025 21:03	Alan McGuinn
8/13/2025 11:25:07	Alan Murray

6/25/2025 7:18:14	Alana Collins
09/12/2025 13:31	Alanna Hayes
6/22/2025 20:42:25	Amie Brennan
09/03/2025 11:10	Amita Sawant
07/06/2025 14:34	Amy Fahy
10/13/2025 12:27:12	Amy McGregor
09/03/2025 21:17	Amy Moore
8/13/2025 21:38:23	Ana Beatriz de Melo Brito
09/05/2025 00:02	Ana Fernández Navarro
09/06/2025 16:07	Andrea Feeney
09/05/2025 15:18	Andrew O'Dowd
6/19/2025 19:40:21	Anetta Roche
09/05/2025 11:42	Angela Pike-Megraw
9/21/2025 17:50:12	Ania Wrobel
8/27/2025 12:22:35	Anita Burke
6/19/2025 18:06:50	Anita Dillon
09/04/2025 07:55	Anita Duane
09/04/2025 10:03	Anita Gaffney
09/04/2025 12:00	Ann and Joe Burke
8/26/2025 21:53:51	Ann barnett

6/19/2025 17:29:38	Ann Cleary
09/03/2025 19:07	Ann Connell
09/03/2025 18:51	Ann Dpsey
09/05/2025 12:40	Ann Morrissey
8/31/2025 9:16:43	Ann Potter
09/04/2025 11:14	Ann reid
07/11/2025 21:54	Ann Rooney
09/04/2025 17:34	Anna Marie Coyle
8/28/2025 19:45:12	Anna Pelczynska
9/21/2025 13:37:04	Anna Pelczynska
08/08/2025 17:40	Anna Szczesny
08/08/2025 17:41	Anna Szczesny
07/02/2025 08:31	Anne Cavanagh
6/19/2025 17:54:26	Anne forde
6/22/2025 13:59:42	Anne higgins
9/13/2025 20:36:34	Anne ingelbach
09/04/2025 11:25	Anne kelly
6/19/2025 13:23:51	Anne Kelly
6/19/2025 17:56:01	Anne Marie Freeney
09/03/2025 18:45	Anne Monaghan

6/23/2025 22:04:20	Anne OBoyle
07/01/2025 15:33	Anne Zonenblick
6/19/2025 20:54:38	Annette Kelly
6/23/2025 22:10:43	Annie Claffey
6/19/2025 17:38:56	Annmarie Hyland
09/03/2025 07:20	Annmarie Hyland
09/03/2025 09:27	Annmarie Kelly Hyland
09/03/2025 14:51	Anton Tsernjavski
09/05/2025 16:39	Aoife casey
6/19/2025 22:16:21	Aoife Fitzgerald
09/03/2025 17:52	Aoife McCabe
09/03/2025 19:42	Aoife Molloy
09/04/2025 08:17	Aoife O Brien
09/03/2025 17:46	Aoife O Grady
09/03/2025 18:10	Aoife O Neill
6/19/2025 13:41:50	Aphria Quinn
09/03/2025 13:58	Apife Kelly
09/03/2025 17:39	Archie Freeney
8/13/2025 11:03:35	Arlene Dooley
9/19/2025 15:04:29	Arun Lobidhas

09/03/2025 18:42	Ashling mcgrory
6/20/2025 7:11:09	Ashling Treacy
8/13/2025 22:37:25	Assumpta
09/04/2025 11:24	Assumpta kelly
6/19/2025 13:02:48	Assumpta Loughran
6/19/2025 18:27:40	Assumpta Cusack
6/19/2025 22:22:36	Assumpta Walsh
9/19/2025 18:27:20	Attracta Fitzpatrick
6/19/2025 14:02:33	Audrey Sheerin
09/03/2025 08:36	Audrey Sheerin
09/03/2025 17:48	Audrius Zukauskas
08/03/2025 15:47	Ava quinn
8/15/2025 10:27:31	Ava Quinn
09/06/2025 19:50	Avery Rowan
09/03/2025 18:46	Avril Caulfield
09/05/2025 11:29	Bairbre Nic an Iomaire
09/03/2025 14:48	Barbara Lipinska
09/03/2025 11:22	Becky East
09/05/2025 17:43	Bernard Megraw
9/27/2025 16:10:40	Bernie Dempsey
09/05/2025 19:19	Bernie Poniard

09/05/2025 17:01	Bernie Rooney
8/27/2025 7:58:32	Bohdan baran
6/24/2025 15:41:47	Breda Gardiner
09/05/2025 11:22	Breda Tarr
09/03/2025 09:13	Breda Whyte
09/04/2025 21:28	Brenda loughran
08/11/2025 21:46	Brendan Flaherty
09/03/2025 19:52	Brendan Flaherty
6/19/2025 20:47:36	Brendan O Reilly
09/03/2025 18:06	Brian Clancy
8/29/2025 20:14:41	Brian Commins
09/03/2025 17:37	Brian Farrell
09/05/2025 06:56	Brian Hyland
8/31/2025 15:45:52	Brian Leen
6/19/2025 21:07:11	Brian mcgroarty
09/03/2025 12:45	Brian Mitchell
09/03/2025 09:56	Bridget Geraghty
8/23/2025 17:31:17	Bridget Hancocks
6/20/2025 10:21:37	Bridie Brady
09/03/2025 13:06	Brigid kelly
09/03/2025 15:16	Bronisław Barnas

9/15/2025 13:54:49	Bruno Dias
09/03/2025 20:56	Cait flaherty
6/19/2025 16:46:43	Caitlin Hatton
8/28/2025 19:47:44	Caitriona Crehan
8/15/2025 21:24:27	Carmel Barrett
6/23/2025 18:45:04	Carmel Conway
09/06/2025 21:17	Carmel Gethin
6/20/2025 11:41:48	Carmel Kane
09/09/2025 13:55	Carmel McLoughlin
09/05/2025 22:08	Carol Quirke
6/19/2025 19:32:43	Caroline
6/19/2025 22:32:37	Caroline coffey
8/31/2025 9:22:21	Caroline coffey
09/03/2025 19:18	Caroline Conway
09/04/2025 21:07	Caroline Conway
6/19/2025 15:30:10	Caroline Freeney
09/03/2025 09:15	Caroline Gorton
09/03/2025 19:19	Caroline Harris
9/21/2025 21:00:02	Caroline Mc Garr

6/19/2025 16:54:08	Caroline McLaughlin
6/19/2025 17:38:37	Caroline McLoughlin
09/01/2025 09:17	Caroline McLoughlin
6/19/2025 15:56:51	Cathal Kelly
09/07/2025 14:38	Cathal Lally
09/06/2025 13:10	Cathal Rabbitte
09/04/2025 22:00	Catherine Arnold
6/19/2025 15:26:35	Catherine Joyce
6/19/2025 16:37:58	cathy keating
9/22/2025 10:04:21	cathy Vaughan
09/05/2025 23:57	Catriona Kelly
09/03/2025 22:10	Catriona Mahon
09/03/2025 12:40	Catriona Mitchell
09/05/2025 00:16	Cecilia kelly
09/05/2025 16:38	Charlie o'brien
09/05/2025 00:00	Charlotte Kennedy
8/28/2025 21:48:19	Cheryl donohoe
09/03/2025 18:47	Cheryl Winston
09/02/2025 16:11	Chetan Prehn
09/03/2025 14:59	Chris Bronowicki
08/11/2025 13:47	Christiane Flynn

8/25/2025 16:36:07	Christina Healy
8/18/2025 9:56:45	Ciara Byrne
09/04/2025 12:55	Ciara Coffey
9/13/2025 14:17:34	Ciara Coffey
09/03/2025 22:17	Ciara Mahon
09/03/2025 21:38	Ciara McCormack
09/05/2025 07:46	Ciara Morgan
09/06/2025 15:56	Ciara o roarke
09/03/2025 22:19	Ciara Ryan
07/12/2025 14:38	Ciara Stapleton
6/25/2025 9:47:37	Ciaran Coen
09/03/2025 18:43	Claire Courtney
6/20/2025 21:29:44	Claire Madden
09/03/2025 20:55	Claire Raleigh
6/24/2025 14:20:28	Clare McMahon
09/03/2025 11:03	Clare Monahan
6/19/2025 16:21:02	Clodagh Crimmins
09/03/2025 12:34	Clodagh Crimmins
09/07/2025 11:47	Clodagh Lally
6/19/2025 21:18:12	Clodagh Morley
09/05/2025 11:25	Colette Mangan
09/01/2025 10:25	COLIN DUANE

09/05/2025 19:30	Colin Gannon
9/13/2025 20:50:39	Colleen Baxter
8/26/2025 12:28:55	Colleen Loughnane
7/13/2025 15:16:56	Connie Fahy
9/13/2025 12:17:39	Connor Shine
6/19/2025 15:22:22	Conor Burke
8/29/2025 14:06:35	Conor Burke
8/29/2025 13:42:15	Conor Crehan
09/05/2025 09:12	Conor Crehan
8/26/2025 6:46:26	Conor Daly
09/04/2025 21:21	Conor Fahy
09/02/2025 22:54	Conor Kelly
6/22/2025 19:01:29	Conor O'Grady
09/03/2025 21:19	Corina Delaney
09/06/2025 11:47	Cormac Kelly
09/04/2025 14:59	Daena Nilan
09/04/2025 14:59	Daithí Nilan
6/19/2025 22:55:20	Damien Collins
8/29/2025 14:44:16	Damien Collins
09/03/2025 22:43	Damien Duane

09/03/2025 11:52	Damien Hennigan
09/03/2025 22:50	Damien Page
8/14/2025 12:16:31	Daniel Bane
8/17/2025 13:11:23	Daniel Chelchowski
6/24/2025 7:39:17	Daniel Donnelly
08/11/2025 22:24	Daniel Gallagher
8/31/2025 9:16:12	Daniel Healy
6/24/2025 16:03:02	Daniel Munroe
09/03/2025 19:03	Danika Rooney
6/19/2025 16:42:00	Darragh Burke
09/05/2025 00:14	Darragh Hayes
6/19/2025 20:10:25	Darragh Mc Nelis
6/19/2025 14:45:29	Darragh O'Neill
09/05/2025 09:42	Darren Collins
8/15/2025 8:14:10	Darren Madden
8/25/2025 16:37:59	Daryl Fahy
9/18/2025 10:07:35	David Burke
6/19/2025 23:24:03	David Curran
6/19/2025 19:06:35	David Dolan
09/03/2025 21:46	David Duane

6/21/2025 16:26:31	David Hanley
9/20/2025 12:12:12	David Hardie
8/27/2025 21:46:58	David McEvilly
09/04/2025 10:05	David Nilan
6/22/2025 9:33:19	David Poniard
09/03/2025 12:40	David Poniard
09/08/2025 09:49	David Ryan
09/04/2025 15:00	Davron Nilan
8/28/2025 19:15:23	Dawn Rafferty
09/06/2025 06:16	Deborah Lydon
09/03/2025 09:06	Deborah Manson
6/19/2025 15:04:09	Declan Kelly
8/29/2025 13:16:34	Declan Kelly
8/30/2025 19:37:01	Declan O'Hara
9/25/2025 20:24:06	Deirdre Gikk
6/19/2025 17:44:51	Deirdre Hynes
07/06/2025 20:53	Deirdre jelly
8/14/2025 9:46:55	Deirdre kelly
09/07/2025 07:49	Deirdre Leech
6/19/2025 17:15:38	Deirdre McGregor

6/22/2025 9:23:04	Deirdre Molloy
09/04/2025 12:13	Deirdre Monahan
09/03/2025 12:52	Denise Byrne
09/04/2025 16:29	Denise Donlon
9/28/2025 7:36:27	Derek Moroney
09/03/2025 11:01	Derek Tuite
09/04/2025 09:18	Dervilla Madden
09/06/2025 15:49	Dhana Ribbons
9/20/2025 20:26:33	Diana Szabo
09/03/2025 09:30	Diane Reilly
6/19/2025 14:25:01	Diarmaid McGregor
9/24/2025 8:02:22	Diego Romao da Silva
6/19/2025 22:36:23	Don O Niathain
8/25/2025 19:08:15	Donna Faĥy
09/03/2025 19:29	Donna Lane
9/29/2025 21:31:15	Donna Nedrick
09/03/2025 12:30	Donnacha Brennan
09/03/2025 22:48	Donnacha O'Mahony
09/05/2025 00:06	Donnacha O’Neill
09/03/2025 10:20	Dora
8/13/2025 18:32:38	Dora Fahy

10/13/2025 12:28:09	Dylan McGregor
09/03/2025 20:00	Dymphna McGrory
6/19/2025 15:49:53	Eamonn Maguire
09/03/2025 12:22	Edel Fallon
07/11/2025 21:43	Edel Gormally
6/24/2025 11:43:31	Edel Monahan
09/04/2025 11:55	Edel Monahan
8/17/2025 11:05:42	edith murphy
08/11/2025 20:57	Edward Coyne
6/20/2025 9:09:15	Edwina Treacy
09/07/2025 05:39	Eibhlin Kelly
09/03/2025 20:58	Eileen Freeney
09/03/2025 10:20	Eileen O Hanlon
6/22/2025 13:38:34	Eileen O'Donoghue
07/06/2025 19:32	Eilis Morrissey
8/19/2025 21:54:19	Eilish Murray
6/20/2025 10:21:03	Eimear Crawford
6/19/2025 16:14:36	Eimear McCarthy
09/03/2025 13:37	Eimear Mulkerrins
6/19/2025 16:22:57	Eimear Ruane

09/04/2025 07:47	Eithne Freeney
6/23/2025 17:23:51	Elaine Bennett
09/03/2025 21:43	Elaine kavanagh
8/31/2025 16:08:38	Elaine King
09/05/2025 21:58	Elaine Leavy
09/09/2025 11:08	Eleanor Linden
09/04/2025 05:57	Ella Keane
09/05/2025 10:51	Ellen caulfield
6/19/2025 13:32:42	Ellen Loughran
09/03/2025 13:23	Emer Cummins
6/22/2025 17:00:18	Emer Eagle
09/03/2025 08:15	Emma caulfield
09/03/2025 13:17	Emma Coyle
9/20/2025 12:11:34	Emma Hardie
6/23/2025 14:43:32	Emma Hogan
09/03/2025 12:16	Emma Rooney
09/03/2025 12:26	Emmett McDonagh
09/08/2025 11:18	Enda Morrissey
8/26/2025 20:51:08	Enda Trowell
6/23/2025 22:47:39	Eóghan Munroe

09/03/2025 09:42	Eoin McDonagh
09/04/2025 23:23	Eoin Quirke
8/29/2025 13:30:16	Eric Connolly
6/19/2025 17:01:28	Erin Maglione
09/04/2025 15:02	Eugene Quirke
6/24/2025 23:17:00	Ewa Opila
6/23/2025 17:11:27	Fergal Cronnelly
6/20/2025 8:58:18	Fia Coote
09/06/2025 15:53	Fiachna O'Brien
09/05/2025 00:11	Fidelma Ray
8/31/2025 15:34:20	Fiona Brannelly
6/21/2025 20:32:46	Fiona Cholar
6/19/2025 20:10:42	Fiona Joyce
6/19/2025 20:44:27	Fiona Murphy
09/03/2025 23:06	Fiona Sheridan
09/03/2025 21:17	Fionnuala Callanan
09/07/2025 11:14	Fionnuala Kelly
6/19/2025 19:26:33	Frances Mcdonagh
6/25/2025 9:46:13	Francis Curran
09/03/2025 18:57	Frank Burke

8/17/2025 7:49:14	Frank hynes.
09/03/2025 18:02	Frankie Burke
09/03/2025 14:35	G Gahan
09/03/2025 17:38	Gabriel Freeney
8/21/2025 8:54:02	Gaelan Goodfellow
9/19/2025 14:18:53	Gail
09/03/2025 11:38	Gary Coffey
09/05/2025 13:44	Gary Harrison
09/03/2025 16:26	Gary McCafferty
09/03/2025 08:24	Gearóid Harty
09/04/2025 17:47	Gemma O Connor
6/19/2025 21:52:17	Gerald Greene
09/04/2025 14:05	Gerald McGough
09/03/2025 21:02	Geraldine healy
6/19/2025 13:18:40	Geraldine Murray
8/29/2025 17:58:53	Geraldine Murray
09/03/2025 18:14	Geraldine Ward
6/19/2025 22:21:01	Geri hackett
6/23/2025 17:10:51	Gerry Cronnelly
09/04/2025 10:39	Gerry Higgins
6/27/2025 10:29:46	Gerry Kavanagh

09/04/2025 11:25	Gerry kelly
08/11/2025 08:46	Gerry tosh
09/03/2025 19:22	Giles Warrington
9/16/2025 10:15:45	Gillian Kelly & Matthew Ryan
09/02/2025 20:56	Gillian lally
8/17/2025 13:18:00	Giovana Melo
09/07/2025 09:26	Gitana Smal
9/18/2025 23:42:49	Grace Burke
09/01/2025 08:49	Grainne Engels
6/19/2025 18:02:12	Grainne mchugh
09/08/2025 22:39	Grzegorz
09/04/2025 11:42	Grzegorz Sewerynski
9/13/2025 8:27:30	Guilherme canto
6/24/2025 22:28:43	Hazel Mannion
6/21/2025 10:31:25	Heidi
8/13/2025 14:18:44	Helen and Niall Feeney
6/20/2025 9:25:22	Helen Feeney
8/29/2025 13:11:31	Helen Feeney
9/26/2025 20:47:33	Helen Gaffney
09/08/2025 08:33	Helen Harty

6/19/2025 16:38:39	Helen Mccallion
09/03/2025 20:29	Helen Moore
6/19/2025 19:00:01	Herinaina Rabarimanantsoa
09/01/2025 14:41	Hugh Courtney
09/08/2025 10:16	Hugo McGowan
6/20/2025 17:39:04	Ian Burke
09/08/2025 10:04	Ian Greally
09/05/2025 09:39	Ian murphy
8/18/2025 12:30:51	Ian O'Neill
09/04/2025 13:45	Ignatius o Brien
09/03/2025 08:54	Ingrid Corr
6/19/2025 17:38:31	Irene Judge
8/29/2025 13:59:07	Irene Shryane
08/11/2025 22:31	Isaac
09/03/2025 13:29	Ita farrell
6/24/2025 22:32:34	Jacinta Mcdonagh
09/03/2025 13:32	Jack Donohue
09/03/2025 22:22	Jack Feeney
6/19/2025 13:09:39	Jack mcgregor
6/20/2025 9:40:04	Jackie Gallagher
6/22/2025 11:33:47	Jacqueline Coen

8/26/2025 19:53:12	James Dunlea
8/31/2025 13:48:14	James Dunlea
8/31/2025 9:39:05	James Finn
09/03/2025 11:35	James redmond
8/22/2025 18:59:25	Jamie Cunningham
6/22/2025 18:46:46	Jane Walsh
08/10/2025 17:12	Jarlath Keane
08/11/2025 17:51	Jasmine McGhee
09/03/2025 12:13	Jason Coll
6/20/2025 12:59:32	Jason Cotter
9/18/2025 8:01:20	Jason Cotter
09/03/2025 15:50	Jelena Petrovic
09/03/2025 20:20	Jennifer Burke
09/03/2025 13:16	Jennifer Clancy
09/03/2025 09:13	Jennifer Flaherty
9/21/2025 9:22:28	Jennifer Healy
6/19/2025 18:58:12	Jenny Greene
6/19/2025 18:26:13	Jessica Loughran
09/03/2025 07:47	Jessica Loughran
09/03/2025 22:53	Jillian Ruane
9/16/2025 10:16:44	JJ & Geraldine Kelly
09/07/2025 13:29	Jo Coffey

07/06/2025 15:40	Joan Talbott curran
9/20/2025 18:13:46	Joanne Cullen
6/19/2025 19:09:24	Joanne Harte
6/21/2025 13:58:12	Joanne Hynes
09/03/2025 16:18	Joanne Madden
8/31/2025 19:37:43	Joanne Masterson
09/03/2025 14:58	Joanne Masterson
09/05/2025 21:34	Joe Canavan
09/09/2025 13:50	Joe Hennon
6/20/2025 11:09:27	Joe Jennings
09/07/2025 09:09	Joe Joer
09/04/2025 11:39	Joe-Ann Burke
6/19/2025 14:02:10	John caulfield
6/25/2025 18:53:59	John Eagle
09/03/2025 20:57	John Freeney
09/08/2025 08:34	John Hartu
08/11/2025 15:35	John Hynes
09/03/2025 10:15	John Kelly
09/03/2025 13:06	John kelly
6/19/2025 18:01:07	John Kennedy
09/03/2025 22:09	John McGrory

08/10/2025 11:04	John Molloy
8/25/2025 16:30:55	John Murphy
09/04/2025 12:16	Jonathan McGarry
9/20/2025 18:45:58	Jose Meyer
8/29/2025 13:12:22	Joseph Kelly
09/03/2025 19:59	Joseph McGrory
6/24/2025 9:14:20	Joseph O'Brien
6/21/2025 12:36:46	Josephine Hanley
09/04/2025 22:29	Joshua Wheeler
6/23/2025 6:40:37	Julianne Mary Hatton
09/04/2025 10:40	Julie Conlon
09/03/2025 22:31	Julie Cosgrove
08/11/2025 23:39	Justin Whyte
6/25/2025 8:30:39	Kamil Krolak
09/03/2025 18:59	Karen Cobey
09/03/2025 21:19	Karen Duane
8/29/2025 14:39:33	Karen hession
09/03/2025 23:04	Karen McGrory
6/19/2025 16:06:26	Karl Kavanagh
6/30/2025 11:20:33	Karla Byrne
09/04/2025 18:30	Karolina Cihanek

9/21/2025 10:26:36	Karolina Walorczyk
09/04/2025 20:10	Karrie Gibbons
07/04/2025 08:18	Kate Harvey
6/19/2025 16:37:35	Kate Wozniak
09/03/2025 21:39	Katelyn Duane
8/29/2025 13:10:58	Kathleen kelly
09/05/2025 10:29	Kathleen and Frank Duane.
8/25/2025 16:37:15	Kathy Gardiner
6/23/2025 22:43:48	Katie Munroe
09/03/2025 09:07	Katie Munroe
6/27/2025 0:25:52	Katie O'Neill
09/04/2025 07:28	Keelin Moore
09/05/2025 09:59	Keith Coffey
6/19/2025 22:00:43	Keith Fahy
09/03/2025 11:07	Keith Manson
6/20/2025 11:29:57	Kerry Bane
09/03/2025 08:36	Kerry Bane
09/03/2025 18:22	Kevin
6/19/2025 22:44:07	Kevin Burke
6/19/2025 21:37:10	Kevin Daly

6/19/2025 20:28:29	Kevin Galligan
09/05/2025 11:24	Kevin Griffin
09/03/2025 22:51	Kevin hough
6/21/2025 23:33:14	Kevin Kelly
6/19/2025 18:42:22	Kevin mcvicker
9/25/2025 11:12:09	Kevin woods
6/22/2025 2:00:43	Kevina Gill
6/19/2025 22:30:40	Kieran Coffey
09/05/2025 14:35	Kieran flannery
09/06/2025 15:40	Krista Olson
09/03/2025 12:40	Krzysztof Kalek
8/23/2025 13:17:30	Krzysztof Straszewski
09/04/2025 19:56	Lana Khorsheed
09/03/2025 18:58	Laura Donnellan
6/19/2025 15:49:13	Laura Eagle
6/22/2025 18:44:25	Laura Higgins
09/03/2025 22:41	Laura McInerney
07/07/2025 09:04	Laura O’Brien
09/03/2025 18:59	Laura O’Brien
09/03/2025 17:51	Laura Tamoseviciute

09/06/2025 07:45	Laura Walsh
09/05/2025 11:23	Lauren Gallon
6/19/2025 22:48:25	Lauren McGregor
6/19/2025 15:35:11	Laurence Smyth
6/19/2025 22:26:14	Laurie McCarrick
08/11/2025 10:12	Laurie McCarrick
6/24/2025 7:24:14	Leah Lavery
09/07/2025 13:23	Leo Coffey
09/03/2025 21:17	Leona Coffey
8/29/2025 22:49:19	Leonard Fay
09/05/2025 00:03	Lerato Dlamini
09/01/2025 09:29	Liam Carroll
09/03/2025 23:22	Liam Duggan
09/03/2025 17:46	Liam Gannon
09/12/2025 14:43	Liam Higgins
6/19/2025 16:14:54	Liam madden
6/22/2025 21:49:38	Liam Morris
6/19/2025 16:42:42	Liga Klavina
09/03/2025 10:36	Liga klavina
6/19/2025 17:27:19	Liliya Habchak
09/05/2025 12:14	Liliya Habchak

6/19/2025 18:01:49	Linda Romane
09/03/2025 19:29	Linda Seoighe
8/13/2025 16:05:43	Linto george
09/03/2025 21:27	Lisa Bailey
09/01/2025 09:00	Lisa Bonner
6/21/2025 19:23:06	Lisa Callanan
6/24/2025 22:34:41	Lisa Mitchell
8/21/2025 23:26:33	Lisa Mooney
09/03/2025 18:35	Lisa Rockall
8/28/2025 10:58:55	Liz
6/19/2025 18:09:00	Liz ward
09/03/2025 20:14	Lois Branch
8/16/2025 9:18:17	Lorna Gilmartin
6/19/2025 23:21:29	Lorna Hannon
09/03/2025 17:56	Lorraine Burke
09/03/2025 22:04	Lorraine Connolly
09/05/2025 10:12	Lorraine Cryan
09/03/2025 09:34	Lorraine Kelly
6/19/2025 17:32:18	Lorraine Kelly
6/20/2025 8:59:08	Lorraine McCarthy
09/06/2025 16:21	Lorraine Murphy

6/19/2025 16:52:34	Lottie Russell
07/07/2025 15:32	Louie Whelan
09/03/2025 18:13	Louie whelan
09/03/2025 17:35	Louise Guest
6/19/2025 15:25:22	Louise McClafferty
09/03/2025 19:46	Louise McClafferty
09/04/2025 16:35	Lucy Noble
6/24/2025 6:25:37	Luke Dargie
08/11/2025 16:38	Luke Marley
6/19/2025 18:55:47	Lynda Broderick
09/04/2025 11:56	Lynn Beattie
6/19/2025 20:54:01	Lynn Beattie
8/13/2025 22:43:51	M Ruane
6/19/2025 16:28:34	Maeve
08/10/2025 21:00	Mags Begley
08/11/2025 12:29	Maire Leader
09/07/2025 07:42	Maire Murphy
09/03/2025 18:58	Majella O'Donnell
6/23/2025 20:02:55	Malachy Conlon
6/19/2025 19:52:36	Malachy Keaveney
08/10/2025 13:21	Malachy Keaveney

09/03/2025 18:44	Mali kelly
09/01/2025 08:45	Malte Engels
09/12/2025 13:11	Marcel Simon
09/08/2025 09:30	Margaret
6/28/2025 11:59:38	Margaret Hannon
09/03/2025 15:58	Margaret & David Kelly
6/19/2025 22:54:26	Margaret Glynn
6/19/2025 22:56:45	Margaret Glynn
09/04/2025 21:16	Margaret Hannon
09/08/2025 21:27	Margaret Hannon
6/19/2025 19:44:49	Margaret Ruane
09/05/2025 11:30	Maria Treacy
6/19/2025 18:41:11	Marian gleeson
6/19/2025 22:36:18	Marian Glynn
6/19/2025 19:32:22	Marianne Brady
09/01/2025 09:27	Marie cronnelly
09/03/2025 17:59	Marie Dolan
6/19/2025 19:07:48	Marie flannery
09/03/2025 20:14	Marie flannery
09/03/2025 06:32	Marie Keane
6/20/2025 9:56:07	Marie Lovell
8/18/2025 9:14:41	Marie monahan

09/04/2025 16:21	Marie monahan
8/31/2025 9:29:47	Marion
6/25/2025 23:13:37	Marion Fahy
09/04/2025 14:56	Marion Quire
09/04/2025 21:19	Marita Morgan
8/30/2025 17:41:01	Mark Cook
09/03/2025 22:26	Mark Daly Williams
6/20/2025 22:30:46	Mark Hannon
6/19/2025 18:12:28	Mark Parsons
6/19/2025 17:19:24	Mark Shaw
8/31/2025 9:37:44	Mark Shaw
8/18/2025 6:46:44	Marlene Coss
09/03/2025 23:46	Marta baran
6/19/2025 17:57:08	Martha Clancy
09/03/2025 18:45	Martha Clancy
09/03/2025 13:28	Martha farrell
09/04/2025 21:05	Martha Fraser
09/05/2025 14:37	Martin Curran
6/25/2025 9:49:21	Martin Feeney
8/14/2025 12:15:41	Martina Bane
10/01/2025 22:39	Martina Collins
10/01/2025 22:38	Martina Collins

09/04/2025 08:42	Martina Higgins
6/19/2025 22:01:54	Martina Molloy
6/20/2025 9:43:30	Martina Mullane
09/03/2025 17:58	Martina T. Bane
6/22/2025 23:44:23	Martyn Weesjes
8/25/2025 19:46:59	Mary
07/11/2025 22:46	Mary Anglim
8/19/2025 21:44:15	Mary Brennan
8/18/2025 9:50:38	Mary Byrne
09/04/2025 12:17	Mary Byrne aw
6/23/2025 19:01:19	Mary Crowe
09/03/2025 09:04	Mary Crowe
09/04/2025 21:30	Mary Fahy
09/03/2025 19:40	Mary Flynn
09/08/2025 09:48	Mary Glynn
6/22/2025 20:26:27	Mary Larkin
09/03/2025 09:30	Mary mannion
6/21/2025 12:59:16	Mary McDonagh
6/25/2025 8:07:32	Mary Mcloughlib
09/03/2025 15:44	Mary Rabbitte
09/03/2025 22:27	Mary Rohan

8/25/2025 21:30:45	Mary Rooney
6/20/2025 15:59:11	Mary Ryan
09/03/2025 16:15	MaryClaire Doyle
09/03/2025 09:15	Maryrose Mc Gregor
6/19/2025 13:05:14	Maryrose McGregor
6/22/2025 10:04:30	Matthew kelly
09/03/2025 11:06	Matthew Linehan
6/23/2025 17:20:39	Maura Fahy
09/04/2025 22:07	Maura Ryan
6/19/2025 23:28:52	Maureen Devaney
09/06/2025 16:19	Maurice Callanan
09/05/2025 00:01	Méabh Cullen
6/21/2025 14:46:51	Melissa McGranaghan
08/03/2025 15:38	Melissa Ward
09/05/2025 20:03	Mia Hennigan
8/16/2025 9:16:11	Michael lyons
6/19/2025 21:59:59	Michael Brady
8/19/2025 21:42:47	Michael Brennan
09/04/2025 21:01	Michael Brennan
6/22/2025 17:35:05	Michael D'Arcy

8/29/2025 14:16:39	Michael Fahy
8/29/2025 14:18:15	Michael Fahy
8/29/2025 13:12:10	Michael freeney
8/25/2025 17:05:54	Michael O'Byrne
6/24/2025 7:42:41	Michael-John Devlin
6/19/2025 21:24:09	Michaela McNena
9/13/2025 20:32:45	Michal Petrus
09/02/2025 19:35	Micheàl Quinn
09/01/2025 09:20	Micheala o Gorman
6/23/2025 18:56:06	Michelle Casserly
6/19/2025 21:48:59	Michelle Fahy
09/03/2025 11:26	Michelle Hennigan
6/22/2025 14:00:47	Michelle Higgins
6/19/2025 14:25:05	Michelle Kelly
6/19/2025 15:22:41	Michelle McMahon
6/19/2025 16:40:08	Michelle Mead
6/20/2025 10:16:42	Michelle Morris
6/20/2025 18:04:59	Mike Carr

08/06/2025 18:29	Millie Kennedy
8/28/2025 19:41:23	Millie Kennedy
09/03/2025 10:03	Mimi La Farge
09/05/2025 10:33	Miriam Sheridan
08/08/2025 13:17	Moira Coen
6/23/2025 21:03:36	Monica Heffernan
6/19/2025 15:57:15	Monica Hennelly
6/19/2025 19:34:22	Monica Hennelly
09/04/2025 21:28	Monica Hennelly
8/29/2025 17:21:16	Monica Megraw
09/03/2025 20:38	Monika Kotecka
6/19/2025 17:23:37	Monika O’Driscoll
09/03/2025 19:05	Monika O’Driscoll
09/03/2025 17:39	Mr Patrick O'Brien
6/21/2025 12:59:51	Murt McDonagh
6/25/2025 9:43:44	Myles Connelly
08/11/2025 21:45	Na
09/03/2025 21:21	Nadine Keane
6/19/2025 17:38:19	Naomi Foy
8/29/2025 13:20:46	Naomi Foy

10/07/2025 13:51	Natasha loughnane
09/06/2025 21:32	Neil Gavin
9/24/2025 11:55:45	Neil Naughton
9/22/2025 7:11:00	Nele Uska
09/03/2025 19:08	Niall Dempsey
6/19/2025 22:10:13	Niall Murphy
6/19/2025 16:08:19	Niamh Boyle
9/27/2025 16:16:20	Niamh Dempsey Bergin
6/19/2025 16:19:20	Niamh Hoarty
09/03/2025 20:37	Niamh House
8/29/2025 16:00:24	Niamh McDermott
8/27/2025 8:35:41	Niamh Morrissey
6/19/2025 17:01:38	Niamh O Neill
6/19/2025 14:21:38	Niamh O'Donohoe
09/04/2025 08:10	Nico Strydom
09/04/2025 21:22	Nicola Fahy
9/19/2025 21:16:41	Nicola Heneghan
9/20/2025 18:42:01	Nicole Braun
09/04/2025 22:13	Nigel Fahy
6/20/2025 17:38:05	Niqll feeney

6/19/2025 17:10:00	Noel Kelly
8/31/2025 6:24:21	Noel Kelly
09/03/2025 12:56	Noel Kelly
09/03/2025 13:54	Nora Cullinane
09/05/2025 10:19	Norah Joyce
09/03/2025 09:20	Noreen Connolly
09/03/2025 12:58	Noreen Kelly
09/04/2025 11:31	Oisin Quirke
6/19/2025 13:57:49	Oliver Freeney
6/20/2025 11:51:28	Olivia Keogh
09/06/2025 13:01	Olivia Qualter
8/15/2025 21:30:35	Ollie Freeney
07/11/2025 23:27	Orla Farrell
6/20/2025 0:02:24	Orla Feeney
6/23/2025 20:30:55	Orla Gannon
09/03/2025 21:18	Orla Mckeogh
6/20/2025 19:39:32	Orla Mullaney
6/21/2025 7:45:33	Paddy galvin
09/04/2025 21:27	Paddy loughran
8/13/2025 11:44:45	Padraic
09/03/2025 11:12	Padraic Leader
6/24/2025 18:39:27	Padraic Quirke

8/22/2025 14:36:53	Panagiotis Papanikolaou
9/21/2025 8:56:26	Panagiotis Stamatialis
09/04/2025 20:51	Pat Hyland
09/04/2025 11:14	Pat loughran
8/29/2025 13:12:55	Pat Morrissey
09/03/2025 22:24	Patricia Cosgrove
07/11/2025 21:51	Patricia Flanagan
09/03/2025 11:10	Patricia Jaszay
09/07/2025 13:20	Patricia Kelly
09/04/2025 19:38	Patricia Ruane
09/03/2025 14:35	Patrick loughran
09/10/2025 21:21	Patrick Connolly
09/03/2025 13:21	Patrick Devally
6/19/2025 23:04:47	Patrick Hannon
09/08/2025 13:10	Patrick Hannon
09/03/2025 20:10	Patrick holland
09/04/2025 11:31	Patrick Loughran
8/29/2025 13:10:57	Patrick Quirke
09/04/2025 14:57	Patrick Quirke
6/19/2025 16:08:31	Paul
09/04/2025 12:17	Paul Church

09/03/2025 18:45	Paul Courtney
09/03/2025 12:48	Paul Eagle
09/03/2025 11:26	Paul Fitzgerald
09/05/2025 12:57	Paul Geraghty
09/03/2025 20:43	Paul greaney
08/11/2025 20:45	Paul Johnston
8/29/2025 15:25:50	Paul Madden
6/19/2025 22:03:02	Paul O Halloran
6/20/2025 9:15:26	Paula Cregg
09/03/2025 11:37	Paula redmond
6/24/2025 22:32:07	Paula RUANE
09/03/2025 10:17	Pauline Molloy
09/07/2025 08:33	Pavel Smal
09/03/2025 10:55	Pawel Grubiak
08/11/2025 21:47	Pawel Stasiak
09/08/2025 10:57	Peter kelly
8/29/2025 21:54:56	Peter Kennedy
8/27/2025 9:25:48	Peter Sullivan
07/12/2025 11:28	Rachael Farrell
09/04/2025 18:33	Rachael Williams Butler
09/03/2025 11:39	Rachel East
09/03/2025 09:54	Radoslaw Szczepaniak

9/25/2025 20:39:16	Ray Glasheen
09/03/2025 12:41	Ray Sweeney
09/05/2025 15:11	Ray Treacy
6/24/2025 0:00:23	Reagan O'Mahony
09/03/2025 12:58	Rebecca O Connor
6/19/2025 22:12:39	Regina Glynn
6/21/2025 10:59:12	Regina o 'donoghue
09/03/2025 08:32	Renee Feeney
09/03/2025 17:41	Reuben Freeney
09/03/2025 12:50	Richard Brady
09/03/2025 17:58	Richard Corrigan
6/22/2025 14:05:46	Rimington Folan
09/03/2025 23:34	Rita O'Flaherty
09/04/2025 22:35	Robert and Ruth Ruane
09/09/2025 20:17	Robert and Ruth Ruane
6/22/2025 10:48:29	Robert Cregg
09/05/2025 17:53	Rodrigo Almeida
08/11/2025 16:36	Roisin
08/11/2025 16:38	roisin murphy
6/23/2025 22:50:04	Roseanna Munroe
09/04/2025 12:39	Ross Keane
09/03/2025 17:38	Rowan

8/28/2025 17:34:34	Royston Girard
09/03/2025 10:41	Ruairí Kennedy
6/19/2025 17:09:03	Ruslan Boyko
8/27/2025 21:46:17	Ruta Graham
09/03/2025 09:52	Ruth Pokall
09/04/2025 18:59	Ryan McNelis
07/11/2025 21:17	Sacra Rooney
6/22/2025 10:52:58	Samantha Gill
09/03/2025 13:49	Samantha quinn
09/07/2025 12:55	Sandra Coffey
8/27/2025 14:59:15	Sandra Noone
09/03/2025 10:54	Saoirse Prehn
6/19/2025 20:37:12	Sarah
09/05/2025 15:39	Sarah Hennigan
6/19/2025 14:17:19	Sarah Quirke
09/04/2025 11:42	Sarah Silke
6/19/2025 19:56:20	Sarah treacy
9/23/2025 16:00:54	Scott Fitzgerald
09/03/2025 19:16	Seamie Courtney
09/03/2025 20:01	Seamus McGrory
09/03/2025 20:35	Sean

6/19/2025 21:34:23	Sean Freeney
8/14/2025 8:04:24	Sean Freeney
6/23/2025 22:45:28	Seán Munroe
6/23/2025 22:46:46	Seán Munroe
6/19/2025 20:20:40	Seanna O’Hara
8/13/2025 13:46:24	Seanna O’Hara
09/12/2025 17:39	Sebastián Zimmerman
8/28/2025 19:43:37	Senan Coffey
6/22/2025 16:23:43	Serena mathews
6/23/2025 20:51:39	Shane Duane
09/03/2025 10:34	Shane Gaughan
09/07/2025 11:16	Shane Lally
6/24/2025 20:44:38	Shane Spelman
6/19/2025 22:52:33	Sharon McNelis
09/03/2025 22:20	Sharon Nilan
09/03/2025 19:07	Sharon Rooney
09/03/2025 12:11	Shauna Coll
6/25/2025 12:47:23	Shauna Freeney
09/03/2025 17:37	Shauna Freeney

09/03/2025 20:00	Shay McGrory
09/03/2025 14:44	Sheila Cannon
09/03/2025 07:54	Sheila clarke
09/03/2025 07:51	Sheila clarke
8/29/2025 14:11:51	Sheila Healy
6/24/2025 20:32:35	Shraddha Prehn
9/14/2025 12:01:06	Sinéad Brady
6/20/2025 0:12:25	Sinéad Brady
6/19/2025 22:42:22	Sinead Burke
09/04/2025 14:04	Sinead Conneely
09/04/2025 15:23	Sinead Costello
9/26/2025 22:58:19	Sinéad Fahy
09/03/2025 17:38	Sinead Farrell
09/03/2025 21:55	Sinead Kelly
6/22/2025 9:19:02	Sinead McNea
09/03/2025 17:55	Sinead Murphy
8/31/2025 9:05:10	Sinead Slattery
8/14/2025 8:55:53	Siobhán Broderick
07/11/2025 20:52	Siobhan Fitzpatrick
09/04/2025 11:15	Siobhan mccab
8/31/2025 9:06:16	Siobhan Morrissey
09/05/2025 00:05	Síomha O'Rourke

9/18/2025 22:11:54	Skelly
09/03/2025 11:16	Sofia Bouziani
6/20/2025 6:10:53	Sonya Broderick
6/19/2025 20:58:19	Sophie McGroarty
09/12/2025 16:35	Sophie Weiser
09/03/2025 13:10	Stefani Crehan
8/29/2025 15:44:34	Stella Madden
6/20/2025 9:58:01	Stephanie Fahy
8/18/2025 20:12:42	Stephen feeney
08/11/2025 17:12	Stephen Macken
9/18/2025 8:56:03	Stephen Rooney
07/06/2025 19:28	Stephen Sullivan
6/24/2025 7:41:18	Stuart Bradford
09/04/2025 11:31	Sue Doherty
9/25/2025 16:50:21	Susan Eagle
07/12/2025 10:00	Susan Grealish
6/19/2025 13:26:46	Susan Morrissey
6/19/2025 19:13:01	Susan Murphy
09/03/2025 17:24	Susan Murphy
8/30/2025 17:20:24	Susanne Helberg
09/03/2025 20:35	Suzanne O Keeffe

8/18/2025 16:27:25	Suzanne ONeill
09/02/2025 18:51	Sylwia Karpik
09/05/2025 00:13	Tadhg Ó Néill
09/07/2025 08:54	Talia Smal
8/14/2025 12:15:07	Tammie Corrigan
09/03/2025 17:57	Tammie Corrigan
09/05/2025 00:04	Tara byrne
6/23/2025 22:30:27	Tara Fitzgerald
09/03/2025 17:07	Tara Fitzgerald
09/12/2025 15:02	Teresa Brady
09/05/2025 15:18	Teresa Coen
9/16/2025 18:05:57	Teresa Hannon
07/07/2025 09:54	Teresa Sheridan
8/29/2025 13:38:50	Teresa Sheridan
6/19/2025 20:46:34	Terry Nolan
6/20/2025 17:20:46	Tessa Jennings
09/03/2025 23:05	Therese O'Mahony
6/19/2025 13:26:57	Thomas & Kathleen Kelly
09/04/2025 08:33	Thomas Duane
6/23/2025 22:44:43	Thomas Munroe

09/05/2025 11:32	Thomas Sheridan
09/02/2025 21:54	Thora Freeney
6/19/2025 22:31:07	Tina Coyle
8/27/2025 15:00:24	Tom and Mary Ann Noone
6/19/2025 13:11:21	Tom Cannon
6/21/2025 22:51:38	Tom Joe Kelly
8/13/2025 16:19:09	Tom McGuinness
6/20/2025 21:22:24	Tom Ruane
09/03/2025 12:05	Tommy kelly
6/19/2025 16:47:57	Tommy Vaughan
09/03/2025 20:50	Tracy Rooney
09/04/2025 05:46	Treasa Byrne
6/22/2025 5:51:42	Triona Mc Mahon
6/20/2025 20:59:47	Trish Kavanagh
09/02/2025 20:56	Trish Martyn
8/29/2025 16:38:53	Una
09/04/2025 00:57	Una Mc Mahon
07/06/2025 18:15	Valerie Timlin
8/29/2025 13:11:22	Valerie Timlin
09/03/2025 09:01	Vanessa Phillips

6/23/2025 20:55:42	Veronica
09/03/2025 12:11	Vincent Madden
9/13/2025 16:00:09	Vincent O Brien
6/25/2025 19:18:32	Vivienne fallon
09/04/2025 19:23	Vsevolod
08/11/2025 21:27	Waqar Shahid Qureshi
6/19/2025 23:09:08	William Burke
7/15/2025 10:13:33	William Burke
6/20/2025 22:34:16	William Hannon
09/08/2025 08:49	William hannon
09/12/2025 14:25	William Higgins
9/21/2025 17:50:58	Wojtek Szczesny
09/03/2025 15:23	Yvonne Brannelly
6/21/2025 16:18:49	Yvonne McMahon
09/03/2025 08:24	Zoe Harty
10/13/2025 13:23:44	Niamh Naughton
10/13/2025 13:24:19	Breda Naughton
10/13/2025 13:24:34	Pat Naughton
10/13/2025 13:24:50	Cian Naughton

10/13/2025 13:25:04	Eoin Naughton
10/13/2025 13:25:22	Maddie Naughton
10/14/2025 21:20:56	Sharon
10/25/2025 10:10:56	Treasa Farragher
10/26/2025 10:33:59	Phil moore
10/28/2025 19:37:16	Caroline Gorton
10/28/2025 23:52:26	Donna Nedrick
10/29/2025 22:10:32	Lisa McMullin
11/02/2025 01:54	Tina roche
11/02/2025 01:57	Glenn mc cullough
11/03/2025 20:04	Keith Hansberry
11/03/2025 20:08	Dean McMahon
11/04/2025 21:36	Mark Hardiman
11/05/2025 21:03	Dhana Ribbons
11/06/2025 01:01	Madeline Plews
11/06/2025 15:30	Aisling courtney
11/06/2025 18:36	Ann Barnett
11/07/2025 22:48	Ross Connolly
11/09/2025 07:17	Fiachna O'Brien
11/24/2025 19:20:21	Jennifer Hall

11/24/2025 20:08:46	Teresa Collins
11/24/2025 21:18:52	Sarah Dillon
11/24/2025 21:23:13	Emmett Larkin
11/24/2025 21:27:22	John Cazabon
11/24/2025 21:27:57	Niamh larkin
11/24/2025 21:41:33	Aisling Meade
11/24/2025 22:13:41	Una Dillon
11/24/2025 23:08:45	Simon Ball
11/25/2025 1:53:49	Mary Cassidy
11/25/2025 6:06:33	Mark Hanley
11/25/2025 11:37:03	Ana Almeida
11/25/2025 11:59:14	Vanilda pereira accordi
11/25/2025 12:14:16	Rodrigo Almeida
11/25/2025 15:55:39	Wayne Fitzgerald
11/26/2025 12:41:22	Stephen Macken
11/26/2025 12:42:11	Marie-Therese Macken
11/26/2025 12:42:33	Emily Macken

11/26/2025 12:42:53	Juliette Macken
11/26/2025 21:00:59	Jill Benton
11/26/2025 22:38:08	Mandy Farrell
12/04/2025 21:42	Rachael Williams Butler
12/04/2025 21:43	Breeda Keohane
12/04/2025 21:48	Ann Potter
12/04/2025 21:56	Declan O'Hara
12/04/2025 21:57	Gillian Kelly
12/04/2025 21:58	Matthew Ryan
12/04/2025 21:58	Myles Murphy
12/04/2025 22:06	Mary O'Hara
12/04/2025 22:26	Stephen Sullivan
12/04/2025 22:37	Jason Cotter
12/04/2025 22:55	Teresa Sheridan
12/04/2025 23:37	Laura O’Brien
12/05/2025 05:45	Rebecca Palmer
12/05/2025 08:29	Fionan Direen
12/05/2025 09:25	Carmel Dempsey
12/05/2025 09:44	Marie monahan
12/05/2025 10:20	Attracta Fitzpatrick
12/05/2025 12:33	Rhys Fitzpatrick
12/05/2025 13:21	Gerry Nevin

12/05/2025 13:29	Carmel Moran
12/05/2025 18:48	Robert ruane
12/10/2025 18:36	Shauna Coll
12/10/2025 18:39	Conor Cannon
12/10/2025 19:26	John Coll
12/10/2025 19:54	Teresa Coll
12/10/2025 21:03	Rachael Drury
12/12/2025 21:26	Cheryl Winston
12/12/2025 21:27	Seamus Winston
12/13/2025 3:43:43	tommy fox
12/13/2025 8:58:56	Ailish Burke
01/07/2026 09:32	Sabina Cendrzak
01/07/2026 11:29	Eiranne Hannan
01/07/2026 11:31	Fiona Zarodova
01/07/2026 12:26	Heloisa Pimentel
02/10/2026 21:49	Yvonne Higgins
02/10/2026 22:04	Una higgins
02/10/2026 22:06	Renee feeney
02/10/2026 22:07	Liam Higgins
02/11/2026 08:07	Enda Morrissey
02/11/2026 20:30	Laura Preston Collins
02/11/2026 21:07	Jamie Collins
2/13/2026 11:08:12	shirley hanley

2/13/2026 12:18:49	Anita.solano
2/13/2026 21:02:08	Sinéad Brady
2/15/2026 12:14:08	Niamh O'Brien
2/18/2026 19:19:41	Carmel Collins
3/23/2026 10:06:48	Audrey Sheerin
3/24/2026 22:44:18	Edel glynn
3/30/2026 11:16:18	Cliodhna O’Dwyer
04/01/2026 15:06	Darach
04/01/2026 22:45	Maureen O'connor
04/01/2026 22:47	Chloe O'connor
04/01/2026 22:49	Padraig joseph O'connor
04/01/2026 22:50	Joseph O'connor
04/01/2026 22:51	Maureen O'connor
04/01/2026 22:53	Hannah O'connor
04/01/2026 22:54	Michaela snapp O'connor
04/01/2026 22:55	Jessica O'connor
04/09/2026 12:11	Emma madden
4/15/2026 13:13:59	Daryl Fahy
4/15/2026 19:24:18	Kenneth Higgins
4/15/2026 22:15:36	Joanne OConnor

4/15/2026 22:35:36	Kim somers
4/16/2026 14:08:17	Mary Daly
4/16/2026 14:30:04	Caitriona Crehan
4/16/2026 16:40:26	Kerry Bane
4/18/2026 10:44:57	John Stevens
4/19/2026 10:16:35	Kevin O Connor
4/19/2026 21:51:03	Michael ruane
4/20/2026 13:23:43	Maria O'Donnell
4/20/2026 15:42:25	Enda McGahon
4/20/2026 17:00:47	Keith Hansberry
4/21/2026 8:25:33	Alannah Haran
4/21/2026 8:25:46	Alannah Haran
4/21/2026 8:25:50	Alannah Haran
4/21/2026 8:27:01	Tadhg Haran
4/21/2026 16:37:01	Avril Harrison
4/22/2026 9:07:05	Nathan Hansberry
4/23/2026 6:37:24	Joe & Margaret Healy

The petitions collectively represent a significant number of individuals within the receiving environment and surrounding area who have formally objected to the proposed development.

J.3 Petition Documentation

Copies of the petitions are included below.

These comprise:

• lists of names of individuals objecting to the proposed development
• petition forms or compiled name lists
• summary pages confirming total numbers of signatories

Where petitions contain a large number of names, representative pages or summary extracts are provided.

J.4 Observations on Collective Response

The petitions demonstrate:

• a significant number of individuals formally objecting to the development
• an organised and coordinated level of community response
• consistency with concerns identified in survey results (Appendix A) and individual statements (Appendix F)

The scale of participation indicates that opposition to the proposed development extends beyond individual submissions and reflects a broader community position.

J.5 Conclusion

The petitions contained in this appendix provide clear and direct evidence of the scale of community opposition to the proposed development.

When considered alongside the survey results (Appendix A) and individual community statements (Appendix F), they reinforce the presence of widespread and sustained community concern.

FPLOGUE SOLICITORS

Our Reference: FPL/1045/03340
Your Reference:

22 April 2026

Re:	PA07.324113
Applicant:	Bord Gais Energy
Proposed Development:	Construction of an open-cycle gas turbine power plant, primarily fueled by Natural Gas, Above Ground Installation and ancillary development
Development address:	Pollnagroagh and Rathmorrissy (Townlands), Athenry, Co. Galway

A Chara

Introduction

1. I have set out in this letter a legal note in relation climate change and the EIAR.

2. In my view:

    a. The EIAR does not comply with Article 5 of the EIA Directive in relation to:

        i. Providing an accurate calculation of Greenhouse Gas Emissions
        ii. Providing information to determine whether the Commission can grant permission in compliance with its obligations under Section 15(1) of the Climate Action and Low Carbon Development Act 2015 (the **2015 Act**)
        iii. Providing sufficient details to assess proposed reasonable alternatives against those same obligations

    b. The proposed development is inconsistent with the matters set out in Section 15 of the 2015 Act or alternatively there is insufficient information to demonstrate consistency

    c. The proposed development cannot be considered sustainable development or environmentally sustainable in relation to climate change and therefore must be refused or alternatively it is a category of development for which the Paris Agreement and more detailed EU law does not encourage investment because it doesn't meet specific criteria in relation to climate change mitigation.

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3. While it is my view that permission ought to be refused, recent case law has held that even where planning permission is refused an EIA must nonetheless be carried out by the competent authority which means that the deficiencies in the EIAR must be addressed by the Commission regardless of the decision[1].

Background

4. The Proposed Project includes a gas fired power plant (named Cashla Peaker Plant), as well as the construction of an ESB substation compound within the Peaker Plant site, and associated infrastructure, the construction of approximately 8.1 kilometres (km) of an underground grid connection route and laying of cable from the proposed ESB Substation (in the Cashla Peaker Plant Site) to the Cashla 220 kV Substation, along the L7109, L71093, L7108 and 3103 roads.

5. The proposed Cashla Peaker Plant (herein referred to as the Peaker Plant) is in a greenfield site located in Pollnagroagh, Athenry, ca. 18 km east of Galway City and ca. 2 km west of Athenry. The proposed Peaker Plant site is positioned between the northern and eastern arms of the M6/M18 interchange

6. The EIAR Non-technical summary states:

> *The proposed Peaker Plant plays a critical role in this context. Rather than competing with renewable energy, it functions as an enabler of the net zero transition, providing fast-response capacity that facilitates renewable generation to be safely connected to the grid. By bridging periods of low renewable output, the facility ensures grid stability and prevents supply shortfalls, supporting the integration of renewable generation, and storage technologies.*
>
> *Within national policy documents, the need for flexible gas generation is recognised as a key part of the energy transition to net zero and for the purposes of energy security. The most recent Climate Action Plan (CAP 25) includes the delivery of at least 2 Gigawatts (GW) of New Flexible Gas Plant by 2030 as a national target alongside other renewable energy generation targets, recognising the role that flexible gas plants have to play in supporting a flexible and resilient electricity system. The Proposed Peaker Plant will help bridge this gap. The flexible nature of the plant means it can be turned on and off to react to fluctuations in renewable generation, by ramping up quickly to meet peak demand. The Cashla Peaker Plant is selected as open cycle as this configuration provides a much quicker response time to start up and begin generation. This fast response time is required to meet the rapid changes in the transmission grid electrical supply and demand imbalance. In terms of efficiency the combined cycle gas turbine is better and therefore once operating at maximum load will produce less emissions per megawatt (MW).*

Climate Action and Low Carbon Development Act 2015

7. Section 15(1) of the 2015 Act requires both Bord Gas Energy and An Coimisiún Pleanála (the "Commission") as relevant bodies to, in so far as practicable, perform their functions in a manner consistent with—

> (a) the most recent approved climate action plan,
> (b) the most recent approved national long term climate action strategy,
> (c) the most recent approved national adaptation framework and approved sectoral adaptation plans,
> (d) the furtherance of the national climate objective, and

[1] *Ventway v An Bord Pleanála* [2025] IEHC 406

(e) the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State.

8. These obligations are part of an interrelated suite of measures all aimed at furthering the National Climate Objective ("NCO") defined in Section 3(1) of the 2015 Act as requiring that "*the State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.*"

9. For the purposes of enabling the State to pursue and achieve the NCO the Minister is required to submit to the Government for Approval:

   (a) carbon budgets in accordance with sections 6B and 6D,

   (b) a sectoral emissions ceiling in accordance with section 6C,

   (c) a climate action plan in accordance with section 4,

   (d) a national long term climate action strategy in accordance with section 4, and

   (e) a national adaptation framework in accordance with section 5.

10. With Section 6A(1) Carbon Budgets must be consistent with furthering the achievement of the NCO and are prepared by the Climate Change Advisory Council (the **CCAC**), finalised by the Minister and Approved by the Government for successive five-year periods starting on 1 January 2021. At any one time there must be a carbon budget programme covering three successive five-year periods, with the budget for the third such period made in draft form (referred to as a "provisional carbon budget").

11. In preparing carbon budgets the CCAC shall

   (a) carry out its functions under [Section 6A] in a manner—

      (i) that is consistent with the ultimate objective specified in Article 2 of the United Nations Framework Convention on Climate Change done at New York on 9 May 1992 and the matters specified in subparagraphs (i) and (ii) of section 3(3)(a), and

      (ii) which takes account of—

         (I) the most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency,

         (II) relevant scientific advice, including with regard to the distinct characteristics of biogenic methane,

         (III) international best practice on the reporting of greenhouse gas emissions and removal, and

         (IV) in so far as practicable, the need to maximise employment, the attractiveness of the State for investment and the long term competitiveness of the economy,

   (b) have regard to climate justice when carrying out its functions under this section, and

(c) *the Advisory Council shall comply with regulations under subsection (5A) when carrying out its functions under this section.*

12. With Section 3(3) the Minister and the Government shall carry out their respective functions under sections 4, 5, 6, 6A, 6B, 6C and 6D in a manner—

    (a) that is consistent with the ultimate objective specified in Article 2 of the United Nations Framework Convention on Climate Change done at New York on 9 May 1992, and:

        (i) any mitigation or adaptation commitments entered into by the European Union in response or otherwise in relation to that objective;

        (ii) the steps specified in Articles 2 and 4(1) of the Agreement done at Paris on 12 December 2015 to achieve that objective, and

    (b) *which takes account of the most recent national greenhouse gas emissions inventory and projection of future greenhouse gas emissions, prepared by the Agency.*

13. Article 2 of the United Nations Framework Convention on Climate Change ("UNFCCC") provides:

    The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

14. Article 2 of the Paris Agreement provides:

    1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

        a. Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
        b. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and
        c. Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

    2. This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.

15. Article 4(1) of the Paris Agreement Provides

    In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will

take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty.

16. Both Ireland and the EU are parties to the UNFCCC and the Paris Agreement.

17. With Section 6C, Sectoral Emissions Ceilings must be prepared within the limits of the carbon budget, setting the maximum amount of greenhouse gas emissions that are permitted in different sectors of the economy during a budget period.

18. The annual Climate Action Plans prepared under Section 4(1)(a) must be consistent with the carbon budget programme and set out a roadmap of actions to include:

    (i) sector specific actions that are required to comply with the carbon budget and sectoral emissions ceiling for the period to which the plan relates,

    (ii) sector specific actions that are required to address any failure, or projected failure, to comply with the carbon budget and sectoral emissions ceiling for the period to which the plan relates, and

    (iii) other actions and measures that are reasonably necessary to support Government policy on climate change, including measures to inform, and promote dialogue with, the public regarding the challenges and opportunities in the transition to a climate neutral economy,

19. The National Long Term Climate Action Strategy (**NLTCAS**) prepared under Section 4(1)(b) shall specify the manner in which it is proposed to achieve the national climate objective and shall include:

    a. projected reductions in greenhouse gas emissions and the enhancement of sinks, for a minimum period of 30 years,

    b. projected reductions in greenhouse gas emissions in each of the relevant sectors determined by the Government under section 6C and the enhancement of removals in such sectors, for a minimum period of 30 years, and

    c. an assessment of potential opportunities for achieving reductions in greenhouse gas emissions in the sectors referred to in paragraph (b).

Climate Action Plans and other measures

20. As of now the Government is in default of its obligation to prepare a CAP for 2026 and to have in place carbon budgets for three successive five year periods, at this stage up to 2040.

21. Chapter 12 of the Climate Action Plan 2024 (**CAP24**) and Chapter 11 of the Climate Action Plan 2025 (**CAP25**) concern the electricity sector. CAP24 and CAP25 are to be read together and identify the sectoral emissions ceilings:

    - Carbon Budget 1 (2021-2025) :40 MtCO2eq.
    - Carbon Budget 2 (2026-2030): 20 MtCO2eq.
    - Emissions Abatement (on 2018): -75% (3 MtCO2eq. per annum by 2030)

- Emissions up to the end of 2022: 19.7 MtCO2eq.

22. CAP25 notes that for electricity the "*2023-2050 EPA Projections Report indicates that while annual emissions are reducing for the first carbon budget period, mitigation will be insufficient, and the projected excess will be circa 1 MtCO2eq. for the period*."

23. CAP24 §12.3 quotes the SEAI to the effect that "*The deployment of renewables needs to outpace the growth in energy demand for it to deliver the absolute reductions in GHG emissions required. Therefore, the timing of the delivery of the renewable energy generation relative to the scale and pace of growth in electricity demand is a critical factor*."

24. Table 12.5 of CAP24 sets out a set of KPIs across three themes.

25. §12.4 of CAP24 sets out a range of measures to meet the challenge.

26. CAP24 states at §12.1.3:

> *At a time when the energy system is under severe pressure to ensure security of supply, amid projections of rapid electricity demand growth over the coming decade, the electricity sector has been set one of the smallest carbon budget allocations and the steepest trajectory (-75%) across all sectors. The scale of the challenge to meet the sectoral emissions ceiling is immense and requires policies to be moved from an 'end of decade' target trajectory towards a 'remaining carbon budget' target.*

27. In relation to the limited possibility for flexible generation plants, Gas Networks Ireland has identified connection contracts with 12 flexible gas plants with total installed capacity of 1.87 GWe of which 1.627 GWe has been awarded under the capacity auctions. Please see the table in **Annex 1** for further details. The Cashla Peaker plant is included on this list and was awarded 262 MWe.

28. There is now an additional 600MWe installed capacity available from the recently granted Shannon LNG power plant which is a closed-cycle gas turbine. A judicial review of the decision to grant planning permission for this development was dismissed on 1 April 2026 on the basis that this facility, based on closed-cycle technology would displace less efficient open-cycle generations as part of the 2 GW of flexible generation envisaged by the CAPs[2].

29. CAP24 and 25 although providing for 2GW of flexible gas generation contain no details as to how this capacity ought to be provided nor is there a specific estimate of the carbon budget allocated to this activity as part of the Carbon Budget programme and/or Sectoral Emissions Ceilings.

EPA Projections

30. The EPA in its latest emissions projections[3] has only factored in 1.4 GWe of flexible gas generation by 2030 in both with existing measures (**WEM**) and with additional measures (**WAM**) scenarios as an implementation pathway to the CAP 2024 target of "at least" 2GW for new flexible gas fired generation is not available, which appears to be an assumption derived from Eirgrid and SONI capacity statements[4].

[2] *Friends of the Irish Environment v An Coimisiún Pleanála* [2026] IEHC 205 (ACP Reference 319566)
[3] Ireland's Greenhouse Gas Emissions Projections 2024-2055 (EPA, May 2025)
[4] Input assumptions for National Energy Projections and associated GHG emissions 2024-2055

31. EPA's latest projections show that even in the WAM scenario Ireland will only achieve 21.7% reduction in emissions compared to 2005 levels against a target of 42% in areas covered by the Effort Sharing Regulation.

32. In relation to the NCO the EPA projections show that Ireland is not on target to meet the interim target of 51% reduction of GHG emissions between 2018 and 2030 with a very significant gap of 20 MtCO2e in the WAM scenario and an even worse 30 MtCO2e in the WEM scenario. No projections are offered in relation to the NCO and 2050.

33. In relation to carbon budgets the EPA projections indicate that for the Budget 2 period carryover of between 8 and 12 MtCO2e will be needed reducing the Carbon Budget during that period to between 188 and 192 MtCO2e in period 2 and between 37 and 75 MtCO2e in period 3 (provisional).

34. In relation to the SEC for Electricity emissions in 2030 are projected to be 3.1 MtCO2e, slightly above the 3 MtCO2e target representing a 70% change compared to 2018 against a target of 75%. An exceedance of 1.6 MtCO2e in the WAM scenario is projected in the 2026 to 2030 period. Only 1.4GW of net gas-fired generation capacity is projected to be added by 2030.

National Long Term Climate Action Strategy

35. Under the NLTCAS the pathway emissions for electricity are as follows in (MtCO2e/yr)

2018	10
2030	3
2035	2 to 0
2050	0 to -5

(Figure 4.1)

EIA Directive

36. The Developer has submitted an EIAR for the project with the planning application. It is not disputed that the project and the proposed development come within the scope of that directive.

37. Article 5(1) of the EIA Directive requires the developer to prepare and submit an EIAR which shall include at least:

    (a) a description of the project comprising information on the site, design, size and other relevant features of the project;
    (b) a description of the likely significant effects of the project on the environment;
    (c) a description of the features of the project and/or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
    (d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment;
    (e) a non-technical summary of the information referred to in points (a) to (d); and
    (f) any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.

38. The Developer and the Competent Authority have shared responsibility for the completeness and quality of the environmental impact assessment report. In the first instance it is for the Developer to ensure the EIAR is prepared by competent experts. In the second it is for the Commission to ensure that it has or has access to sufficient expertise to examine the EIAR and where necessary to seek

supplementary information in accordance with Annex IV which is directly relevant to reaching the reasoned conclusion on the significant effects on the environment.

39. Any authorities holding relevant information, with particular reference to Article 3, must make this information available to the developer.

40. Annex IV(4) specifically mentions climate (for example greenhouse gas emissions, impacts relevant to adaption) as one of the factors specified in Article 3(1) likely to be significantly affected by the project. Annex IV(5)(f) lists the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change as one of the likely significant effects to be described in the EIAR.

41. Since climate change is a very important environmental concern, it is submitted that the documents made available to the public concerned must contain the data that are necessary in order to assess the effects of the project on climate change and in particular to assess whether a grant of permission would be consistent with the Commission's obligations under Section 15(1) of the 2015 Act since this a substantive requirement of environmental law and effects on the environment which infringe environmental law would be significant in any case.

42. In relation to the assessment of alternatives, at least in the case of climate change, the information presented must allow for direct comparison between different alternatives against the section 15 measures, as well as carbon budgets and SECs and therefore require calculations of the quantum of emissions and their evolution over time for all alternatives condiered. This requirement stems from the fact that carbon budgets are limited to an absolute amount of GHG emissions and the Paris Agreement requires emissions globally to reach a peak as soon as possible, recognising that it will take longer in developing countries and to undertake rapid reductions. Parties must also undertake rapid reductions thereafter in accordance with best available science. All else being equal the alternative with the lowest cumulative emissions is the one that should be chosen having regard to section 15(1) interpreted in so far as possible consistently with the Paris Agreement, unless it would be impracticable. This is also important here because in Ireland the electricity sector is envisaged to be at net zero, and even having net removal, as early as 2035.

43. Similarly the information needed to ascertain whether the proposed development is one supported by climate-related investment policies under Article 2(1)(c) of the Paris Agreement and the Taxonomy Regulation is not present. This is important particularly where the Developer is a Public Authority it has direct obligations in relation to the investment of public money stemming from the Paris Agreement and the Taxonomy Regulation as well as the 2015 Act.

44. It is submitted that the EIAR does not contain sufficient information so that the Commission can be satisfied that in granting permission it exercises its functions consistently with the matters set out in section 15(1).

45. The largest contribution to GHG emissions is stated to come from the operational energy which includes the electricity demand by site buildings, natural gas use by (100hrs per year) by turbine and backup generator (72hrs per year) and low sulphur diesel use by testing of backup generator. The EIAR estimates that predicted GHG emissions will be in the range 19,320 to 19,800 ktCO2e/ye depending on the type of open cycle gas turbine used. It appears that this level of emissions is envisaged to remain constant up to 2050.

46. The problem with the EIAR is that it is impossible to separate out the different components of this total and in turn to verify that the calculation is correct. There is no statement of the quantity of gas or other fossil fuels or the thermal energy of the proposed fossil fuel usage as a function of time. Similarly

there is no information on the total energy output per year or the average rate of carbon emissions per unit of electrical energy produced. There is no information on turbine efficiency or the emissions profile during ramp up and ramp down cycles. This makes it impossible to benchmark the performance of the proposed power plant against the best available science, which is a requirement of the Paris Agreement, or against the EU standards as set out below.

47. In relation to alternatives the use of more efficient closed cycle technology is dismissed on the basis that open cycle technology can ramp up more quickly. However there is no information presented to show that closed-cycle technology would result in overall lower GHG emissions bearing in mind that closed cycle might be double the efficiency of open cycle. In fact the Commission granted permission to the Shannon LNG flexible generation plant, a closed-cycle technology, on the basis that it would result in lower emissions. This finding was upheld by the High Court in a judgment on 1 April 2026. Therefore as a matter of fact as settled by the High Court, closed-cycle has lower emissions than open cycle for flexible generation. This finding is binding on the Commission.

48. Section 8.5.1.5 indicates that significance should be measured in terms of the level of mitigation taking place and the extent to which the project aligns with the trajectory to net zero by GHG. This trajectory is set out in the NLTCAS and is one of the measures which the Commission must act consistently with. The EIAR acknowledges this strategy but does not appear to engage with it at all

49. The issue here is that the EIAR envisages uniform GHG emissions from start of operation out to 2050 whereas the trajectory to net-zero envisages 0 or negative emissions from electricity from 2035 onwards. Based on the information presented in the EIAR, the project is not compatible with the NLTCAS.

Compliance with the standard of environmental sustainability in the Taxonomy Regulation

50. Sustainability underpins climate action. Article 2 of the UNFCCC states as its ultimate objective to prevent dangerous anthropogenic interference with the climate system to enable economic development to proceed in a sustainable manner.

51. The Paris Agreement, through Article 2, enhances the implementation of the UNFCCC by strengthening the global response to climate change in the context of sustainable development.

52. The NCO itself is framed in the same way aimed at achieving an environmentally sustainable and climate neutral economy.

53. Given that the measures established under the 2015 Act are derived from international treaties to which Ireland and the EU are parties and the EU has exercised its competencies in relation to the subject matter, the interpretation of the 2015 Act is a matter of EU law and the Commission is therefore required to interpret national law to the fullest extent possible in accordance with the objectives of the UNFCCC and the Paris Agreement.

54. In relation to environmentally sustainable activities the EU has developed a series of criteria for assessing whether generation of fossil gas is environmentally sustainable for the purposes of investment as part of its implementation of Article 2(1)(c) of the Paris Agreement.

55. It is submitted that the concept of “sustainable development” and “environmentally sustainable development” under the Planning and Development Act, the 2015 Act and the NCO must be interpreted consistently in light of the UNFCCC and the Paris Agreement and that the same criteria must be applied as developed through the Taxonomy Regulation.

56. Alternatively it is submitted that it is not consistent with the concept of sustainable development or environmental sustainability to grant permission for a fossil gas generation plant aimed at reinforcing renewable deployment which is less likely to attract finance because it does not satisfy the Taxonomy criteria, and therefore less likely to be developed.

57. Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (OJ L 198/13 22.6.2020, p. 13-43) (the "Taxonomy Regulation") establishes criteria for determining whether certain economic activities qualify as environmentally sustainable for the purposes of establishing the degree to which an investment is environmentally sustainable. The Taxonomy Regulation further defines criteria which are considered to significantly harm certain environmental objectives, including climate change mitigation.

58. Recital 3 of the Taxonomy Regulation records that

> *The Paris Agreement adopted under the United Nations Framework Convention on Climate Change (the 'Paris Agreement') was approved by the Union on 5 October 2016. Article 2(1)(c) of the Paris Agreement aims to strengthen the response to climate change by making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development, among other means. In that context, on 12 December 2019, the European Council adopted conclusions on climate change. In light thereof, this Regulation represents a key step towards the objective of achieving a climate-neutral Union by 2050.*

59. Recital 24 records:

> *An economic activity that pursues the environmental objective of climate change mitigation should contribute substantially to the stabilisation of greenhouse gas emissions by avoiding or reducing them or by enhancing greenhouse gas removals. The economic activity should be consistent with the long-term temperature goal of the Paris Agreement. That environmental objective should be interpreted in accordance with relevant Union law, including Directive 2009/31/EC of the European Parliament and of the Council*

60. Article 2(5) defines "climate change mitigation" to mean the process of holding the increase in the global average temperature to well below 2 °C and pursuing efforts to limit it to 1,5 °C above pre-industrial levels, as laid down in the Paris Agreement.

61. Article 3 of the Taxonomy Regulation sets out four cumulative criteria which must be satisfied for an economic activity to qualify as environmentally sustainable:

> *For the purposes of establishing the degree to which an investment is environmentally sustainable, an economic activity shall qualify as environmentally sustainable where that economic activity:*
>
> *a) contributes substantially to one or more of the environmental objectives set out in Article 9 in accordance with Articles 10 to 16;*
>
> *b) does not significantly harm any of the environmental objectives set out in Article 9 in accordance with Article 17;*
>
> *c) is carried out in compliance with the minimum safeguards laid down in Article 18; and*
>
> d) *complies with technical screening criteria that have been established by the Commission in accordance with Article 10(3), 11(3), 12(2), 13(2), 14(2) or 15(2).*

62. Article 10(1) of the Taxonomy Regulation defines what is meant by a "substantial contribution to climate change mitigation":

> *"An economic activity shall qualify as contributing substantially to climate change mitigation where that activity contributes substantially to the stabilisation of greenhouse gas concentrations in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system consistent with the long-term temperature goal of the Paris Agreement through the avoidance or reduction of greenhouse gas emissions or the increase of greenhouse gas removals, including through process innovations or product innovations, by:*
>
> *…*
>
> *(g) establishing energy infrastructure required for enabling the decarbonisation of energy systems"*

63. Article 10(2) recognises that in some instances carbon-emitting activities must be deployed to support the transition to a climate-neutral economy:

> *2. For the purposes of paragraph 1, an economic activity for which there is no technologically and economically feasible low-carbon alternative shall qualify as contributing substantially to climate change mitigation where it supports the transition to a climate-neutral economy consistent with a pathway to limit the temperature increase to 1,5 0C above pre-industrial levels, including by phasing out greenhouse gas emissions, in particular emissions from solid fossil fuels, and where that activity:*
>
> *(a) has greenhouse gas emission levels that correspond to the best performance in the sector or industry;*
>
> *(b) does not hamper the development and deployment of low-carbon alternatives; and*
>
> (c) *does not lead to a lock-in of carbon-intensive assets, considering the economic lifetime of those assets.*

64. Article 10(3) empowers the European Commission to adopt a delegated act in accordance with Article 23 to supplement paragraphs 1 and 2 of Article 10 and Article 17 by establishing technical screening criteria for determining the conditions under which a specific economic activity qualifies as contributing substantially to climate change mitigation and by establishing, for each relevant environmental objective, technical screening criteria for determining whether an economic activity in respect of which technical screening criteria have been established causes significant harm to one or more of those objectives.

65. Using this power, the European Commission has adopted Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (OJ L 442, 9.12.2021 p.1-349) (as amended by Commission Delegated Regulation 2022/1214) (the "Delegated Regulation").

66. Paragraph 4.29 of Annex 1 of the Delegated Regulation sets technical screening criteria in relation to climate change mitigation for electricity generation from fossil gaseous fuels and Paragraph 4.29 of Annex II of the Delegated Regulation sets technical screening criteria in relation to climate change

adaption as well as “Do No Significant Harm” to climate change mitigation for electricity generation from fossil gaseous fuels (the “Technical Screening Criteria”).

67. Copies of these paragraphs are included in the annex to this letter.

68. Sub-paragraph 1(a) of 4.29 of Annex I supports greenfield power generation using fossil gas where the life-cycle GHG emissions from generation are lower than 100 gCO2e/kWh. This requires the use of lower carbon gases and/or abatement. Sub-paragraph 1(b) envisages, for a limited period of time, permits for fossil gas power generation with direct emissions lower than 270 gCO2e/kWh or annual direct emissions that do not exceed an average of 550kgCo2e/kW over 20 years for plants which replace an existing high emitting electricity generating activity using solid or liquid fossil fuel (for example coal or oil).

69. The Table at the end of Paragraph 4.29 of Annex II defines “Do no significant harm” to climate mitigation for fossil gas electricity generation as “the direct GHG emissions of the activity are lower than 270 gCO2e/kWh”.

70. The 2015 Act identifies in section 6A(9)(a)(ii)(IV) and section 4(8)(g) the need to maximise the attractiveness of the State for investment and the long term competitiveness of the economy, and these are factors that have been taken into account by the CCAC, the Minister and the Government in developing carbon budgets, CAPs and the NLTCAS.

71. CAP24 identifies the Taxonomy Regulation as follows (p. 149):

> *“[T]he EU has developed a science-based taxonomy as the gold standard for sustainable activities. This aims to scale up sustainable investment, both to underpin the ambitions of the European Green Deal and to support the achievement of Member States’ own climate action objectives. It provides a consistent, science-based, classification framework to companies, investors, and policymakers, through which economic activities can be considered environmentally sustainable, and sets out the requirements that must be met by each activity for it to be sustainable.”*

Discussion

72. There are major lacunae in the baseline due to the Government’s failure to adopt CAP 2024, finalise the budget for the third period 2030 to 2035 and to adopt a provisional budget for the period 2035 to 2040. It is very difficult to see how a lawful EIA carried out in that context and indeed how the Commission can act consistently with Section 15(1) when key elements have not been put in place particularly for the period after 2030.

73. In that context it is submitted that the decision-making process be suspended until the Government comes back into compliance with its obligations under the 2015 Act and adopts a new CAP and finalises carbon budgets out to 2040

74. Moving on from that, the Commission has a positive obligation to require supplementary information from the Developer so that a full assessment of significant effects on climate can be carried out including in relation to Section15(1) of the 2015 Act as described in more detail. Critical data and information is missing from the EIAR which makes it impossible to carry out an assessment and indeed for the public concerned to get an accurate impression of climate change impacts.

75. As things stand the proposed development seems clearly to be at odds with the trajectory of the electricity sector towards the NCO which envisages in one scenario zero emissions by 2035 and negative emissions thereafter. While the EIAR at section 8.11 includes some commentary on lower

carbon gases this is presented “for information” indicating that it is not certain enough to be included in the assessment (see, e.g. *Kilkenny Cheese*).

76. There is no information in the EIAR to assess whether the proposed development satisfies the criteria in paragraph 1(a) of the Technical Screening Criteria since it has not been demonstrated that life-cycle GHG emissions from the generation of electricity using fossil gaseous fuels are lower than 100 gCO2e/kWh. The EIA Screening indicates that the emissions associated with natural gas are assumed to be 204 g CO2e/kWh net calorific value but taking into account that open cycle gas turbines operate at around 35% efficiency the direct emissions are likely to be in the region of 580 gCO2e/kW.

77. Furthermore, there is no information on the file to demonstrate that the quantified life-cycle GHG emissions are verified by an independent third party. In fact, there is no life-cycle calculation at all.

78. The proposed development also does not come within the cumulative criteria in paragraph 1(b) of the Technical Screening Criteria since this only applies in the case where a project replaces an existing high emitting electricity generation activity that uses solid or liquid fossil fuels and that has been verified by an independent third party. There is no evidence that the proposed development is a replacement for solid or liquid fossil fuel power station – it is not being promoted by the Developer in order to achieve or replace fossil fuel power stations powered by solid or liquid fossil fuels and any such claim is mere speculation.

79. In addition, there is no information to show how the proposed development satisfies the DNSH requirement. In fact, it appears that the proposed development will emit direct emissions of significantly more than 270 gCO2e/kWh and therefore will significantly harm climate change mitigation.

80. The proposed development, despite the claim that it is energy infrastructure required for enabling the decarbonisation of energy systems, does not satisfy either of the criteria set out in paragraph 1 of the Technical Screening Criteria or the DNSH limitation and therefore it does not substantially contribute to climate change mitigation and therefore it is not environmentally sustainable and/or is not a transitional activity as a matter of EU law.

81. The Commission therefore cannot conclude that the proposed development would be in accordance with the proper planning and sustainable development of the area in circumstances where the proposed development is an unsustainable development for the purposes of EU law and will cause significant harm to climate, similar the Commission cannot conclude that the proposed development is consistent with CAP24 given that CAP24 incorporates the taxonomy regulation criteria.

82. Furthermore granting permission would be incompatible with the objective of maximising the attractiveness of the State for investment under the 2015 Act and of the Paris Agreement obligation to make finance flows consistent with the pathway towards low greenhouse gas emissions and climate resilient development. This obligation is particularly acute in the situation where there only a limited scope of new gas generation and where the Developer in this instance is a public authority with direct legal obligations stemming from EU law and from the UNFCCC and the Paris Agreement.

83. The Commission must refuse permission to ensure that it complies with its obligations under section 15(1) of the Climate Action and Low Carbon Development Act 2015 and CAP24 and CAP25.

84. The Commission could only achieve such consistency by granting permission for the proposed development which includes fossil gas electricity generation if it was satisfied the Technical Screening Criteria under the Taxonomy Regulation and the Delegated Regulation were complied with, notwithstanding the claim that the proposed development is energy infrastructure required for

enabling the decarbonisation of energy systems, namely through the provision of flexible gas capacity as envisaged in the Climate Action Plans.

85. The Commission is also obliged to refuse permission under Section 15(1)(e) for a proposed development which will not do no significant harm to climate change mitigation.

Conclusion

86. In light of the above it is my considered opinion that an EIAR is required for this project, that it is not consistent with Section 15 of the Climate Action and Low Carbon Development Act 2015, it is not an environmentally sustainable activity and as a matter of law will do significant harm to climate change mitigation and therefore should be refused.

87. In the alternative the Commission could consider granting planning permission for a limited amount of time so that a new permit and a new assessment could be carried out taking into account evolving climate policies, but as things stand.

Yours sincerely

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Annex 1 – Table of Gas Fired Power provided by Gas Networks Ireland

Contracted Power Gen	Developer	Location	Installed Capacity (MWe)	T-4 Auction Awarded Capacity Derated(MWe)	Related Capacity Auction (Year)	Capcity Auction Final Results
BNM Edenderry	BNM	Edenderry, Offaly	116	105	25/26'	T-4-2025-26-Final-Capacity-Auction-Results-Report.pdf
LCC Power / Kilshane Energy	LCC Power	Kilshane, Dublin	275	253	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
ESB Poolbeg	ESB	Poolbeg, Dublin	299	255	26/27'	PCAR2627T-4-report.pdf
BGE Cashla	BGE	Athenry, Galway	340	262	28/29'	20282029-T-4-Final-Capacity-Auction-Results-Report-FCAR2829T-4.pdf
Lumcloon Castlelost	VPI	Castlelost, Westmeath	275	247	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Greener Ideas Athlone	BGE	Athlone Westmeath	100	90	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Greener Ideas Profile	BGE	Grangecastle, Dublin	100	90	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Grange Backup Power	SDCL	Grangecastle, Dublin	115	104	23/24'	T-4-2023-2024-Final-Capacity-Auction-Results-Report.pdf
ESB Ringsend Flex Gen	ESB	Ringsend, Dublin	65	57	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
ESB Poolbeg Flex gen	ESB	Poolbeg, Dublin	65	57	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
ESB Corduff/Goddamendy Flex Gen	ESB	Corduff, Dublin	65	57	24/25'	T-3-2024-2025-Final-Capacity-Auction-Results-Report.pdf
Bulmer / Data Power & Hub services	Data Power & Hub Services	Grangecastle, Dublin	55	50	27/28'	FCAR2728T-4-report-v1.0.pdf

Annex 2 – Copies of Paragraph 4.29 to Annex I and Annex II to the Delegated Act

4.29. **Electricity generation from fossil gaseous fuels**

Description of the activity

Construction or operation of electricity generation facilities that produce electricity using fossil gaseous fuels. This activity does not include electricity generation from the exclusive use of renewable non-fossil gaseous and liquid fuels as referred to in Section 4.7 of this Annex and biogas and bio-liquid fuels as referred to in Section 4.8 of this Annex.

The economic activities in this category may be associated with several NACE codes, notably D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

An economic activity in this category is a transitional activity as referred to in Article 10(2) of Regulation (EU) 2020/852 where it complies with the technical screening criteria set out in this Section.

Technical screening criteria

Substantial contribution to climate change mitigation

1. The activity meets either of the following criteria:
   (a) the life-cycle GHG emissions from the generation of electricity using fossil gaseous fuels are lower than 100 g CO2e/kWh.
   Life-cycle GHG emissions are calculated based on project-specific data, where available, using Recommendation 2013/179/EU or, alternatively, using ISO 14067:2018 or ISO 14064-1:2018.
   Quantified life-cycle GHG emissions are verified by an independent third party.
   Where facilities incorporate any form of abatement, including carbon capture or use of renewable or low-carbon gases, that abatement activity complies with the criteria set out in the relevant Section of this Annex, where applicable.
   Where the CO_2 that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO_2 is transported and stored underground, in accordance with the technical screening criteria set out in Sections 5.11 and 5.12 of this Annex.
   (b) facilities for which the construction permit is granted by 31 December 2030 comply with all of the following:
      (i) direct GHG emissions of the activity are lower than 270g CO2e/kWh of the output energy, or annual direct GHG emissions of the activity do not exceed an average of 550kgCO2e/kW of the facility's capacity over 20 years;
      (ii) the power to be replaced cannot be generated from renewable energy sources, based on a comparative assessment with the most cost-effective and technically feasible renewable alternative for the same capacity identified; the result of this comparative assessment is published and is subject to a stakeholder consultation;
      (iii) the activity replaces an existing high emitting electricity generation activity that uses solid or liquid fossil fuels;
      (iv) the newly installed production capacity does not exceed the capacity of the replaced facility by more than 15 %;
      (v) the facility is designed and constructed to use renewable and/or low-carbon gaseous fuels and the switch to full use of renewable and/or low-carbon gaseous fuels takes place by 31 December 2035, with a commitment and verifiable plan approved by the management body of the undertaking;
      (vi) the replacement leads to a reduction in emissions of at least 55 % GHG over the lifetime of the newly installed production capacity;
      (vii) where the activity takes place on the territory of a Member State in which coal is used for energy generation, that Member State has committed to phase-out the use of energy generation from coal and has reported this in its integrated national energy and climate plan referred to in Article 3 of Regulation (EU) 2018/1999 of the European Parliament and of the Council **[8] or in another instrument.

Compliance with the criteria referred to in point 1(b) is verified by an independent third party. The independent third-party verifier has the necessary resources and expertise to perform such verification. The independent third party verifier does not have any conflict of interest with the owner or the funder, and is not involved in the development or operation of the activity. The independent third party verifier carries out diligently the verification of compliance with the technical screening criteria. In particular, every year the independent third party publishes and transmits to the Commission a report:
   (a) certifying the level of direct GHG emissions referred to in point 1(b)(i);

(b) where applicable, assessing whether annual direct GHG emissions of the activity are on a credible trajectory to comply with the average threshold over 20 years referred to in point 1(b)(i);
(c) assessing whether the activity is on a credible trajectory to comply with point 1(b)(v).

When undertaking the assessment referred to in point 1(b), the independent third party verifier takes into account in particular the planned annual direct GHG emissions for each year of the trajectory, realised annual direct GHG emissions, planned and realised operating hours, and planned and realised use of renewable or low carbon gases.
On the basis of the reports transmitted to it, the Commission may address an opinion to the relevant operators. The Commission shall take those reports into account when performing the review referred to in Article 19(5) of Regulation (EU) 2020/852.

2. The activity meets either of the following criteria:
   (a) at construction, measurement equipment for monitoring of physical emissions, such as those from methane leakage, is installed or a leak detection and repair programme is introduced;
   (b) at operation, physical measurement of emissions are reported and leak is eliminated.
3. Where the activity blends fossil gaseous fuels with gaseous or liquid biofuels, the agricultural biomass used for the production of the biofuels complies with the criteria laid down in Article 29, paragraphs 2 to 5, of Directive (EU) 2018/2001 while forest biomass complies with the criteria laid down in Article 29, paragraphs 6 and 7, of that Directive.

Do no significant harm ('DNSH')

(2) Climate change adaptation	The activity complies with the criteria set out in Appendix A to this Annex.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex. Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants. No significant cross-media effects occur. For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

	An Environmental Impact Assessment is completed prior to the construction of a nuclear power plant, in accordance with Directive 2011/92/EU. The required mitigation and compensatory measures are implemented. The relevant elements in this Section are covered by Member States' reports to the Commission in accordance with Article 14(1) of Directive 2011/70/Euratom.
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex. Non-radioactive emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the best available techniques (BAT) conclusions for large combustion plants. No significant cross-media effects occur. For nuclear power plants greater than 1 MW thermal input but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193. Radioactive discharges to air, water bodies and ground (soil) comply with individual licence conditions for the specific operations, where applicable, and/or national threshold values in line with Directive 2013/51/Euratom and Directive 2013/59/Euratom). Spent fuel and radioactive waste is safely and responsibly managed in accordance with Directive 2011/70/Euratom and Directive 2013/59/Euratom. An adequate capacity of interim storage is available for the project, while national plans for disposal are in place to minimize the duration of interim storage, in compliance with the provision of Directive 2011/70/Euratom that considers radioactive waste storage, including long-term storage, as an interim solution, but not an alternative to disposal.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex. An Environmental Impact Assessment is completed prior to the construction of a nuclear power plant, in accordance with Directive 2011/92/EU. The required mitigation and compensatory measures are implemented. For sites/operations located in or near biodiversity sensitive areas likely to have a significant effect on biodiversity sensitive areas (including the Natura 2000 network of protected areas, Unesco World Heritage sites and Key Biodiversity Areas, as well as other protected areas), an appropriate assessment, where applicable, has been conducted and based on its conclusions the necessary mitigation measures are implemented. The sites/operations shall not be detrimental to the conservation status of any of the habitats or species present in protected areas.

4.29. **Electricity generation from fossil gaseous fuels**

Description of the activity

Construction or operation of electricity generation facilities that produce electricity using fossil gaseous fuels that meet the criteria in point 1(a) of Section 4.29 of Annex I. This activity does not include electricity generation from the exclusive use of renewable non-fossil gaseous and liquid fuels referred to in Section 4.7 of Annex I and biogas and bio-liquid fuels referred to in Section 4.8 of Annex I.

The economic activities in this category may be associated with several NACE codes, notably D35.11 and F42.22 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Technical screening criteria

Substantial contribution to climate change adaptation
1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity. 2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps: (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime; (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity; (c) an assessment of adaptation solutions that can reduce the identified physical climate risk. The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that: (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale; (b) for all other activities, the assessment is performed using the highest available resolution, state-of-the-art climate projections across the existing range of future scenarios ([16]) consistent with the expected lifetime of the activity, including, at least, 10 to 30 year climate projections scenarios for major investments. 3. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports ([17]), scientific peer-reviewed publications and open source ([18]) or paying models. 4. The adaptation solutions implemented: (a) do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities; (b) favour nature-based solutions ([19]) or rely on blue or green infrastructure ([20]) to the extent possible; (c) are consistent with local, sectoral, regional or national adaptation plans and strategies; (d) are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met; (e) where the solution implemented is physical and consists in an activity for which technical screening criteria have been specified in this Annex, the solution complies with the do no significant harm technical screening criteria for that activity.

([16]) Future scenarios include Intergovernmental Panel on Climate Change representative concentration pathways RCP2.6, RCP4.5, RCP6.0 and RCP8.5.

([17]) Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, https://www.ipcc.ch/reports/.

([18]) Such as Copernicus services managed by the European Commission.

([19]) Nature-based solutions are defined as 'solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions'. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem services (version of [adoption date]: https://ec.europa.eu/info/research-and-innovation/research-area/environment/nature-based-solutions_en/).

([20]) See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Green Infrastructure (GI) – Enhancing Europe's Natural Capital, COM/2013/249 final.

Do no significant harm ('DNSH')	
(1) Climate change mitigation	The direct GHG emissions of the activity are lower than 270 g CO2e/kWh.
(3) Sustainable use and protection of water and marine resources	The activity complies with the criteria set out in Appendix B to this Annex.
(4) Transition to a circular economy	N/A
(5) Pollution prevention and control	The activity complies with the criteria set out in Appendix C to this Annex. Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants. No significant cross-media effects occur. For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II, part 2, to Directive (EU) 2015/2193.
(6) Protection and restoration of biodiversity and ecosystems	The activity complies with the criteria set out in Appendix D to this Annex.

4.30. **High-efficiency co- generation of heat/cool and power from fossil gaseous fuels**

Description of the activity

Construction, refurbishment and operation of combined heat/cool and power generation facilities using fossil gaseous fuels that meet the criteria in point 1(a) of Section 4.30 of Annex I. This activity does not include high-efficiency co-generation of heat/cool and power from the exclusive use of renewable non-fossil gaseous and liquid fuels referred to in Section 4.19 of Annex I and biogas and bio-liquid fuels referred to in Section 4.20 of Annex I.

The economic activities in this category may be associated with NACE codes D35.11 and D35.30 in accordance with the statistical classification of economic activities established by Regulation (EC) No 1893/2006.

Technical screening criteria

Substantial contribution to climate change adaptation
1. The economic activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that activity. 2. The physical climate risks that are material to the activity have been identified from those listed in Appendix A to this Annex by performing a robust climate risk and vulnerability assessment with the following steps: (a) screening of the activity to identify which physical climate risks from the list in Appendix A to this Annex may affect the performance of the economic activity during its expected lifetime; (b) where the activity is assessed to be at risk from one or more of the physical climate risks listed in Appendix A to this Annex, a climate risk and vulnerability assessment to assess the materiality of the physical climate risks on the economic activity; (c) an assessment of adaptation solutions that can reduce the identified physical climate risk. The climate risk and vulnerability assessment is proportionate to the scale of the activity and its expected lifespan, such that: (a) for activities with an expected lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale;

Considerations of Planning Application 324113 to An Coimisiun Pleanála for the Development of an Open Cycle Peaker Plant & 220 kV Sub-Station at Rathmorrissy Athenry, Co. Galway & Connection to 220kV Sub-Station at Cashla by Bord Gáis Energy.

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Statement of authority

The author is a qualified environmental scientist with 20 years' experience who has, for the last 9 years, consulted on large energy projects and has appeared at An Bord Pleanála oral hearings on the EIA process with regard to same. She began her career in the environmental sector, focusing on waste management in the early 1990s, establishing the first recycling facilities in both Galway City & County. She has recently presented to the Joint Committee for Agriculture, Food & the Marine on the development of Biogas in Ireland. She also has expertise in freshwater algae, with a specialisation in Charophycean species, which are specific to karst locations and are high-pollution indicator species. She has been an experienced bat surveyor since 2006. As part of her degree, she specialised in hydrology & hydrogeology and Ecology and has strong competence in karst areas. She conducted research for 3 years with Dr. Z. Popper at N.U.I.Galway, researching the polysaccharides of the plant cell wall of Charophycean algae, presented these findings at two Irish Plant Scientist conferences and served as lead author of a paper on AGPs in the cell wall of Charophycean algae.

DISCLAIMER

This report has been prepared by the author with all afforded due skill, care, attention, and diligence within the terms of the agreement with the client. Considering our terms of agreement, time, and resources available and devoted to it, as agreed by the client at that time. We disclaim any responsibility to the client or others for any matters outside the scope of the above. Any such party relies on the report at their own risk.

Purpose of this report

This report was commissioned by Athenry Peaker Plant Concern Group to examine the planning application of Board Gáis Energy for a 325-340 MW open-cycle gas-fired peaker plant (OCGT) and associated infrastructure at Pollnagroagh/Rathmorrissy, Athenry, Co. Galway, including grid connection to Cashla 220kw sub-station. This is a Strategic Infrastructure Development Application Planning number: 324113. Preplanning ref: PC07-320975-24.

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Chapter 1
Site Selection and Alternative Site Assessment

1.1 Introduction

This chapter examines the site-selection case advanced in Volume 1 and Volume 2 of the EIAR for the proposed Cashla Peaker Plant at Rathmorrissy / Pollnagroagh, Athenry, Co. Galway. It is revised to test the applicant's alternatives chapter against the applicable European and Irish EIA framework, including Article 5(1)(d) and Annex IV of Directive 2011/92/EU as amended by Directive 2014/52/EU, the Environmental Protection Agency's 2022 Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, the Department's 2018 Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment, and the project-specific scoping response of the HSE / National Environmental Health Service (NEHS).

The key point is not that the applicant was legally obliged to assess every conceivable site or to prepare a full "mini-EIA" for every alternative. The stronger legal criticism is narrower and more precise: once the applicant chose to present a four-zone / cluster alternatives exercise, the EIAR was required to identify the reasonable alternatives studied, state the main reasons for the option chosen, and do so taking into account the effects of the project on the environment, including a comparison of environmental effects. The defect in the present EIAR is that the comparison is too general, too narrative, and too selective to disclose, in a clear and evidence-based way, the main environmental reasons why Rathmorrissy / Pollnagroagh was preferred to the rejected options.

(See Appendix 2 for an example of an EIAR where site selection was not a 'Mini-EIAR' but was carried out correctly and clearly. What is missing form this example to complete it is a scoring matrix)

1.2 The Relevant Legal and Guidance Framework

Volume 2 itself correctly states the governing legal test. Article 5(1)(d) of Directive 2011/92/EU, as amended by Directive 2014/52/EU, requires an EIAR to contain "a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and the main reasons for the option chosen, taking into account the effects of the project on the environment". Annex IV adds that the EIAR should include an indication of the main reasons for selecting the chosen option, "including a comparison of the environmental effects".

The EPA 2022 Guidelines adopt the same approach. They state that the objective is to show a representative range of practicable alternatives considered during design and EIA, and that it is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account. However, that guidance does not excuse vague reasoning. A broad description is permissible only where it still explains how environmental considerations actually informed the choice.

The Department's 2018 Guidelines for Planning Authorities and An Bord Pleanála similarly emphasise that the EIA process must identify, describe and assess the direct and indirect significant effects of the development on, inter alia, population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, landscape, and the interaction between those factors. The alternatives analysis must therefore be read in light of that wider environmental duty. A site-selection chapter which privileges engineering convenience but does not transparently explain how those environmental factors affected the comparative assessment is vulnerable to criticism.

1.3 The Applicant's Site Search Was Infrastructure-Led from the Outset

Volume 1 and Volume 2 show that the site search was constrained from the outset by the need to be near both an existing gas supply and an existing substation connection to the national grid.

Volume 2 states that the location for the Peaker Plant was primarily selected because of the intersection of the existing gas transmission lines and electricity grid infrastructure, with exceptional abnormal load transport from a suitable port also treated as a consideration. Four zones east of Galway City were then identified within close proximity to the Mayo–Galway pipeline and the 220 kV Cashla Substation.

That infrastructure-led approach is not unlawful in itself. However, it materially increases the importance of a transparent environmental comparison among the options that remain. The more tightly the search area is pre-conditioned by engineering and commercial criteria, the more important it becomes that environmental reasoning is not reduced to broad labels or summary assertions. In the present case, the alternatives chapter does not sufficiently show how environmental considerations displaced or constrained otherwise convenient locations, or why those same considerations did not count against the ultimately selected site.

1.4 The Four-Zone Exercise Is Presented Too Narratively

Volume 2 identifies four zones east of Galway City and a series of clusters within them, including Deerpark Industrial Estate north of Oranmore, the land between Galway Airport and Cashla, Ballymoneen, Barrettspark / Knocknacreeva, and Carraunduff / Pollnagroagh. The applicant says that these were assessed against engineering, environmental, planning, and availability constraints. However, the exercise is presented largely as a narrative sift rather than as a transparent comparative framework.

The legal problem is not simply one of style. The absence of a clear, consistently applied comparative framework makes it difficult to see whether the same environmental criteria were applied with equal intensity to each option. That matters because Article 5(1)(d) and Annex IV require the main reasons for the option chosen to be given by reference to the effects of the project on the environment. A narrative that lists broad reasons, but does not clearly compare the environmental implications of the shortlisted sites, risks falling short of that requirement.

1.5 The Oranmore / Deerpark Rejection Is Under-Explained

The EIAR does not say that Oranmore / Deerpark was rejected for one reason only. Rather, it refers to a bundle of issues, namely proximity to Galway Bay Complex SAC, the presence of numerous EPA-licensed facilities, and a COMAH / Seveso context. The problem is not that these matters were mentioned; the problem is that they were left at an unacceptably high level of generality.

The alternatives chapter does not identify which existing licensed activities were said to matter most, what actual emissions or cumulative pathways were feared, or why the presence of EPA-licensed facilities in that industrial setting should carry decisive exclusionary weight. Nor does it explain why these factors outweighed the environmental sensitivities that were later acknowledged at the chosen site. The effect is that the Deerpark/Oranmore option was screened out using broad industrial and regulatory descriptors rather than a reasoned comparison of likely environmental effects.

This is particularly important in light of the more detailed information now identified regarding the two Oranmore licences referred to in this objection context. Galway Metal Company, licence P1006-03, is a waste-treatment / metal-recovery installation and not a large combustion or power-generation activity. Colas Bitumen Emulsions (West), licence P0056-01, is currently described in EPA LEAP material as a Class 5.9 bitumen-emulsion facility. Recent EPA LEAP records also indicate that Chemoran subsequently separated into its own IE licence. Whether or not those facilities present genuine cumulative planning issues, the EIAR does not explain the relevant environmental mechanism. It relies on industrial labelling rather than comparative analysis. HSA TLUP analysis is also not used to justify this position.

1.6 Limestone Pavement and Calcareous Constraints Were Not Applied Consistently

Volume 2 expressly states that areas of limestone pavement were identified between Galway Airport, Cashla, and Ballymoneen and that, although not then mapped as Annex I habitat, they

may have conformity to Annex I habitat. This is a significant acknowledgment. It shows that the east-Galway limestone pavement and associated calcareous sensitivity were treated by the applicant as live site-selection issues.

The available NPWS and grassland survey material strengthens that point. The national limestone pavement survey identifies Grange East in Galway as a surveyed limestone-pavement site. The Irish Semi-Natural Grasslands Survey also identifies Rathmorrissy, including Ballygarraun West and Pollnagroagh, as a bedrock-at-surface calcareous / limestone till landscape. While this material does not, on its own, prove that the selected site was itself a formally identified limestone-pavement

monitoring site, it does confirm that the chosen location lies within the same wider calcareous east-Galway belt.

The inconsistency is therefore clear. If limestone pavement and associated calcareous constraints were serious enough to weigh negatively against parts of the search area, then the applicant needed to show transparently why the selected Rathmorrissy / Pollnagroagh site was materially different. The EIAR does not do that in a sufficiently clear or site-specific way. Instead, environmental sensitivity appears to have functioned as a selective filter in some areas while being expressed more weakly at the chosen site

1.7 The Pre-Application Record Undermines the “Lack of Significant Environmental Constraints” Claim

The revised criticism is materially strengthened by the pre-application correspondence in Volume 3 Appendix 1.1. In the first pre-application meeting record, the applicant side stated that no significant environmental sensitivities had been identified on initial scoping, that the area was grassland and had a low ecological value, and that there was no known flooding in the area. Yet the same pre-application record also shows that the Board’s representatives noted that the area is karst limestone and stated that a full investigation of potential karst features, including caves, would be required, and that the EIAR and ecological surveys would be vital.

That internal tension is important. It shows that the project narrative of a site with no significant environmental sensitivities was already being qualified, at pre-application stage, by An Bord Pleanála's own recognition of karst-limestone sensitivity serious enough to require fuller investigation. This substantially weakens the later alternatives conclusion in Volume 1 and Volume 2 that the chosen site was the best performing option because of a lack of significant environmental constraints.

1.8 Human Health Was a Project-Specific Scoping Issue and Should Have Been Reflected in Site Selection

The HSE / NEHS response in Volume 3 Appendix 1.1 materially strengthens the legal and methodological criticism of the alternatives chapter. The HSE expressly states that Directive 2014/52/EU enhanced the requirement to assess likely significant effects on Population and Human Health and that, in the experience of the NEHS, impacts on human health are often inadequately assessed in EIAs in Ireland. The HSE further states that the preferred methodology for assessing likely significant effects on Population and Human Health is a source–pathway–receptor model based on emissions through environmental media and population exposure.

This was not a generic background comment. The HSE / NEHS also raised project-specific concern regarding the pipeline crossing the motorway and how close the pipelines run to residential housing, stating that the risk assessment of gas transfer should be very clear with proximity to sensitive receptors and the magnitude of risk reported in the EIAR. Volume 2's own consultation summary acknowledges that the HSE stressed that human health impacts can often be under-assessed and referred the applicant to Population and Human Health, Air Quality, Noise and Vibration, and Water.

That is directly relevant to site selection. Once human health and sensitive-receptor exposure were identified as live-scoping issues, the alternatives chapter ought to have shown more clearly how population and human health factored into the comparative assessment of locations. Instead, the site-selection reasoning is dominated by gas, grid, archaeology, and broad ecological labels, with

no transparent demonstration that likely population-health implications were compared across the candidate sites in a meaningful or structured way. This omission is particularly notable where the chosen site is associated with nearby residences, major-road infrastructure, combustion plant emissions, and a pipeline / fuel context.

1.9 Comparative Summary of the Principal Defects

Applicable requirement	What the EIAR says	Why the chapter remains vulnerable
Article 5(1)(d) and Annex IV require the main reasons for the chosen option to be given, taking account of environmental effects and including a comparison of environmental effects.	The EIAR says that reasonable alternatives were considered and that a broad description is sufficient; it presents four zones and a narrative sift.	The narrative does not transparently compare the environmental effects of the shortlisted site options in a way that clearly explains why Rathmorrissy / Pollnagroagh was environmentally preferable.
EPA 2022 permits a broad description of alternatives only where environmental considerations are shown to have informed the choice.	The chosen site is said to be the best performing option due to gas-grid intersection, land availability and lack of significant environmental constraints.	The conclusion is too general and does not adequately show how environmental considerations were actually weighed and compared across the alternatives.
The 2018 planning guidance requires consideration of population and human health, biodiversity, land, soil, water, air, climate and interactions.	The alternatives discussion focuses primarily on engineering convenience, broad ecological labels, and existing land use / infrastructure conflicts.	The comparison does not transparently show how the full set of relevant environmental factors, including population and human health, were applied consistently across locations.
The HSE / NEHS stated that human health is often inadequately assessed in Irish EIAs and recommended a source–pathway–receptor approach.	Volume 2 records the HSE comments and refers to later technical chapters.	The alternatives chapter itself does not clearly reflect that human-health scoping concern in the location comparison, despite proximity-to-receptor issues being expressly raised.
Pre-application scoping should inform the identification of significant sensitivities.	At pre-application stage, the project side said no significant environmental sensitivities had been identified on initial scoping.	The Board's own representatives recorded that the area is karst limestone and that full karst investigation would be required. The later "lack of significant environmental constraints"

		conclusion is therefore overstated.

1.10 Conclusion

The principal defect in the site-selection chapter is not that the applicant failed to carry out an exhaustive "mini-EIA" of all possible sites. The principal defect is that the EIAR does not provide a sufficiently reasoned comparison of the environmental effects of the reasonable site alternatives actually considered and therefore does not adequately disclose the main environmental reasons for selecting Rathmorrissy / Pollnagroagh.

The exercise was infrastructure-led from the outset. The reasons given for rejecting Oranmore / Deerpark are broad and under-explained. Limestone pavement and wider calcareous sensitivity were treated inconsistently across the search area. The applicant's claim that the chosen site lacked significant environmental constraints is undermined by the pre-application record itself, which shows that An Bord Pleanála identified karst-limestone sensitivity requiring fuller investigation. In addition, the HSE / NEHS scoping response establishes that population and human health was a live project-specific scoping issue and that such effects are often inadequately assessed in EIAs in Ireland. Yet the alternatives chapter does not transparently show how those human-health considerations were incorporated into the comparative site assessment.

Taken together, these matters support the argument that the alternatives chapter does not satisfactorily demonstrate that Rathmorrissy / Pollnagroagh was environmentally preferable to the rejected options. Rather, it demonstrates that the selected site was convenient from an infrastructure perspective, and that it was then advanced through a comparative exercise that lacks adequate transparency, consistency, and environmental rigor.

1.11 References

1. Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU, in particular Article 5(1)(d) and Annex IV.

2. Environmental Protection Agency (2022), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

3. Department of Housing, Planning and Local Government / Department of Housing, Local Government and Heritage (2018), Guidelines for Planning Authorities and An Bord Pleanála on Carrying Out Environmental Impact Assessment.

4. European Commission (2017), Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report.

5. Cashla Peaker Plant EIAR, Volume 2, Chapter 3, especially section 3.1 and section 3.3.1, including the applicant's own statement of the legal test, the four zones, the shortlisted clusters, and the stated reasons for selection and rejection.

6. Cashla Peaker Plant EIAR, Volume 1 Non-Technical Summary, section 3.1.2 Site Location Alternatives.

7. Volume 3 Appendix 1.1 – List of Consultees & Copy of Pre-application Correspondence, including the HSE / NEHS letter dated 9 June 2025 and the pre-application records of An Bord Pleanála meetings dated 20 January 2025 and 28 May 2025.

8. Irish Wildlife Manuals No. 73, National Survey of Limestone Pavement and Associated Habitats in Ireland.

9. Irish Semi-natural Grasslands Survey – Western Seaboard Counties and County Tipperary (2013), including the Rathmorrissy site material referring to a bedrock-at-surface calcareous / limestone till landscape.

10. EPA LEAP material relating to Galway Metal Company Ltd. (P1006-03), Colas Bitumen Emulsions (West) Ltd. (P0056-01), and Chemoran Ltd., insofar as relevant to the critique of the generic treatment of the Oranmore industrial context.

Chapter 2. Gas-Fired OCGT Peaker Plants in North America: Technical Characteristics and Health Impacts

2.1 Executive Summary

Modern open-cycle gas turbine (OCGT) peaker plants are highly flexible generators used for grid reliability. They achieve high simple-cycle efficiencies (typically ~35–43%) and can start from cold to full power in minutes. These turbines burn mostly natural gas (ultra-low-sulfur) with distillate as backup; many new machines are being designed to accommodate large fractions of hydrogen fuel[80†L189-L197]. Pollution controls include lean-premixed low-NO_x (DLN) combustors, water/steam injection, and downstream catalysts (e.g., SCR) to meet stringent NO_x and CO limits. Even with controls, peaker emissions of NO_x, CO_2 and other pollutants are significant per kWh when operating at high loads.

Deployments of OCGT peakers have recently accelerated, especially to back up renewable grids and data centres. In 2021, the U.S. had ~999 gas peaker units (mostly OCGTs) representing 19% of grid capacity but only ~3.1% of annual generation[76†L304-L308]. These are often sited near urban centres and disadvantaged communities[76†L316-L324]. Canada has dozens of gas turbines (e.g., Ontario, Alberta) similarly used for peak power. Peakers typically run only short hours/year (often <1500 h, capacity factors ~5–15%)[76†L304-L308]. They are often located close to load centres, so local air impacts matter. Per MWh, peaker plants tend to emit more NO_x, SO_2, and particulates than average plants because many lack full-time controls[76†L328-L334]. For example, GAO found median peakers emit ~1.6× more SO_2 per MWh than non-peakers[85†L327-L334], exacerbating local air quality issues.

Regulatory limits for gas OCGTs in North America are strict. In the U.S., EPA's New Source Performance Standards (40 CFR 60) and state/local regulations typically require output-based NO_x limits (e.g., equivalent to ~2–9 ppmvd with SCR) similar to those for combined-cycle plants[74†L870-L879]. In Canada, federal guidelines (2017) set NO_x limits ~25 ppmv for peaking

turbines ≥4 MW[26†L278-L283]; provinces may add stricter limits (e.g. BC draft: 5–10 mg/Nm³ for SCR-equipped machines[19†L342-L351]) while acknowledging SO_2 is negligible from gas[19†L367-L370]. All jurisdictions cap CO and VOCs and ensure low fuel sulphur to minimize SO_2. Emissions are monitored via CEMS for key pollutants.

Health studies show fossil power-plant pollution causes significant respiratory and cardiovascular harm. Power-plant NO_x, SO_2, and $PM_{2.5}$ exacerbate asthma, COPD, heart attacks, and strokes[50†L119-L124][62†L208-L215]. Peaker-related spikes in these pollutants can trigger acute health events. For example, U.S. epidemiology attributes thousands of premature deaths and asthma cases each year to power-plant emissions[50†L119-L124]; NYC data (2011) estimate ~3,000 deaths/yr from $PM_{2.5}$ and hundreds more from ozone in the city, attributable to all sources including power plants[40†L329-L337]. Peer-reviewed studies link proximity to power plants with increased hospital admissions. In New York State, adults living in ZIP codes with a fossil power plant had ~11% higher asthma hospitalization rates than those in other ZIP codes [62†L173-L182]. In Louisville, KY, converting a coal OCGT to natural gas (with added controls) led to statistically significant drops in local asthma hospital visits[43†L283-L292][48†L324-L332]. In Edmonton, a spatial analysis found a childhood asthma "cluster" near a coal plant (risk ~10× higher within a few km)[64†L323-L332]. A cohort study in Florida found that each 5 km closer to any fossil plant raised the odds of preterm birth by ~1.8% [68†L467-L474]. Across studies, exposed populations had higher rates of respiratory illness (effect sizes ~5–30%, see Table 3). Many studies controlled for age, SES, smoking, and traffic, using GIS methods or natural experiments to isolate plant effects.

Data gaps and implications: Few studies isolate modern gas OCGTs; much evidence comes from coal or mixed sources. More monitoring of peaker plumes (e.g., episodic NO_x and ultrafine PM) is needed. Spatial analyses should combine emission inventories (EPA CEMS/AIRS, Canada NPRI) with local health data (hospital admissions, birth records) to refine dose–response.

Policymakers should consider stringent controls or replacement of polluting peakers with energy storage to protect nearby communities.

The following sections elaborate these points with technical details, tables, and charts.

2.2 Technical Characteristics of Gas OCGT Peakers

Modern OCGTs are either **aeroderivative** or **heavy-frame** turbines. Typical simple-cycle efficiencies range from about 30% (small aero) up to ~41–43% for large frames[2†L398-L404]. For example, Siemens reports an SGT-800 (45–62 MW) achieving up to 41.1% efficiency[2†L398-L404]. Start-up times are very short: aero-derivative models (e.g., 10 MW units) can reach full load in ~3 min, while larger frames (e.g., 350–400 MW) take ~10–15 min[2†L412-L419][2†L472-L479]. Ramp rates are also high: ~12.5 MW/min for a 50–60 MW turbine, up to ~60 MW/min for a 350 MW class machine[2†L412-L419][2†L472-L479].

OCGT peakers burn **natural gas** as the primary fuel. Backup distillate (diesel/kerosene) may be used for reliability or cold starts, but such fuels dramatically increase emissions. Many manufacturers now offer "hydrogen-ready" combustors; for example, Siemens Energy reports testing up to 38.8% H_2 by volume in an SGT-6000G frame turbine [80†L189-L197]. Blending hydrogen reduces CO_2 emissions roughly in proportion to blend fraction[80†L189-L197], though high H_2 fractions can raise flame temperature and NO_x (requiring more SCR). Long-term developments target 100% hydrogen turbines.

Emission controls: Lean-premixed combustors (DLN) keep flame temperatures low, inherently reducing NO_x. Water or steam injection further quenches NO_x formation. Post-combustion **Selective Catalytic Reduction (SCR)** can remove ~80–95% of NO_x[71†L795-L803]. Often, separate catalysts oxidize CO and VOC; some systems (e.g., SCONOx) combine NO_x reduction with oxidation. Typical permit NO_x limits for new OCGTs with SCR are on the order of 2–9 ppmvd (15% O_2)[74†L870-L879]. CO oxidizers ensure exhaust CO is <50–100 mg/Nm³ (e.g. ~57

mg/Nm³ target)[19†L342-L351]. Natural gas contains virtually no sulfur, so SO_2 is negligible (pipeline gas <5 ppm S)[19†L367-L370]. Particulates are also tiny: EPA AP-42 notes <1 mg/GJ $PM_{2.5}$ for natural-gas turbines[7†L231-L239].

Table 2.1 Typical ranges of key parameters and controls for modern gas OCGT peakers.

Characteristic	Range / Typical	Notes / Citation
Capacity (simple-cycle)	~5–400 MW	Aero derivatives ~5–50 MW; frames up to ~400 MW[2†L412-L419].
Efficiency (LHV)	~30–43%	Up to ~41.5% in large models[2†L412-L419].
Start-up time (cold→full)	~3–15 min	~3 min (small turbines); ~10–13 min (large frames)[2†L412-L419].
Ramp rate	~10–60 MW/min	e.g. 12.5 MW/min (50 MW unit); 60 MW/min (350 MW unit)[2†L412-L419].
Fuel	Pipeline natural gas (<5 ppm S); backup diesel	Modern gas: some units H_2-capable (up to ~40% tested)[80†L189-L197].
H_2 blending potential	~10–50% by vol. (near-term)	Tested ~38.8% H_2 in Siemens frame[80†L189-L197].
NO_x controls	DLN burners, water/steam inj., SCR	Typical exhaust NO_x limits ~2–9 ppm with SCR[74†L870-L879].
CO controls	Oxidation catalyst (SCR may help)	Ensure CO <50–100 mg/Nm³[19†L342-L351].
VOC controls	Fuel cleanup; oxidation catalyst	Formaldehyde, etc., are catalytically oxidized.
SO_2	≈0 (natural gas)	Pipeline gas S <5 ppm; negligible SO_2[19†L367-L370].
$PM_{2.5}$	<1 mg/GJ	EPA: “negligible with natural gas”[7†L231-L239].

Emissions Profiles and Factors

OCGT peakers emit mostly CO_2 and NO_x (from fuel and combustions), plus small amounts of CO and VOC. Table 2.2 summarises emission factors (per fuel energy) under various control scenarios, based on EPA AP-42 and permit data. An uncontrolled lean-premix gas turbine emits roughly 0.10–0.32 lb NO_x/MMBtu (~100–300 mg NO_x/GJ) and ~0.015 lb CO/MMBtu[9†L662-L666]. DLN/water injection can reduce NO_x to ~0.09–0.13 lb/MMBtu [9†L662-L666]. With full SCR, exhaust NO_x drops to single-digit ppm (~≲5–25 ppm, ≲10 mg/GJ). CO and VOC (mostly unburnt fuel) are low at high load (<10 ppm) but can spike at low load or during startup.

Table 2.2 Representative gas turbine emission factors by control configuration.

Pollutant	Uncontrolled Gas Turbine	With DLN/Water Injection	With DLN + SCR / Oxi-cat
NO_x	~0.10–0.32 lb/MMBtu (100–300 mg/GJ)[9†L662-L666]	~0.09–0.13 lb/MMBtu (90–130 mg/GJ)[9†L662-L666]	≪0.01 lb/MMBtu (<10 mg/GJ; ~5–25 ppmvd)
CO	~0.082 lb/MMBtu (uncontrolled); 0.015 lb lean-premix[9†L662-L666]	Similar or up to ~0.10 lb/MMBtu at low load	<100 mg/Nm³ (limit ~57 mg/Nm³)[19†L342-L351]
VOC	Very low (<0.005 lb/MMBtu)	Low	≪50 mg/Nm³
SO_2	≈0 (due to low-sulfur gas)[19†L367-L370]	N/A	N/A
$PM_{2.5}$	<1 mg/GJ[7†L231-L239]	N/A	N/A
CO_2 (exh.)	~55–65 lb/MMBtu (~300–360 kg/MWh)	Slight improvement with water	*Similar*

Note: lbs/MMBtu → g/GJ ≈105.5. CO_2 intensities: ~400–500 kg/MWh for ~30–35% eff.

Emissions vary with load and transient behaviour. At low loads (<50% output), flame instability often causes NO_x (ppm) and CO to rise. Cold starts can produce brief spikes in CO and particulates until the turbine warms up. Thus, a peaker's brief, high-power operation can emit disproportionately per MWh compared to a steady-running baseload unit.

2.3 Deployment Trends and Siting

Peakers are spread across power grids. In the U.S., 999 peakers (as of 2021) are heavily concentrated in high-demand regions: Northeast, Midwest, California, Texas[76†L304-L308]. Many serve local needs (e.g., New York City's Queens/Bronx peakers, California valley peakers). New-build OCGTs are currently being proposed to support renewables and data centres. For instance, the Global Energy Monitor (2024) notes ~252 GW of proposed U.S. gas capacity, ~32% of which is for data centers [32†L158-L166][32†L194-L200]. Examples: Google/Crusoe's ~900 MW "Goodnight" plant (Texas, 2022)[29†L125-L134]; OpenAI/Oracle's ~2.2 GW "Project Jupiter" (New Mexico, 2024)[29†L139-L143]; dozens of sub-100 MW installations in Ontario and Alberta. California operates ~80 fossil peakers, about half of which are in disadvantaged communities [52†L64-L70].

In Canada, large OCGTs are fewer. Ontario and Alberta maintain on the order of tens of gas turbine peakers (10–200 MW) for grid peaks. Siting is similarly near load or urban centers (e.g., Toronto, Edmonton ring). Canada's 2017 federal guidelines apply to all new gas turbines nationwide[2]. (Detailed inventories for peakers are sparse; provincial permit databases list major units.)

Peakers often lie within a few kilometres of people. GAO modelling found that historically disadvantaged U.S. communities are, on average, 9% closer to the nearest peaker than less-disadvantaged areas[76†L316-L324]. In dense cities (NYC, Chicago, LA, Toronto), peakers are embedded in residential/industrial neighbourhoods. This proximity means local air impacts matter greatly, raising environmental justice concerns.

2.4 Regulatory Framework and Emission Limits

2.4.1 United States:

New OCGTs fall under EPA's New Source Performance Standards (40 CFR 60). Subpart IIII applies to smaller turbines, OOOO to larger units. Standards are output-based: typically ~42–150 mg NO_x/kWh (depending on size), translating to ~15–40 ppmvd for 25–90 MW turbines[58†L154-L162]. In practice, compliance is via DLN combustion plus SCR. The EPA's 2024 proposal would tighten NO_x limits further (essentially requiring SCR on all new turbines)[58†L154-L162]. Fuel-sulphur limits (20 ppm max) ensure exhaust SO_2 ≪2 ppm. CO and VOCs are regulated by output-based standards (e.g., ~96 mg/kWh for CO). The NAAQS for ozone/PM create planning obligations for regions but do not specifically govern individual peakers.

States use PSD/BACT and Title V permitting to enforce additional limits. For example, California's BACT for new simple-cycle turbines is often ~2–3 ppm NO_x with SCR[74†L870-L879][74†L883-L892]. Other states set comparable low single-digit ppm limits. Title V permits typically cap NO_x at 6–9 ppmvd and CO at ~50–80 ppm, with required CEMS or periodic testing.

Some jurisdictions (e.g., Texas, New York) also place peakers into statewide emissions trading or cap programs, and may restrict operating hours for high-emitting older units.

2.4.2 Canada:

The 2017 *Combustion Turbine Guidelines* set national benchmarks. For **new** turbines ≥4 MW, the NO_x limit is 25 ppmv @15% O_2[26†L278-L283]. Peakers <4 MW are largely exempt. No SO_2 standard is imposed in these guidelines[2] (given gas fuel). Provinces can and do set tougher rules: e.g., BC proposed 5–10 mg/Nm³ NO_x (~45–90 ppm) for SCR-equipped machines, or up to 30–50 mg/Nm³ (~270–450 ppm) if no SCR[19†L342-L351]. Ontario's draft A-5 guideline similarly envisages ~10–24 mg/Nm³ limits (≈25–60 ppmv). Canadian regulations also target CO/VOC (e.g., CO ~57 mg/Nm³). Continuous monitoring of NO_x/CO is generally required for units above ~1 MW. Local air zone regulations may impose additional constraints. In summary, Canadian OCGTs must meet low NO_x levels, and fuel specs ensure negligible SO_2/VOC.

Many existing peakers operate under older permits ("grandfathered" standards) and may lack the latest controls. However, trend-setting legislation (e.g., New York's Law 97, California's Long-Term Procurement Plans) is pushing for zero-emission peaker replacements. In all cases, regulatory focus is on limiting NO_x/CO emissions and ensuring fuel sulphur is minimal.

2.5 Operating Patterns

By design, peaker plants run only during high demand. Typical annual operating hours are often <1,000–1,500, concentrated in hot summer afternoons or winter peaks. For example, a recent definition (Energy Information Admin.) states that peaking turbines operate an average of ≤1,500 h/yr [2]. In 2021, U.S. peakers produced ~3.1% of power despite 19% capacity[76†L304-L308]. Some peakers run only a few hours a week, then idle for days.

Grid dispatch requires fast cycling. OCGTs can spin up in minutes, so utilities often keep them spinning lightly (synchronous standby) or fully off. Turndown ratios vary: many OCGTs can

throttle down to ~30–50% of max load, but emissions (CO, NO_x) worsen at low load. Frequent on/off cycling also increases wear and can temporarily raise emissions (e.g., richer combustion on start-up). Utilities thus measure not just generation but the number of starts and total running hours.

Because peakers run little but intensely, their emission intensity (g/kWh) is high. A major study found that, per unit generation, peakers emit substantially more pollutants: e.g., the GAO reported peakers' median SO_2/kWh was 1.6× that of non-peakers[85†L327-L334]. In short, a small amount of generation from peakers can create a disproportionate fraction of local pollution.

Table 2 summarizes typical emissions by control configuration (see next section).

2.5 Health Impact Evidence

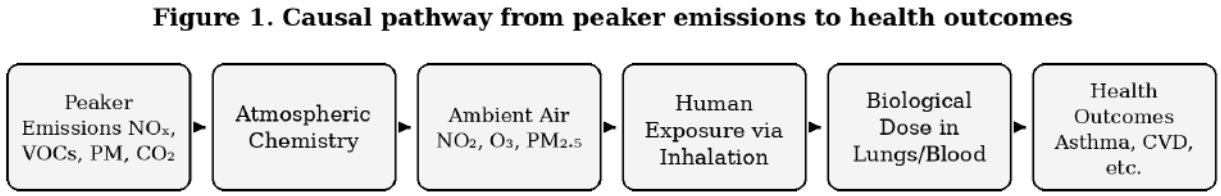
2.5.1 Exposure Pathways

OCGT emissions affect health primarily through ambient air exposure. Stack NO_x and VOCs produce ozone (O_3) in sunlight; NO_2 and ultrafine particles contribute to $PM_{2.5}$. Inhalation of these pollutants is the main route of exposure. NO_2 and O_3 are respiratory irritants (triggering asthma, bronchitis)[62†L208-L215]. $PM_{2.5}$ penetrates deep into lungs and bloodstream, aggravating heart disease and stroke[50†L119-L124]. Short-term spikes in NO_2/O_3 from peaker runs can provoke acute asthma attacks; daily $PM_{2.5}$ peaks increase hospital admissions. Chronic exposure to these pollutants increases mortality (e.g., ~6–10% increase per 10 µg/m³ $PM_{2.5}$[6]).

Figure 2.3 summarizes this causal pathway: peaker emissions → atmospheric chemistry (O_3/secondary PM) → inhalation exposure → biological dose → health outcomes (respiratory, cardiovascular, etc.). Each step is well-established in air pollution science. For example, epidemiologic studies show that each 10 ppb rise in O_3 is associated with ~1–3% increase in daily asthma ER visits, and each 10 µg/m³ rise in $PM_{2.5}$ with ~6% increase in daily mortality. These

dose–response relationships imply that any incremental exposure from nearby peaker emissions can measurably affect local health.

Figure 2.3 The causal pathway from peaker emissions to health.



2.5.2Key Epidemiological Findings

Multiple studies quantify health effects near power plants. Table 3 (below) summarizes selected findings. Highlights include:

- **Liu et al. (2012)[7]** – *Ecological, NY State:* Compared ZIP codes with/without power plants (gas/coal). After adjusting for age, income, etc., asthma hospitalization (age ≥10) was 11% higher (95%CI +3–+20%) in plant ZIPs; acute respiratory infection (ARI) +15% (+7–+25%); COPD +17% (+9–+25%)[62†L173-L182]. No effect was seen in children under 10.
- **Casey et al. (2020)[8]** – *Natural experiment, Louisville KY:* One coal-fired peaker was converted to gas (with SCR) in 2017. Using difference-in-differences, pediatric and adult asthma hospital/ED visits decreased by ~25–30% post-conversion [43†L283-L292]. Adult asthma hospitalizations fell ~25%; pediatric ED visits likewise. Emergency medication use also decreased.
- **Clemons et al. (2022)[9]** – *Time-series, Louisville KY:* Examined urgent care/ED asthma visits around the same plant conversion. Mean monthly visits fell from 163.9 (SD 12.4) before the switch to 100.3 (SD 11.2) after ($p<0.001$)[48†L324-L332], a 39% reduction.
- **Rodriguez-Villamizar et al. (2018)[10]** – *Spatial cluster, Edmonton:* Used scan statistics on childhood asthma ED visits (2004–2010). A highly significant cluster (RR≈10.4,

p<0.01) overlapped the coal power plant area[64†L323-L332]; risk declined ~1% per km from the plant. No cluster was found near a petrochemical site.

- **Harris et al. (2015)[11]** – *Case-control, Florida births:* Linked mother's residence to nearest fossil plant. Each 5 km closer raised odds of term low birth weight by OR=1.011 (95%CI 1.002–1.020), preterm by OR=1.018 (1.013–1.023), very preterm by OR=1.022 (1.010–1.034)[68†L467-L474]. Highest risks were in the <5 km zone. Effects were stronger for oil and waste plants than for coal.

Other studies (not in Table 2.4) consistently show $PM_{2.5}$ and NO_2 exposures from combustion sources lead to more asthma attacks, COPD exacerbations, heart attacks, and strokes. A large U.S. study found that every 10 µg/m³ reduction in $PM_{2.5}$ yields thousands fewer deaths nationally. No specific studies have tied natural-gas peakers to cancer or neurodevelopment, but these outcomes are plausible via $PM_{2.5}$/NO_2 pathways.

2.5.3 Study methods:

Designs range from ecologic regressions (like Liu), to cohort and case–control (Harris), to quasi-experiments (Casey/Clemons). Exposure metrics include simple distance or presence, and in some cases modelled concentrations. Confounders adjusted for in various studies include age, sex, SES, smoking rates, traffic pollution, and urban/rural status. The strongest evidence comes from interventions (plant retrofit or retirement) that show before/after health changes. Limitations include possible residual confounding by other local sources (traffic, industry) and the ecological nature of area-level studies.

Table 3 provides a concise comparison of these key studies, including their location, design, exposure metric, outcomes, and effect sizes. These all reinforce that living near high-emission power plants raises respiratory and cardiac disease incidence.

Table 2.4 Selected studies of power plant emissions and health outcomes.

Study (Year)	Design / Location	Exposure Metric	Outcomes	Key Findings	Quality
Liu et al. 2012[7]	Ecological (NY State)	Plant in ZIP (yes/no)	Asthma, ARI, COPD hospitalizations	Asthma +11% (CI +3–+20%); ARI +15% (+7–+25%); COPD +17% (+9–+25%)[62†L173-L182]	★★★☆
Casey et al. 2020[8]	Diff-in-diff (Louisville, KY)	Pre/post coal→gas retrofit	Asthma hospital & ER visits	Pediatric asthma visits ↓~25%; adult asthma admissions ↓~30%[43†L283-L292]	★★★★
Clemons et al. 2022[9]	Time-series (Louisville, KY)	Pre/post coal→gas switch	Pediatric asthma ED visits	Visits ↓39% (mean 163.9→100.3); $p<0.001$[48†L324-L332]	★★★☆
Rodriguez et al. 2018[10]	Spatial cluster (Edmonton)	Distance to coal plant	Childhood Asthma ED visits	RR≈10.4 for cluster near plant ($p<0.01$); risk declines ~1%/km[64†L323-L332]	★★★☆☆
Harris et al. 2015[11]	Case–control (Florida)	Distance to nearest plant	LBW, preterm birth	OR per 5 km closer: LBW 1.011 (1.002–1.020); preterm 1.018 (1.013–1.023); VPTD 1.022 (1.010–1.034)[68†L467-L474]	★★★☆
Other studies (2010–2022)	Various (US, Europe)	Various (prox, modelled)	Asthma, CVD, birth outcomes	Consistent: $PM_{2.5}$/NO_2 exposure worsens respiratory/CV outcomes[50†L119-L124][62†L208-L215]	★★★☆

★ = study strength (high = large sample, strong design). Effect sizes are adjusted risk differences or ORs with 95% confidence intervals. Studies controlled for major confounders as noted.

2.6 Spatial Analysis and Modelling

Researchers use Geographic Information Systems (GIS) and air dispersion models to link peaker emissions with health outcomes. **Proximity analyses** (e.g. Harris 2015) assume exposure decays with distance from the plant. **Dispersion modelling** (e.g., AERMOD/CMAQ) uses stack parameters and meteorology to predict ambient concentrations at receptor locations. Modelling is more precise but data-intensive. Studies often combine both: e.g., modelling plume transport to refine population exposure by distance.

Strengths of modelling include accounting for wind patterns and stack height (proximity alone misclassifies exposures if wind blows emissions away). Weaknesses include limited data on short-

term peaker emissions and complex meteorology. Proximity methods are simpler but can be confounded by other nearby sources. Some analyses use spatial regression (kriging, GAM) to adjust for such confounders. Overall, using multiple methods (cluster detection, regression, quasi-experiments) increases confidence in the results.

Data Sources for Further Analysis
Quantifying peaker impacts requires multiple datasets:

- **EPA Air Quality System (AQS):** Monitored ambient NO_2, O_3, $PM_{2.5}$ levels by location/time. Useful for correlating local peaks with peaker operation.
- **EPA Air Markets Program Data (AMPD):** Hourly emissions (NO_x, CO_2, etc.) for large generators. Identify exactly when each peaker ran and emitted pollutants.
- **State CEMS / Title V reports:** Continuous emissions (NO_x, CO) for many turbines (often ≥1 MW). State data (e.g., CA-DATAMART) fill gaps below federal thresholds.
- **National Emissions Inventory (NEI) / NPRI:** Annual emissions of NO_x, SO_2, PM from all sources (aggregated by county/plant). Useful for regional source apportionment.
- **US Census / ACS:** Population counts, demographics by tract/ZIP. Needed to assess exposed populations and adjust for SES.
- **Health registries:** Hospital discharge/ED databases (ICD-coded asthma/CVD admissions), birth records (gestational age, weight) by residential area. Many studies (e.g., Liu, Harris) used state vital records and Medicaid data.
- **Satellite/Air Quality Models:** Gridded $PM_{2.5}$ and NO_2 estimates (NASA, EPA CMAQ, etc.) to estimate exposure where monitors are sparse.
- **Weather data:** Reanalysis or local measurements (wind, inversion layers) for air dispersion modeling.

By linking power plant emissions (from AMPD/CEMS) through dispersion or proxies to these health datasets, researchers can refine dose–response estimates for peaker populations.

Data Gaps, Uncertainties, and Recommendations

Key gaps for gas peakers include: (1) **Transient emissions data:** Many emissions regulations focus on steady-state rates, but health impacts may be driven by short-term peaks (startups, ramp-ups). Better monitoring of these events (e.g., continuous monitoring of $PM_{2.5}$ or ultrafines during startup) is needed. (2) **Peaker-specific epidemiology:** Most health studies group all fossil plants; targeted studies of gas turbine plumes are lacking. (3) **Long-term outcomes:** Few studies examine cancer or neurodevelopment near gas plants. (4) **Confounding exposures:** Distinguishing peaker impacts from traffic or other industries remains a challenge, requiring careful study design.

Recommendations: Establish continuous CEMS for even small peakers, including advanced pollutant monitoring. Encourage epidemiological studies linking hourly emissions (from AMPD/CEMS) with time-series health data (ED visits, ambulance calls). Deploy local air monitors (O_3, NO_2, $PM_{2.5}$) around peaker sites, especially in vulnerable communities. Integrate dispersion models with GIS to produce high-resolution exposure maps. Consider using novel exposure tracers (e.g. chemical fingerprints) to confirm plant-attributed pollution.

2.7 Policy Implications

Given these findings, policymakers should treat gas peaker emissions as a public health concern. Stricter emission controls (e.g., universal SCR, low-NO_x burners) should be applied even to rarely-run peakers. When feasible, peakers should be replaced with clean alternatives: battery storage, demand response, or dispatchable renewables. Urban planners should consider peaker locations relative to homes and schools; existing peakers in sensitive areas may warrant early retirement or mitigation. Environmental justice requires that disadvantaged communities not bear disproportionate pollution burdens – data show they currently do[1]. Future energy planning must balance grid reliability with local air quality and health, potentially reserving peaker dispatch for absolute necessity and ensuring rapid transition to zero-emission peakers in dense regions.

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CHAPTER 3 TRAFFIC, TRANSPORTATION, ROAD SAFETY AND STATUTORY COMPLIANCE

3.1 Introduction and Scope

This chapter addresses the traffic, transportation, road safety, and statutory road-consent issues arising in relation to Bord Gáis Energy's proposed open-cycle gas turbine development, known as the Cashla Peaker Plant, at the townlands of Rathmorrissy and Pollnagroagh, Athenry, County Galway, the subject of Pre-Application Consultation ABP-320975-24 and formal application ABP-324113-25. It is respectfully submitted that the material lodged with the application does not permit the Board to conclude, on a robust or lawful basis, that the development can be constructed without unacceptable consequences for the operation and safety of the local road network or for the M6 motorway corridor.

The most serious matters are the absence of any standalone Traffic Impact Assessment or Road Safety Audit, the limited nature of the baseline traffic evidence, the deferral of significant detail to a future Construction Traffic Management Plan, and the absence of any documented consent under section 53 of the Roads Act 1993 for works beneath the motorway. These are not peripheral defects. They address the legal permissibility, safety, and assessability of the development and should be read cumulatively with the other grounds of objection.

3.2 Development Context and Traffic Documentation

The pre-application file is notable for what it does not contain. It includes the Inspector's report and Board correspondence, and it identifies the site as adjoining a third-class or local road connection into Athenry, but it contains no quantitative traffic analysis, no Construction Traffic Management Plan, no haul route audit, and no detailed traffic or road safety study. In other words, the pre-application stage did not furnish the Board with substantive transport material beyond a basic description of the road context.

The formal application is accompanied by EIAR Volume 2, Chapter 10, together with a number of supporting appendices, most notably Appendix 2.7 concerning construction methodology for the underground connection works, Appendix 2.11 comprising the Construction Traffic Management Plan, and the civil engineering and pavement reports relevant to reinstatement. The Planning Statement also refers to the traffic chapter and to policy requirements. Notwithstanding that body of material, there remains no standalone Traffic Impact Assessment, no independent Road Safety Audit, no third-party transport consultant's report, no documented road opening licences, no road closure notices and no evidence of any formal consent from Transport Infrastructure Ireland for the motorway crossings.

3.3 Material Deficiencies in the Traffic Assessment

That omission is material. The proposed development involves heavy goods vehicles, abnormal loads, temporary traffic controls, construction compounds, trenching within or alongside the local road network, and two trenchless crossings beneath the M6 motorway. Yet the principal traffic chapter remains summary in nature and is unaccompanied by the kind of supporting junction assessment, route-by-route traffic survey data, peak-period analysis or abnormal load study ordinarily required to substantiate an assertion that no significant adverse impact will arise.

The documentation refers to baseline traffic determination and mentions an automatic traffic count on the L3103 within the CTMP material. However, the application does not provide a transparent, network-wide evidence base capable of independent scrutiny. There is no clear classified count information for all roads affected by the trenching works, no meaningful assessment of school-time or commuter peaks, no detailed consideration of agricultural vehicle interaction on rural roads, no route capacity analysis for diversionary movements, and no published junction-by-junction appraisal. In those circumstances, the Board is being asked to accept the conclusion of minimal impact without being provided with the evidential foundation necessary to test it.

A further difficulty is that the CTMP for the plant site itself is expressly described as an outlined document, with a final plan to be agreed later with Galway County Council and, where required, with TII. It is not appropriate that matters of this significance be deferred to a post-permission process, where they go to the acceptability of the development in principle. A 'manage by condition' approach cannot cure a failure to assess the likely traffic and road safety effects of the project before consent is sought.

3.4 Applicant's Proposed Mitigation Measures

The applicant proposes a range of measures intended to reduce construction impacts. These include routing construction vehicles along the existing local and regional road network, scheduling abnormal loads outside peak hours and under Garda escort, providing temporary warning signage and speed controls in accordance with Chapter 8 of the Traffic Signs Manual, restricting active work areas on single-lane rural roads to short sections with alternating one-way traffic, maintaining a minimum carriageway width for passing traffic, sweeping roads daily, using street-washing measures where necessary, and keeping worker parking within the site compound. Those measures are sensible in principle, and no objection is taken to them as generic mitigation tools. The difficulty is that they are generic. They do not amount to a project-specific demonstration that the local road network can safely and lawfully absorb the proposed pattern of works. Nor do they overcome the absence of the statutory consents and road safety processes required where the national road network is affected. The repeated commitment that details will be agreed later with the roads authority and with TII serves only to underline that the application has been brought forward before essential transport matters have been resolved.

3.5 Underground Connection / Pipeline Works in Relation to the M6 and the Local Road Network

The underground connection or pipeline works are stated to extend for approximately 7.6 kilometers and to follow local road corridors from Rathmorrissy eastwards towards Cashla. The

route interacts directly with a number of local roads, including roads identified in the application material, such as the L7109, L71093, L7108, and the L1013/L1310 area. The M6 motorway is crossed twice by horizontal directional drilling at an indicated depth of approximately five meters below ground level.

Even accepting that the motorway carriageway itself will not be opened by reason of the trenchless construction method, the works are plainly connected to and dependent upon the national road corridor. They require access, construction staging, plant movements, traffic management, and safety controls in the vicinity of the M6, which is part of the trans-European road network. Elsewhere, the local road works involve trenching within the existing roadbed or verge, temporary closures or restrictions, one-way working, and reinstatement. These are narrow rural roads serving local residents and ordinary agricultural and domestic traffic. In the absence of a proper route-by-route capacity and safety appraisal, the Board cannot simply assume that the proposed rolling traffic arrangements will operate without delay, conflict, or hazard.

3.6 Failure to Demonstrate Compliance with Applicable Standards and Law

3.6.1 Transport Infrastructure Ireland Requirements

The first and most important regulatory failure concerns the road safety audit. TII's Road Safety Audit requirements apply to developments affecting national roads, and Galway County Development Plan Policy NR3 expressly mirrors that requirement by calling for both a Traffic and Transport Assessment and a Road Safety Audit where major development has implications for the national road network. No Road Safety Audit or equivalent independent safety appraisal accompanies the application. That is a serious omission. Road safety audit is not a decorative add-on; it is a structured safeguard designed to identify hazards before works proceed.

The second major failure concerns section 53 of the Roads Act 1993. The applicant's own material states that the M6 is to be crossed twice by horizontal directional drilling. Works in, on, under, or over a motorway require the consent of TII. The application discloses no such consent. Instead,

the CTMP merely contemplates future liaison with TII at construction stage. That is not compliance. Where the motorway crossings are integral to the development, the Board should not grant permission on the basis of an assumption that the necessary consent will later be forthcoming.

3.6.2 Galway County Development Plan and Local Policy Requirements

The Galway County Development Plan contains a number of provisions directly engaged by this proposal. Policy NR3 requires that developments affecting national roads be accompanied by a Traffic and Transport Assessment and a Road Safety Audit. Policy WM5 requires that construction management documentation address the timing and routing of construction traffic, signage, queuing avoidance, and the prevention of debris or spillages on adjoining roads. Development Management Standard 35 requires appropriate road reinstatement and contemplates the need for road opening licences where works interface with the public road.

The application only partially addresses those requirements. The outline CTMP does refer to signage, stop-go traffic control, road sweeping, and liaison with the local authority. However, partial narrative compliance is insufficient when the underlying assessment remains incomplete. There is no evidence that the Policy NR3 requirement for a Road Safety Audit has been met. Nor is there any documentary evidence that the road opening and reinstatement regime anticipated by the Development Plan has been applied for, agreed in principle, or integrated into the project design.

3.6.3 Irish Statutory Requirements

At the statutory level, the Roads Act 1993 is directly relevant. Section 53 requires consent for works in, on, under, or over a motorway. Section 75 provides a mechanism for road closures, and excavation or interference with a public road ordinarily requires the appropriate local authority licensing and control processes. The application contains no section 53 consent, no section 75 road closure order, and no evidence of road opening permissions for the affected local roads.

It may be said on behalf of the developer that these are matters for later construction-stage administration. Respectfully, that is not sufficient in the circumstances of this case. The underground motorway crossings and the extensive local road works are not incidental or separable elements; they are integral to the delivery of the permitted development. The Board is therefore entitled, and indeed obliged, to ask whether the project has been advanced in a form that is legally realistic and properly assessable before any permission issues.

3.6.4 EU Safety and TEN-T Considerations

The M6 forms part of the trans-European road network. Although the TEN-T Regulation and the Road Infrastructure Safety Directive do not, in themselves, create a freestanding ground of refusal in the present context, they reinforce the importance of a safety-led approach to any project interfacing with that corridor. At the very least, they point strongly towards the need for a rigorous, documented, and independently checked road safety process.

Likewise, the EIA regime requires the likely effects of a project on traffic and transport to be adequately described and assessed. While the application includes a traffic chapter, the absence of a Road Safety Audit, the limited baseline data, and the deferral of material detail to a later CTMP significantly weaken the Board's ability to undertake a full and reasoned assessment of traffic effects at the decision-making stage.

3.7 Material Consequences for the Board's Assessment

Taken together, the deficiencies in the traffic material are serious and cumulative. The most significant are: first, the absence of any Road Safety Audit for a project affecting the national road network; secondly, the absence of any documented section 53 consent for the motorway crossings; thirdly, the lack of an adequately transparent baseline traffic evidence base; and fourthly, the reliance on an outline CTMP to be finalised after permission. Other matters, such as the absence of documented road opening licences, closure procedures and queue management detail, reinforce the overall conclusion that the traffic assessment is underdeveloped.

In those circumstances, the Board cannot be satisfied that the development complies with the Development Plan, with TII safety requirements, or with the relevant statutory road-consent framework. Nor can the Board safely proceed on the assumption that these deficiencies may be regularised after permission by means of consultation or condition. The applicant's assertion that the project will not give rise to significant adverse traffic effects is, on the material lodged, an untested conclusion rather than a demonstrated finding.

3.8 Conclusion, Relief Sought and Alternative Conditions

3.8.1 Primary Relief: Refusal of Permission

For the foregoing reasons, it is respectfully submitted that permission should be refused. The application fails to demonstrate, by way of sufficient and reliable evidence, that the development can be constructed without an unacceptable impact on traffic operations and road safety, particularly at the M6 motorway interface and on the affected rural roads. The omission of a Road Safety Audit, the absence of documented consent under section 53 of the Roads Act 1993, and the inadequacy of the baseline traffic analysis are each individually serious; collectively, they render the application premature and contrary to the proper planning and sustainable development of the area.

3.8.2 Without Prejudice: Conditions Required if Permission is Granted

Without prejudice to that primary position, if the Board is nonetheless minded to grant permission, no final order should issue unless stringent pre-commencement and construction-stage traffic conditions are imposed to address the defects identified above. At a minimum, the following conditions should be required:

(1) an independent Road Safety Audit, together with the corresponding Designer's Response, for all elements of the project affecting the national and local road network, including the motorway crossings, construction traffic routing, site access arrangements, and any abnormal load movements;

(2) a prohibition on any works affecting, adjoining, or passing beneath the M6 motorway until formal consent under section 53 of the Roads Act 1993 has been obtained from Transport Infrastructure Ireland and furnished to the planning authority and the Board;

(3) submission and approval, prior to commencement, of a final Construction Traffic Management Plan containing route-specific traffic counts, lane closure layouts, signage schedules, diversion arrangements, emergency access procedures, abnormal load protocols, queue management measures, school-time protections, and road-cleaning and monitoring procedures;

(4) production of all necessary road opening licences, road closure consents and reinstatement approvals from Galway County Council in respect of the affected local roads, together with a commitment to comply fully with the applicable reinstatement specification;

(5) a pre-commencement and post-construction condition survey of all roads to be used by construction traffic, with responsibility on the developer for the repair of any damage attributable to the works; and

(6) ongoing written liaison with Galway County Council Roads Section and Transport Infrastructure Ireland throughout the works, with quarterly compliance reporting and an immediate obligation to cease or modify operations if directed by the relevant roads authority on safety or traffic management grounds.

This chapter is grounded in the application documentation referred to in the objection materials, including EIAR Volume 2, Chapter 10; EIAR Appendix 2.7; EIAR Appendix 2.11; the Planning Statement; the Galway County Development Plan policies relied upon in the application materials; and the relevant provisions of the Roads Act 1993 and TII guidance.

Chapter 4
Climate and Environmental Law Assessment of the Mason Hayes & Curran Letter in Support of the Cashla / Rathmorrissy Open Cycle Gas Peaker Plant

4.1 Introduction

This chapter assesses the legal position advanced in the letter entitled "Cashla Peaker Plant Development (the 'Proposed Project')", reference MHC/43206.34 and document number MHC-39634763-1, dated February 2026, issued by Mason Hayes & Curran LLP ("MHC") for Bord Gáis Energy Limited, 1 Warrington Place, Dublin 2. The letter states that it is provided to supplement and support the planning application for the proposed project. It relies principally on section 15 of the Climate Action and Low Carbon Development Act 2015, as amended, Climate Action Plan 2025, the policy paper Energy Security in Ireland to 2030, the revised National Planning Framework, and recent Irish case law including Coolglass Wind Farm Limited v An Coimisiún Pleanála [2026] IESC 5 and Friends of Kilmoney v An Coimisiún Pleanála [2025] IEHC 407.

The key issue is whether the letter accurately reflects the current domestic and European legal framework, including the Renewable Energy Directive regime (RED I, RED II and RED III), the Aarhus Convention, the EIA Directive, the EU Climate Law, the EU ETS regime, the Industrial Emissions Directive, the Habitats regime and related air-quality law, and whether those instruments positively support, neutrally tolerate, or constrain the development of a new fossil-fuelled intermittent peaker plant at Rathmorrissy / Pollnagroagh, Athenry, County Galway.

4.2 Summary Conclusion

The MHC letter is only partly correct. It is correct that current Irish domestic policy recognises a short- to medium-term role for flexible gas generation in maintaining electricity security during the transition to a more renewable electricity system. It is also correct that section 15 of the Climate Act does not create an automatic rule that every emissions-generating project must be refused.

However, the letter overstates the legal effect of that policy support. The EU climate, renewables and environmental acquis does not positively endorse new fossil peaker plants. Instead, it promotes renewable energy, requires public participation, and imposes stringent obligations in relation to climate assessment, air pollution, habitats protection and environmental decision-making. The domestic policy support relied upon by the letter is transitional and qualified. It does not create any entitlement to permission, nor does it displace the requirement to demonstrate, by reasoned analysis, that the project is consistent, insofar as practicable, with climate objectives and otherwise complies with the planning, EIA, habitats, air-quality, and pollution-control codes.

4.3 Domestic Legal and Policy Framework

Section 15 of the Climate Action and Low Carbon Development Act 2015, as amended by the 2021 Act, requires a relevant body, insofar as practicable, to perform its functions in a manner consistent with the most recent approved climate action plan, the long-term climate strategy, the national adaptation framework, the national climate objective, and the objective of mitigating greenhouse gas emissions and adapting to climate change. The statutory phrase “insofar as practicable” is important. It means that the obligation is substantive, but qualified.

Climate Action Plan 2025 and the policy paper Energy Security in Ireland to 2030 do provide support for a continuing role for flexible gas generation as an interim security-of-supply measure. The revised National Planning Framework likewise recognises that gas remains a significant contributor to energy security during the transition. But these documents must be read as a whole. Their central direction is toward rapid decarbonisation, electrification, increased renewable penetration, flexibility, storage, interconnection, and reduced long-term dependence on fossil fuels. They support a transitional role for gas, not an open-ended or self-justifying role.

Accordingly, domestic policy assists the applicant only to a limited extent. It does not remove the need for a project-specific assessment of necessity, alternatives, climate consistency, cumulative emissions, technological choices, and environmental effects.

4.4 European Climate and Environmental Framework

RED I (Directive 2009/28/EC), RED II (Directive (EU) 2018/2001), and RED III (Directive (EU) 2023/2413) are all concerned with the promotion of renewable energy. RED III strengthens the legal framework for renewable deployment, renewable acceleration areas, and supporting grid and storage infrastructure necessary to integrate renewable energy. These directives do not positively support new fossil-fuelled peaker plants. At most, they provide indirect context as to why electricity systems increasingly require flexibility around variable renewable generation.

The Aarhus Convention does not substantively support the project. Rather, it strengthens the rights of the public to environmental information, participation in decision-making, and access to justice. Its significance in this context is procedural: it supports rigorous disclosure, proper scoping, meaningful consultation, and the availability of legal challenge where climate, biodiversity, air-quality, or other environmental obligations are not properly observed.

The amended EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) requires the assessment of likely significant effects on population and human health, biodiversity, land, soil, water, air, and climate, and of direct and indirect significant effects. The EU Climate Law creates a binding framework aimed at climate neutrality by 2050 and at least 55% net greenhouse gas reduction by 2030. The EU ETS Directive places power generation within a carbon-pricing regime, but does not confer planning support. The Industrial Emissions Directive, the Large Combustion Plant BAT framework, the Habitats regime, and the recast ambient air-quality rules likewise operate as constraints and control mechanisms. None of these instruments positively endorses new fossil peaker development.

4.5 Assessment of the Main Claims in the MHC Letter

The first major claim in the letter is that section 15 of the Climate Act supports the project because relevant bodies must act consistently with climate plans only insofar as practicable. That is only partly correct. Section 15 does not provide a safe harbour for emissions-generating projects. It requires an actual, reasoned consistency analysis. The existence of a broad policy preference for

flexible gas does not, of itself, demonstrate that this plant, in this location, with this scale, technology, and emissions profile, is lawfully consistent with climate objectives.

The second major claim is that the Climate Action Plan 2025, Energy Security in Ireland to 2030, and the revised National Planning Framework clearly support the proposed project. That again is only partly correct. Those documents do support a transitional role for flexible gas generation. However, that support is framed by the broader requirement to move toward an electricity-led, renewables-led, low-carbon system. The policy support is therefore conditional, temporary, and contextual. It cannot be treated as an unconditional endorsement of every proposed peaker plant.

The third major claim is that recent case law confirms that emissions-generating projects may properly be permitted notwithstanding climate policy. That is too broad. The recent cases do not establish a positive legal presumption in favour of fossil back-up infrastructure. They establish only that such projects are not automatically unlawful and that the decision-maker must reason carefully through the statutory and planning framework. The letter therefore uses the cases more aggressively than they fairly allow.

4.6 Irish and European Case Law

In Friends of the Irish Environment v Government of Ireland [2020] IESC 49, the Supreme Court quashed the 2017 National Mitigation Plan because it lacked the specificity required by the Climate Act. That judgment is important because it confirms that broad or aspirational climate policy statements are insufficient where the legal framework requires a clear and transparent pathway. The case supports the proposition that general policy references cannot substitute for specific, reasoned climate analysis in individual decisions.

In Coolglass Wind Farm Limited v An Coimisiún Pleanála [2026] IESC 5, the Supreme Court held that section 15 creates a legal standard more demanding than merely “having regard to” climate objectives, but less than strict compliance. The Court also made clear that there is no automatic EU-law presumption in favour of permission even for renewable projects. Coolglass therefore does

not provide blanket support for a gas peaker plant. It confirms only that consistency is a contextual and reasoned legal judgment.

In An Taisce v An Bord Pleanála [2022] IESC 8, the Supreme Court addressed indirect effects in environmental assessment. While the case does not create a universal rule that every upstream or downstream climate consequence must be assessed, it supports careful scrutiny where a project's wider emissions consequences are sufficiently linked, foreseeable and relevant.

The most favourable judicial statement for objectors appears in Friends of Kilmoney v An Coimisiún Pleanála [2025] IEHC 407, where the High Court is reported as stating that a project causing emissions should either be climate-neutral or be clearly provided for in the relevant climate action plan with enough specificity to enable the decision-maker lawfully to conclude that the project is compatible with climate goals. That reasoning is useful, but it remains High Court authority and should be used cautiously.

At the European level, Verein KlimaSeniorinnen Schweiz v Switzerland [2024] ECHR 304 confirms that failures in climate protection can engage Convention rights and that states must maintain effective frameworks for climate governance. Urgenda Foundation v State of the Netherlands (ECLI:NL:HR:2019:2007) likewise demonstrates that courts may require stronger mitigation action where climate duties are inadequately implemented. In R (Finch) v Surrey County Council [2024] UKSC 20, the UK Supreme Court held that downstream combustion emissions from a fossil project had to be assessed in EIA. Although not binding in Ireland, Finch is persuasive as to the need for a realistic treatment of the full emissions consequences of fossil-energy development.

4.7 Absence of Authority Positively Supporting Intermittent Fossil Peaker Plants

No Irish or European appellate authority has been identified which states that intermittent open-cycle gas peaker plants should be built, or that they are positively aligned with climate policy merely because they are intermittent, back-up or system-balancing infrastructure. The current case law does not go that far. Rather, the cases support a more limited proposition: broad policy support for

energy security does not remove the need for detailed legal analysis of climate consistency, environmental effects, alternatives, cumulative impacts, public participation rights, and pollution control.

This is particularly important where the project is a long-lived fossil installation proposed in a legal environment shaped by carbon budgets, the EU Climate Law, the rapid strengthening of renewables law, and increasingly strict procedural and substantive environmental protections.

4.8 Conclusion

The legal position put forward in the MHC letter is therefore incomplete and overstated. It correctly identifies a strand of current Irish policy supporting flexible gas generation as part of the transition. But it fails to acknowledge with sufficient clarity that this support is temporary, qualified and subordinate to a wider legal framework directed toward decarbonisation, renewables expansion, pollution reduction and meaningful public participation.

The more accurate legal conclusion is that the proposed Rathmorrissy / Pollnagroagh open-cycle gas peaker plant does not receive positive support from the principal European climate and environmental directives relied upon in this chapter. Those instruments instead provide the standards by which the project must be tested. The project can only lawfully proceed if the decision-maker is satisfied, on a fully reasoned basis, that the grant of permission is, insofar as practicable, consistent with climate obligations and that the project also complies with the EIA, habitats, air-quality, pollution-control, and public participation regimes. The MHC letter does not, in itself, establish that such a conclusion can lawfully be reached.

4.9 References

Climate Action and Low Carbon Development Act 2015, as amended, section 15.

Climate Action Plan 2025, Government of Ireland.

Energy Security in Ireland to 2030, Government of Ireland.

National Planning Framework, First Revision, April 2025.

Directive 2009/28/EC (RED I).

Directive (EU) 2018/2001 (RED II).

Directive (EU) 2023/2413 (RED III).

Directive 2011/92/EU as amended by Directive 2014/52/EU (EIA Directive).

Directive 2003/87/EC (EU ETS Directive).

Directive 2010/75/EU, as amended (Industrial Emissions Directive).

Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention), 1998.

Regulation (EU) 2021/1119 (European Climate Law).

Friends of the Irish Environment v Government of Ireland [2020] IESC 49.

An Taisce v An Bord Pleanála [2022] IESC 8.

Coolglass Wind Farm Limited v An Coimisiún Pleanála [2026] IESC 5.

Friends of Kilmoney v An Coimisiún Pleanála [2025] IEHC 407.

Verein KlimaSeniorinnen Schweiz v Switzerland [2024] ECHR 304.

Urgenda Foundation v State of the Netherlands, ECLI:NL:HR:2019:2007.

R (Finch) v Surrey County Council [2024] UKSC 20.

Mason Hayes & Curran LLP, reference MHC/43206.34, document MHC-39634763-1, February 2026, "Cashla Peaker Plant Development (the 'Proposed Project')", addressed to Bord Gáis Energy Limited, 1 Warrington Place, Dublin 2.

Chapter 5
Green Alternatives to OCGT Peaker Plants, Biomethane Availability, and the Transitional Nature of Need

This chapter updates the position on green alternatives to open-cycle gas turbine (OCGT) peaker plants, with particular emphasis on the present Irish biomethane position, the growing role of battery storage and low-carbon system services, and the increasing physical and market integration of Ireland into the wider British and European electricity system. It also considers the implications of those developments for the claimed long-term need for the proposed Cashla OCGT plant.

5.1 The Applicant's Case and the Central Difficulty

The EIAR seeks to justify the proposed Cashla plant as part of the "at least 2 GW" flexible gas target in Climate Action Plan 2025 and presents the project as aligned with the State's pathway to a climate-neutral economy. However, the same EIAR also states that there are no climate monitoring requirements, that there are no specific operational greenhouse gas mitigation measures, and that the discussion of future biomethane and hydrogen use is provided for information only and is not relied upon by the climate assessment, air quality assessment, or EIAR as a whole [1].

That is an important admission. It means that, as assessed, the project is a natural gas peaker plant rather than a biomethane or hydrogen project. The claimed future decarbonisation pathway is therefore speculative rather than embedded in the design basis relied upon for permission [1].

The EIAR also considered a shorter 20-year operating life but chose instead to seek operation until 31 December 2050. On the applicant's own evidence, therefore, the planning question is not merely whether flexible generation is needed in the short term, but whether a relatively inefficient fossil-fuel peaker plant has been shown to be necessary on this site for a period extending effectively to the net-zero deadline itself [2].

5.2 Biomethane in the Irish Gas System: Present Position and Practical Constraint

The present biomethane position in Ireland remains far more limited than the applicant's narrative suggests. Gas Networks Ireland's Winter Outlook 2025/26 states that current biomethane injection to the network is at low levels, around 15 GWh per annum [4]. This is a very small quantity in system terms and falls far short of a level that could credibly support a large new power plant claiming present-day compliance by way of renewable gas purchase or guarantees of origin.

The EPA's 2025 national greenhouse gas projections reinforce that point. The EPA does not model delivery of the full Climate Action Plan biomethane target of 5.7 TWh by 2030. Instead, its WAM scenario models only 4.3 TWh by 2030, aligning with Gas Networks Ireland's best-estimate scenario, while also making clear that further post-2030 zero-emission gas-fired generation from biomethane and green hydrogen is not currently included because no pathway to implementation is available [3].

Accordingly, the proposition that this plant will operate in a materially decarbonised way over its lifetime is not demonstrated. The current system contains only very limited amounts of biomethane. The State's own projections do not assume full delivery of the 5.7 TWh target by 2030. And the EIAR's own climate chapter does not rely on future biomethane, or hydrogen use as a mitigation measure [1][3][4].

5.3 Updated Position on Irish Biomethane / Biogas Projects

The table below presents a conservative, up-to-date overview of key Irish biomethane projects and connection initiatives, based on primary public sources. It illustrates three points. First, operational gas-grid biomethane remains very limited. Second, there is a significant pipeline of projects, but many are still at construction, connection, commissioning, or planning/appeal stage. Third, the long-term decarbonisation case for gas is therefore forward-looking and uncertain, not a present operational reality for the proposed Cashla

Status	Facility / initiative	County	Connection route	Approx. output / capacity	Current position	Why it matters
Operational	Cush Renewable Gas Injection Point / existing Irish network injection	Kildare	Existing network injection point	Historically 60 GWh entered at Cush in 2023; current biomethane injection in the Irish network is stated at c.15 GWh per annum in Winter Outlook 2025/26	Operational, but current system-wide biomethane levels remain low	Demonstrates that operational injection exists, but also shows how small present renewable gas availability remains [4][5][7].
Under construction	Evergreen Agricultural Enterprises, Monasterevin	Kildare	Direct grid connection	Up to 100 GWh/year	Under construction; Gas Networks Ireland states this is one of the contracted	Useful progress, but still modest compared with the likely fuel demand of

					plants moving toward connection	the wider gas system [6].
Under construction / commissioning	Mitchelstown Central Grid Injection (CGI) Hub	Cork	Central grid injection hub	Up to 700 GWh/year	Gas Networks Ireland states this hub is being developed to receive gas from multiple local producers	A major enabling project, but still future capacity rather than current supply [5][8].
Construction commenced	Nephin Renewable Gas – Ballinrobe	Mayo	Biomethane plant with offtake to Flogas / network development pathway	Output not clearly stated in the source reviewed	Construction officially began in September 2025; first of three plants under the announced initial rollout	Important evidence that the sector is moving, but not evidence of current large-scale renewable gas availability

						for Cashla [9].
Planned	Nephin Renewable Gas – further two plants	TBC	Expected future injection route / offtake developme nt	Not stated	Further two plants announced but locations were not yet named in the source reviewed	Shows pipeline intent, not operational delivery [9].
Proposed / development	Bia Energy Huntstown upgrade	Dublin	Gas-to-grid	>120 GWh/year	Developer indicates transition to gas-to-grid with material output when delivered	Another positive project, but still part of a pipeline rather than proof of current renewable gas sufficiency [10].
Portfolio announced; mixed	CycleØ four-plant Irish programme (Galway,	Multipl e	Direct injection proposals	c.40 GWh/year each according	Programme announced, but Kildare is on	Important because it shows sector ambition, but

planning status	Limerick, Kildare, Cavan)			to developer	appeal, Galway is on appeal following local refusal, and several sites remain at planning / developmen t stage	also the reality that delivery is slow and contested [11][12][13].
System planning	Gas Networks Ireland biomethane connection programme	Nationa l	Direct connection s and CGI pathway	NDP 2024 notes four signed connection agreement s and nine connection offers issued	Connection pipeline is expanding but has not yet translated into large volumes in the live system	Supports the conclusion that renewable gas is growing, but not yet available at the scale implied by the applicant's narrative [7][8].

The present public record therefore does not support any assumption that a new OCGT plant at Cashla will in the near term be materially decarbonised through biomethane procurement. What it supports is a conclusion that renewable gas development is real but still emerging, uneven, and highly dependent on future planning, construction, connection, and policy delivery.

5.4 Ireland Is Becoming More Interconnected with Britain and Continental Europe

Ireland's electricity system is no longer properly understood as a stand-alone island system with only internal balancing options. It is already interconnected with Great Britain through the East-West Interconnector and Moyle, and Greenlink entered commercial operation in 2025, creating an additional 500 MW-class connection between Ireland and Britain [14].

The Celtic Interconnector, a 700 MW connection between Ireland and France, is under construction and is currently expected to commission in spring 2028 [15]. Government policy goes further again. The National Policy Statement on Electricity Interconnection 2023 supports increased interconnection and examination of additional links beyond the existing and committed projects, including further connections with Great Britain and mainland Europe. Government material indicates that Ireland's interconnection capacity is expected to rise from 1,000 MW to about 2,450 MW by 2030 if the committed and planned projects proceed [16].

That matters for this application because interconnection is not just an abstract climate policy. It is a structural alternative to locking in long-lived local fossil peaking capacity. The more Ireland is connected to Britain and mainland Europe, the more it can import, export, share reserves, access a wider geographical spread of renewable output, and participate in a broader balancing market. In practical terms, that reduces the weight that can be placed on a single local OCGT as a long-term necessity.

5.5 Battery Storage, Grid-Forming Technologies and Low-Carbon System Services

The alternatives assessment should not be limited to a binary choice between OCGT and no OCGT. The electricity system is changing in a much more complex way. The EPA's 2025 projections state that the WAM scenario includes 1.8 GW of battery energy storage by 2030 [3]. That is highly material when considering the future role of a fast-response plant.

EirGrid's All-Island Grid Forming Strategy (February 2026) shows that converter-based technologies, including batteries, are being developed to provide services historically associated with synchronous thermal generation, such as energy injection in the inertial timeframe, often described as synthetic inertia [17]. In parallel, EirGrid and SONI are procuring Low Carbon Inertia Services and related system services precisely because a decarbonised system cannot rely indefinitely on conventional thermal plant for stability [18].

Accordingly, it is not technically accurate to present gas peakers as the only realistic source of fast response or system support. Batteries, especially where designed as grid-forming assets, can provide very fast reserve, frequency response, and inertia-like services. They do not eliminate all need for dispatchable thermal support immediately, but they materially weaken any argument that an OCGT must be treated as an open-ended strategic necessity through to 2050 [17][18].

5.6 Regional Coordination, the Nordic RCC, and the Move Toward a European System

Nordic RCC is not an isolated Scandinavian experiment now being copied informally. It is one of six Regional Coordination Centres established under EU electricity market law, and it is jointly owned by the four Nordic TSOs – Fingrid, Statnett, Svenska kraftnät, and Energinet [19].

ENTSO-E's 2025 work programme confirms that regional coordination has been formalised under the European Clean Energy Package and that the implementation of RCC tasks is continuing across Europe, including the rollout of the legally defined RCC functions on a pan-European or cross-regional basis [20].

The significance for Ireland is clear. As Irish interconnection expands, and as market coupling and regional coordination deepen, Ireland becomes progressively more embedded in a wider electricity system rather than a purely national balancing problem. This does not mean that all Irish capacity questions disappear. It does mean that long-term need should be assessed in the context of a Europeanising system in which reserve sharing, interconnection, storage, renewable diversification, and coordinated system operation are all expanding at the same time [14][15][16][19][20].

5.7 Operational Emissions, Cycling, and the Transitional Rather than Permanent Role of OCGT

The applicant argues that OCGT is preferable to combined-cycle for short peaking runs because of its faster startup and lower total fuel burn in that narrow use case [1]. That may be accepted as a limited engineering point when comparing one fossil technology with another for very short dispatch events. However, it does not answer the broader planning question, which is whether a new gas peaker with operation sought until 2050 is justified in a system whose policy direction is toward renewable generation, storage, interconnection, and coordinated European balancing.

It is also important that cycling and transient operation are not emissions-free or even emissions-neutral. Research on thermal plant cycling in high-renewable systems shows that startup, shutdown, and part-load operation lead to additional efficiency losses and measurable increases in CO2 and air pollutant emissions compared with steady-state assumptions [21]. In other words, the peaker character of the plant is not a climate virtue. It is part of the reason why such plant should be treated as transitional support rather than long-lived backbone infrastructure.

On the evidence now available, the strongest planning conclusion is that any continued role for OCGT in Ireland is transitional and short- to medium-term, linked to the current build-out period for storage, interconnection, and low-carbon flexibility. That is materially different from demonstrating a need for this specific plant to operate until 31 December 2050. At a minimum, the evidence points toward a time-limited bridging role over the next 10 to 20 years rather than a settled strategic requirement lasting to the end of the State's net-zero horizon.

5.8 Planning Implications for Cashla

The practical implications for this application are as follows.

First, the current Irish biomethane position does not support any present-day claim that the plant will operate in meaningful compliance with climate policy through renewable gas use. The existing renewable gas volume on the system remains very low, and the State's own projections do not assume full CAP target delivery by 2030 [3][4].

Second, the EIAR's reliance on future biomethane and hydrogen use is weakened by its own express statement that those future fuels are not relied upon in the climate and air assessments [1].

Third, the electricity system context is changing rapidly through interconnection, storage, grid-forming technologies, and European market integration. Those developments all point toward reducing – not extending – dependence on inefficient local fossil peakers over time [14][15][16][17][18][19][20].

Fourth, the applicant has not demonstrated why a plant of this type should be permitted to run to 2050 when the wider evidence indicates that any genuine need is more likely to be transitional and should diminish as alternative flexibility options mature.

Fifth, An Coimisiún Pleanála should therefore treat the claimed long-term need for this OCGT with caution and should not assume that present security-of-supply concerns automatically justify fossil peaking operation through the full life sought.

5.9 Conclusion

The updated evidence does not support the proposition that the Cashla OCGT can presently be regarded as a green or greenhouse gas-compliant project on the basis of biomethane availability. Nor does it support an assumption that a relatively inefficient peaker plant is required as a long-term fixture of the Irish system until 2050. What the evidence supports is a narrower and more qualified conclusion: Ireland is in a transitional period in which some flexible thermal support may still be used, but that role is being progressively challenged and reduced by expanding interconnection,

battery storage, low-carbon system services, and deeper integration into the wider European electricity market. In those circumstances, the applicant has not demonstrated a robust planning basis for treating this proposal as a long-life climate-aligned development rather than a short- to medium-term bridging technology whose need should be tightly scrutinised and time-limited.

References

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CHAPTER 6

NOISE AND VIBRATION

6.1 Introduction

It is respectfully submitted that the Noise and Vibration chapter of the EIAR cannot be treated as a complete or sufficiently transparent basis upon which An Coimisiún Pleanála may safely reach its reasoned conclusion on likely significant effects. Although the chapter adopts the familiar sequence of baseline survey, criteria selection, prediction, mitigation, and residual effects, the Board's obligation is not satisfied by structure alone. The legal question is whether the material actually presented is sufficient to identify, describe, and assess, in an appropriate manner, the likely effects of the proposed development on residential amenity and human health.1 (See Appendix 1 for S.I. No 299 of 2007(1) and LEC 61672 instrumentation-compliant survey for comparison. Carried out at the BGE facility at Whitegate, Cork. 12.02.2025. Calibration certificates included. General noise survey not for EIAR yet carried out to a higher standard)

In that regard, the chapter suffers from four related deficiencies.

- First, the baseline survey is not accompanied by the level of calibration traceability and raw-data disclosure ordinarily required for a contentious industrial noise assessment.
- Second, the operational compliance case is expressed principally in LAeq,T terms where the applicable EPA framework distinguishes between LAeq,T and LAr,T.
- Third, the operational model is not fully auditable from the material placed on the file because the key appendix containing source sound power data and model setup is missing.

1Planning and Development Act 2000, s.172; S.I. No. 296 of 2018.

- Fourth, the cumulative presentation is capable of understating, or at least obscuring, the actual total sound environment experienced at nearby noise-sensitive locations in a motorway-influenced setting.

6.2 Legal and policy framework

The statutory framework requires more than a broad-brush account of environmental effects. Under the Planning and Development Act 2000, as amended, together with the associated regulations, the decision-maker must have before it an EIAR containing the information reasonably required to assess the likely significant effects of the proposed development.2

That obligation is reinforced at European Union level by Directive 2011/92/EU, as amended by Directive 2014/52/EU, which emphasises the quality of the assessment, the need for clear public information, and the duty on the competent authority to reach a reasoned conclusion on the likely significant effects of the project.3

In the Irish context, the principal technical guidance invoked by the EIAR is the EPA's *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (2022) together with EPA NG4. Those instruments are authoritative guidance as to what a legally robust and technically intelligible EIAR should contain in practice.

6.3 What the EIAR does establish

It is important to state the matter fairly. The EIAR is not silent on noise. It identifies baseline monitoring locations, describes attended and unattended surveys, sets out a criteria framework, applies an operational prediction methodology, and proposes mitigation measures. It also recognises that the receiving environment is affected by traffic from the M6 and M18. The present submission is therefore not that motorway influence was wholly ignored. Rather, it is that the

2Planning and Development Act 2000, s.172; Planning and Development Regulations 2001, Sch. 6; S.I. No. 296 of 2018.

3Directive 2011/92/EU, as amended by Directive 2014/52/EU.

practical consequences of that influence are not presented with sufficient clarity and methodological consistency for the purposes of lawful EIA assessment.

The EIAR further adopts EPA NG4 as the principal framework for operational assessment and concludes that the receiving environment is not a low background noise area. That is not, in itself, objectionable. The issue is whether the EIAR then applies that framework correctly and transparently in the way it expresses compliance and cumulative effect.4

6.4 Baseline survey evidence and traceability

A first material concern arises regarding evidential traceability. The EIAR states that the surveys were undertaken using RION NL-53 and RION NL-52 sound level meters and that calibration checks were carried out before and after the survey using a Brüel & Kjær Type 4231 calibrator. However, the material before the Board does not include the calibration certificates, instrument serial numbers, field calibration readings, or raw logging data from which the summary tables were derived.5

That omission is not a technicality. In a contested planning process, the credibility of a baseline survey depends upon traceable conformity of the sound level meters and calibrator, and upon a demonstrable calibration trail referable to recognised standards. The relevant standards framework includes IEC 61672-1 for sound level meters, IEC 60942 for sound calibrators, and ISO/IEC 17025 in respect of traceable laboratory calibration competence.6

Absent those materials, the Board is effectively asked to accept the baseline on assertion rather than on documentary proof. That is particularly unsatisfactory where the applicant relies on that baseline to contend that operational effects will be acceptable at nearby dwellings. The same concern arises in relation to the absence of raw, unattended logs and attended survey sheets.

4EPA, Guidance Note for Noise (NG4), January 2016 update.

5 As identified in the source audit, the EIAR materials did not include calibration certificates, serial numbers, pre/post field calibration readings, or raw baseline logs.

6IEC 61672-1:2013; IEC 60942:2017; ISO/IEC 17025:2017.

Without them, it is not possible to test representativeness, identify extraneous events, or examine whether the survey periods fairly reflect the environment actually experienced by receptors.

6.5 Criteria and descriptor mismatch: LAeq,T, and LAr,T

A second concern is methodological. EPA NG4 distinguishes between descriptors. For daytime and evening periods, the criterion is expressed as *LAr,T*; for night-time, it is expressed as *LAeq,T*. That distinction matters because the rating level concept is capable of incorporating penalties or adjustments for characteristics such as tonality, impulsivity, and, where relevant, low-frequency content.7

The difficulty is that the EIAR's operational compliance case is presented chiefly in predicted LAeq,T terms and proceeds as though compliance with the 45 dB night-time criterion necessarily entails compliance with daytime and evening requirements on the same descriptor. In our submission, that is not a sufficiently rigorous application of NG4. It may ultimately be correct that no rating penalty arises in this particular case. However, that proposition must be demonstrated by evidence or secured by condition; it cannot simply be assumed in the body of the assessment.

6.6 Operational modelling and auditability

The EIAR states that operational predictions were generated using DGMR iNoise in accordance with ISO 9613-2:2024. That is, in principle, a recognised engineering basis for the prediction of industrial plant noise outdoors.8

However, such a model is only as reliable as the transparency of its source inputs and setup assumptions. The available appendix discloses certain general parameters, such as ground factors,

7EPA NG4, January 2016 update; ISO 1996-1:2016.

8ISO 9613-2:2024.

receiver heights and atmospheric assumptions, but the EIAR repeatedly refers to a further appendix containing the source sound power data and detailed model setup. That appendix is not on the file.9

The consequence is straightforward. Neither the Board nor the public can meaningfully audit the operational model from the material disclosed. One is left with the conclusion and contour outputs, but without the underlying octave-band source terms, geometry and detailed setup necessary to test them. In a planning process where likely significant effects must be capable of real scrutiny, that is a material shortcoming.

6.7 Cumulative assessment and the motorway context

A further problem concerns the presentation of cumulative effects. The EIAR acknowledges that motorway traffic contributes to the baseline environment. Yet, in the cumulative tables, the predicted plant contribution is combined with background LA90 levels rather than with ambient LAeq levels. That may be useful for one limited purpose, namely to illustrate change above background or potential audibility. It does not, however, present the total ambient environment actually experienced by residents over the relevant period.

In a motorway-influenced setting, that distinction is of practical importance. Background and ambient are not interchangeable descriptors. Best practice would ordinarily require both analyses to be shown: first, a background-referenced assessment of change; and second, an energy-based ambient total using baseline *LAeq* combined with predicted plant *LAeq*.10

That dual presentation would avoid misunderstanding and would provide the Board with a clearer picture of actual exposure at noise-sensitive locations. In the absence of that clarity, the present cumulative tables are capable of creating the impression that existing motorway noise has not been fully taken into account, when what has actually occurred is that it has been treated

9The source audit records that Appendix 9.2 was available but Appendix 9.3, cited for sound power data and model setup, was not present in the materials.

10EPA NG4, January 2016 update; Directive 2002/49/EC; Directive 2011/92/EU, as amended.

through a different descriptor which does not communicate total ambient exposure in an immediately intelligible way.

6.8 Legal consequences of the identified deficiencies

Taken individually, each of the foregoing matters may be described as a technical or presentational defect. Taken together, they go to the legal sufficiency of the chapter. The baseline is not fully evidenced. The descriptor framework is not applied with complete coherence. The operational model is not fully auditable from the disclosed material. The cumulative presentation is not framed in the clearest way for the purposes of public participation or reasoned decision-making.

Irish and European environmental assessment law does not require perfection, but it does require adequacy, transparency, and intelligibility. The High Court has emphasised the importance of complete assessment of project effects, including cumulative effects, in a way which does not artificially narrow what is actually being assessed.11

Moreover, persistent and inadequately controlled noise may have consequences beyond the planning process itself, including resort to the noise enforcement powers under the Environmental Protection Agency Act 1992 and the wider public-health objectives reflected in the Environmental Noise Directive.12

6.9 Further information and conditions required

If the Board is not minded to refuse permission on the basis of the deficiencies identified above, it is submitted that at least the following further information should be required before any lawful and robust conclusion is reached on noise and vibration effects.

11See O'Grianna & Ors v An Bord Pleanála [2014] IEHC 632.

12Environmental Protection Agency Act 1992, ss.107–108; Directive 2002/49/EC.

6.9.1 Calibration and instrumentation evidence

The applicant should furnish the make, model, and serial numbers of the sound level meters and calibrator used, together with current calibration certificates and the full pre- and post-survey field calibration logs.

6.9.2 Baseline raw data

The applicant should furnish the unattended logging data and attended survey sheets so that the representativeness of the baseline environment may be properly examined.

6.9.3 Full modelling disclosure

The missing appendix, or its equivalent, should be produced, including octave-band sound power levels, source assumptions, model geometry, and the detailed setup used to generate the operational predictions.

6.9.4 Revised cumulative tables

The applicant should provide revised tables showing both the change above background and the total ambient environment using baseline LAeq combined with predicted plant LAeq on a logarithmic energy basis.

6.9.5 NG4 compliance clarification

The applicant should expressly explain how the daytime and evening LAr,T requirements under NG4 are satisfied, including whether tonal or impulsive penalties arise, or could arise, and how that issue will be verified post-commissioning.

6.9.6 Post-permission safeguards

If permission is to be granted, conditions should require post-commissioning compliance testing at the nearest noise-sensitive locations, a complaints investigation protocol, and enforceable corrective action where tonal characteristics or exceedances are identified.

6.10 Conclusion

For all of the foregoing reasons, it is respectfully submitted that the EIAR Noise and Vibration chapter should be treated with caution. The defect is not that there is no assessment in form; it is that the assessment presented is not sufficiently robust in substance. The Board is being asked to rely upon conclusions which are not fully supported by traceable baseline evidence, which are not entirely clear in their use of applicable descriptors, which are not fully open to scrutiny in terms of modelling inputs, and which do not present cumulative effects in the clearest way for a motorway-influenced receiving environment.

In those circumstances, the Board should either require the further information identified above or attach only limited weight to the present chapter when discharging its statutory EIA obligations.13

13Planning and Development Act 2000, s.172; S.I. No. 296 of 2018; EPA Guidelines on the Information to be Contained in EIARs (2022).

Chapter 7
Climate and Greenhouse Gas Non-Compliance of the Proposed Cashla Peaker Plant

Planning-observation chapter based on Chapter 8 of Volume 2 of the EIAR, the EPA report "Ireland's Greenhouse Gas Emissions Projections 2024-2055" (May 2025), and official combustion-turbine regulatory material.

7.1 Introduction

This chapter examines Chapter 8 of Volume 2 of the EIAR for the proposed Cashla Peaker Plant and explains why the project, as presently assessed, cannot be regarded as demonstrated to be compatible with Ireland's greenhouse gas obligations, carbon-budget pathway, or decarbonisation trajectory.

The central problem is not simply that the plant emits greenhouse gases. The central problem is that Chapter 8 uses context and percentage comparisons to suggest manageability, while offering no operational mitigation, no quantified transition to lower-carbon fuels, and no adequate treatment of the peaker-specific transient operation that is integral to the project design.

7.2 The national climate context set by the EPA

The EPA's May 2025 projections state that Ireland is not on track to meet the 51% emissions reduction target by 2030 compared to 2018. According to the EPA's projections, emissions are expected to be only 9% to 23% lower by 2030, and both the first and second carbon budgets are projected to be exceeded. The same EPA report states that the 2030 sectoral ceilings are projected to be exceeded by the Buildings, Electricity, Industry, and Transport sectors. The implementation gap identified by the EPA is therefore not theoretical; it is current and significant.

For electricity specifically, the EPA projects Energy Industries emissions to fall from 10.6 Mt CO2eq in 2018 to between 3.4 and 4.4 Mt CO2eq by 2030. However, even under the more ambitious WAM scenario, the electricity sector is projected at 3.1 Mt CO2eq in 2030 against a target reduction of 75%, while the EPA also states that the electricity sector ceiling for 2030 is projected to be exceeded.

In other words, the electricity sector is already in a constrained decarbonisation space and is not shown as having spare climate capacity into which additional gas-fired emissions can simply be inserted without consequence.

7.3 What Chapter 8 of the EIAR says

Chapter 8 calculates total annual operational greenhouse gas emissions of 21,299 tCO2e for the 325 MW case and 21,779 tCO2e for the 334 MW case. It then annualises total project emissions over the proposed lifespan and states that annualised emissions are 21,673 tCO2e and 22,153 tCO2e respectively. The same chapter compares the project against national and sectoral totals and states that the project represents 0.04% of Ireland's 2024 total GHG emissions and 1% of the 2030 electricity sector budget.

Chapter 8 also expressly states that there are no specific measures proposed to mitigate operational-phase greenhouse gas emissions. The chapter nonetheless concludes that the project is fully in line with national climate policy because CAP25 contains a target of installing at least 2 GW of new flexible gas plant, and from that basis it classifies the greenhouse gas effect as minor adverse.

That approach is materially deficient. The mere existence of a policy target for flexible gas capacity does not convert a particular project into a greenhouse-gas compliant development. Still less can it displace the legal reality that Ireland remains off-track on national emissions reductions and that the electricity sector ceiling is projected to be exceeded.

7.4 Why the applicant's "headroom" argument is unsound

The structure of Chapter 8 depends heavily on a "headroom" style argument. The applicant takes the project's own emissions, compares them against national totals and sectoral totals, expresses them as very small percentages, and then suggests that this supports a conclusion of policy alignment. That methodology is not a mitigation measure. It is only a contextualisation exercise.

There are four defects in that approach. First, percentage-of-budget comparisons do not answer whether the additional emissions are compatible with a sector that is already projected by the EPA to miss its ceiling. Secondly, annualising emissions over the proposed lifespan can visually reduce apparent scale without altering the fact that the operational emissions are real, additional, and attributable to the project. Thirdly, the project is assessed as if sectoral budgets are a reservoir of available capacity, whereas the EPA report shows the opposite: there is already an implementation gap and exceedance risk. Fourthly, the applicant's conclusion that the project is "fully in line" with national climate policy overlooks that national policy is not just about flexible gas capacity; it is about achieving legally binding carbon budgets, sectoral ceilings, and the 51% economy-wide reduction target by 2030.

7.5 The EPA report does not support the applicant's climate conclusion

The EPA report is particularly important because it does not endorse a simple build-out logic for a gas plant. Instead, it makes three critical points. First, the electricity sector remains under a requirement to decarbonise sharply. Secondly, the EPA did not project the full Climate Action Plan ambition of "at least 2 GW" of new flexible gas plant because an implementation pathway was not available; instead, the EPA used an adjusted trajectory yielding 1.4 GW of new gas-fired generation by 2030. Thirdly, the same report says that zero-emission gas-fired generation from biomethane and green hydrogen commencing by 2030 is not currently included, and that the full biomethane target is not modelled, with 4.3 TWh rather than 5.7 TWh assumed in the WAM scenario.

Those EPA statements are directly relevant to the Cashla project. Chapter 8 places substantial rhetorical weight on CAP25's flexible-gas target, yet the EPA's own official projections demonstrate that the full target was not carried into the national scenario because a credible implementation pathway was lacking. The EIAR therefore cannot properly rely on the CAP25 gas target as if it were already decarbonisation-proofed or automatically reconciled with the carbon-budget framework.

7.6 The absence of operational mitigation is fatal to the Chapter 8 conclusion

The most striking sentence in the whole climate chapter is section 8.7.2: “There are no specific measures proposed to mitigate the GHG emissions of the operational phase of the proposed project.” That is a direct admission that the main source of greenhouse gas emissions from the development is unmanaged at source during the operational life of the plant.

This matters because the same chapter relies on guidance that says significance should be assessed by reference to both the project’s alignment with the trajectory to net zero by 2050 and the level of mitigation taking place. If the operational phase has no specific GHG mitigation at all, then one of the two core limbs of that significance framework is effectively absent. In those circumstances, the applicant’s “minor adverse” and “not significant” conclusion is not convincingly reasoned.

7.7 Peaker-plant operation, startup, shutdown and part-load emissions

A further material weakness is that Chapter 8 does not contain a project-specific climate assessment of startup, shutdown, ramping, and other transient peaker-plant operation. This omission is important because official combustion-turbine material treats startup and shutdown as distinct operating phases, not as insignificant side notes. The U.S. EPA has explained that startup for simple-cycle turbines ends only when stable operation is reached or after one hour, whichever is less, and that shutdown is also separately recognised. The same EPA material states that stabilisation of NOx emission rates is used as an indicator of stable combustion and post-combustion controls. That official treatment demonstrates that startup and shutdown are recognised periods in which steady-state combustion and control performance have not yet been achieved.

Official technical literature also shows why this matters to greenhouse gases. The U.S. Department of Energy’s Electricity Generation Baseline Report states that during low-load operation, simple-cycle gas turbines experience a much more substantial efficiency penalty than coal units. In parallel,

official air permits for modern combustion turbines impose different limits or specific management provisions below 75% load and during startup and shutdown. One 2025 EPA-hosted permit records a NOx limit of 15 ppm on natural gas at 75% of peak load or higher, but 96 ppm when operating below 75% load, and it requires emissions during startup and shutdown to be minimised to the maximum extent possible. The same permit also requires greenhouse gas emissions and operating hours to be reported for startup and shutdown. These materials do not establish the exact additional tCO2e for Cashla, but they clearly establish the principle that transient and low-load combustion conditions are materially different from normal steady-state operation and can worsen emissions performance.

Chapter 8 does not evaluate that issue. Instead, the applicant appears to rely on simplified operational assumptions, including natural gas use for 100 hours per year, and then treats operational emissions as if they can be adequately characterised without a dedicated transient-operation analysis. For a peaker plant, that is a serious omission. Fast-start and load-following behaviour are not incidental to the project. They are central to its claimed purpose.

7.8 The future biomethane and hydrogen discussion cannot cure present defects

Chapter 8.11 discusses future use of biomethane and hydrogen, but expressly states that the EIAR has not relied on that text and that it is provided for information purposes only. That means the future-fuels section is not mitigation within the assessment and cannot lawfully or logically be used to neutralise the operational emissions analysed elsewhere in the chapter.

There is a second problem. The EPA's 2025 projections report confirms that the full 5.7 TWh biomethane target is not modelled and that zero-emission gas-fired generation from biomethane and green hydrogen commencing by 2030 is not currently included. The applicant's narrative therefore runs ahead of the official implementation evidence. On the present record, future biomethane or hydrogen use remains aspirational and unquantified, not secured mitigation.

7.9 Internal inconsistency within Chapter 8

Chapter 8 contains an internal inconsistency. On the one hand, it reproduces data showing that Ireland is well off the 2030 climate ambition and that a substantial further annual reduction is required to remain within budgetary constraints. On the other hand, it uses percentage comparisons to suggest that this project is acceptable because its own contribution is small relative to national totals. That is not a coherent climate analysis. A small additional emission is still additional, and where a sector is already projected to overshoot, the question is not whether the project is numerically small in national terms but whether its emissions are justified, mitigated, and demonstrably aligned with the required decarbonisation pathway.

In practical terms, Chapter 8 proves only that the project is not the sole cause of Ireland's climate problem. It does not prove that the project is compatible with the national carbon-budget pathway or that it has been designed to minimise operational greenhouse gas emissions.

7.10 Conclusions and requested remedies

For the reasons set out above, Chapter 8 fails to demonstrate that the proposed Cashla Peaker Plant is greenhouse-gas compliant in planning terms. The chapter shows additional operational emissions, no operational GHG mitigation, no quantified low-carbon fuel substitution, and no dedicated assessment of transient peaker operation. It then relies on annualisation and percentage-of-budget comparisons in a sector that the EPA projects will exceed its ceiling. That is not a robust basis for concluding climate-policy alignment.

The following further information or design changes should therefore be required:

- A revised climate chapter that assesses the project against the EPA's 2025 projections, carbon budgets, and sectoral ceilings without treating those budgets as available headroom.
- A dedicated greenhouse-gas assessment of startup, shutdown, ramping, part-load operation, diesel testing, and any other transient operating mode intrinsic to peaker-plant function.

- A quantified operational mitigation strategy, including examination of higher-efficiency technology choices, enforceable operating constraints, and a reasoned explanation of how emissions will be minimised in practice.
- A binding, quantified, and evidenced strategy for any claimed transition to biomethane or hydrogen, including timing, deliverability, source, carbon intensity, and infrastructure availability. Failing that, future fuel-switching should carry no weight in the determination of significance.
- A reconsideration of the project's significance conclusion once the absence of operational mitigation and the effect of transient operation are properly addressed.

Table 7.1 Key mismatches between Chapter 8 and the wider climate evidence

Issue	What Chapter 8 says	Why this is inadequate
Policy alignment	The project is said to be fully in line with climate policy because CAP25 contains a target for at least 2 GW of new flexible gas plant.	The EPA did not project the full 2 GW target because an implementation pathway was not available; instead it used 1.4 GW of net gas-fired generation by 2030. Policy aspiration is not the same as demonstrated climate compliance.
Operational mitigation	Section 8.7.2 states that there are no specific operational GHG mitigation measures.	Where operational emissions are the dominant source of project GHG impact, the absence of mitigation undermines the significance conclusion.
Budget comparison	The project is expressed as a small percentage of national or sectoral totals, including 1% of the electricity sector budget.	The EPA projects that the electricity sector ceiling will still be exceeded. Small percentage framing does not establish compatibility with an over-subscribed sectoral pathway.
Future fuels	Biomethane and hydrogen are discussed as future options.	The EIAR expressly says this text is not relied upon. The EPA also says the full biomethane target is not modelled and zero-emission gas-fired generation by 2030 is not included.
Peaker operation	No dedicated climate assessment of startup, shutdown, ramping or part-load operation is provided.	Official turbine material treats startup/shutdown as distinct phases, and simple-cycle turbines carry efficiency penalties at low load. Those peaker-specific features should have been assessed.

7.11 Sources

[1] Cashla Peaker Plant EIAR, Volume 2, Chapter 8 Climate, including sections 8.4 to 8.11 and Tables 8.5, 8.6 and 8.7. Uploaded file in this conversation.

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CHAPTER 8

CLIMATE AND GREENHOUSE GAS ASSESSMENT: FAILURE TO ACCOUNT FOR AGI BOILER EMISSIONS

This chapter addresses a discrete but material deficiency in the Environmental Impact Assessment Report ("EIAR"), namely the treatment of emissions arising from the ten boilers comprised within the Gas Networks Ireland above-ground installation ("AGI") at Rathmorrissy. The objector does not contend that the EIAR excludes the AGI from the project. The point, rather, is that the EIAR expressly includes the AGI and its boiler plant within the combined project while Chapters 7 and 8 do not clearly demonstrate that emissions from the ten AGI boilers were included in the operational air quality modelling and greenhouse gas calculations upon which the Chapter 8 significance conclusions depend.[1]

8.1 The EIAR expressly treats the AGI as part of the assessed project

The EIAR defines the Proposed Project as including all technically, functionally, and legally interdependent elements of the development, namely the Peaker Plant, the Gas Networks Ireland above-ground installation and gas pipeline, the ESB substation, and the underground grid connection. It also states that all components of the Proposed Project as a whole have been assessed within the EIAR. That is an important starting point. Once the EIAR adopts a single combined project approach, each identified project element must be transparently addressed in the assessment unless expressly and rationally screened out. The separate consent language identified in the EIAR relates to the GNI146 Rathmorrissy gas pipeline and the applicable statutory process, not to the AGI as such.[2]

8.2 The ten boilers are expressly identified as combustion plant within the AGI

The EIAR does not refer to the AGI only in broad or schematic terms. It specifically identifies the Boiler House Kiosk and ten boiler flues. More importantly, it states that ten boilers are to be installed

within the boiler house, gives the thermal input and output for each unit, records that NOx emission levels are less than 40 mg/kWh, and that CO2 is 8.9% at maximum boiler output, and states that the boilers will operate when the Peaker Plant is operating. These are identified combustion sources with stated emissions characteristics.[3]

8.3 Chapter 7 appears to confine the operational emissions assessment to the gas turbine and backup generator

The Air Quality chapter summarises the operational emissions impact assessment by reference to pollutant emissions from the dual-fuel gas turbine and the backup generator. No equivalent statement has been identified confirming that emissions from the ten AGI boilers were included in the operational dispersion modelling. If those boilers were in fact modelled, the EIAR does not clearly say so. At minimum, the presentation lacks the transparency required to understand what sources were included in the modelling envelope.[4]

8.4 Chapter 8 appears to adopt an incomplete operational greenhouse gas inventory

The Climate chapter states that the greenhouse gas assessment quantifies the greenhouse gas emissions from the project over its lifetime. Yet Table 8.6 identifies the operational energy elements considered as electricity demand by site buildings, natural gas use by the turbine and backup generator, and low sulphur diesel used in testing of the backup generator. No separate operational line item is given for the ten AGI boilers, notwithstanding their express description elsewhere in the EIAR as on-site combustion plant operating with the Peaker Plant. The Board is entitled to clarity as to whether those boiler emissions were included, excluded, or treated as de minimis; the present document does not transparently provide that clarity.[5]

8.5 The issue is material to the Chapter 8 conclusions

This is a material issue. The EIAR goes on to conclude that the majority of operational greenhouse gas emissions originate from combustion of natural gas by the turbine, that operational site energy demand and power generation account for approximately 98% of the annualised emissions

associated with the Proposed Project, and that the residual greenhouse gas effect is direct, long-term, negative and slight, and overall not significant in EIA terms. Those conclusions necessarily depend upon the completeness of the operational emissions inventory. If the AGI boilers were not quantified, then the Board is not being presented with a complete and transparent basis for the Chapter 8 significance conclusions.[6]

It is accepted that the AGI boilers may represent a smaller source than the gas turbine. That, however, is not an answer to the present point. What matters is that all identified operational combustion sources forming part of the assessed project are either assessed or clearly and rationally screened out. The EIAR does not, on its face, demonstrate that in relation to the AGI boilers.

8.6 Internal inconsistency within the EIAR

There is, accordingly, an internal inconsistency in the EIAR. The document expressly includes the AGI and its boilers within the combined project, yet the operative air quality and climate assessment text appears to be framed by reference only to the gas turbine and backup generator. The problem is not that the boilers may be smaller emitters than the turbine. The problem is that the EIAR does not clearly demonstrate that all identified operational combustion sources forming part of the assessed project were included in the quantified assessment.

8.7 Clarification and remedy sought

In those circumstances, the Board is respectfully requested to require the Applicant to state clearly whether emissions from the ten AGI boilers were included in: (a) the operational air dispersion modelling in Chapter 7; (b) the operational greenhouse gas calculations in Chapter 8; (c) the annualised totals in Table 8.6; and (d) the associated significance conclusions that the effects are slight and not significant. If the answer to any of those questions is in the negative, the EIAR should be revised so that those combustion sources are quantified and the Chapter 7 and Chapter 8 assessments revisited on a complete project basis.[7]

8.8 Conclusion

For the foregoing reasons, the objector respectfully submits that Chapter 8, read together with Chapter 7 and Chapter 2, is not presently robust in its treatment of AGI boiler emissions. The EIAR expressly includes the AGI and the ten boilers within the combined project, yet the operational assessment chapters do not clearly demonstrate that those combustion sources were included in the air quality and greenhouse gas calculations. That deficiency materially affects the reliability of the Climate / Greenhouse Gas Assessment and the associated conclusion that the project's residual greenhouse gas effects are slight and not significant in EIA terms.

Notes

1. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 29-30, 34-35, 84, 355-356, 407 and 430.
2. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 29-30, 34-35, 84 and 92.
3. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 35, 45-47 and 91.
4. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 355-356 and 366.
5. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 407, 430 and 91.
6. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 231, 430 and 437.
7. EIAR, Volume 2 - Main EIAR_rev7 Final, pp. 355-356, 407, 430 and 437.

Chapter 9

Air Quality, Stack Height, Emissions, Deposition and Regulatory Compliance

9.1 Introduction and Scope

1. This Chapter addresses strategic infrastructure application PA07.324113 concerning the proposed Cashla Peaker Plant at Pollnagroagh and Rathmorrissy, Athenry, County Galway, described on the public file as the construction of an open-cycle gas turbine power plant, an Above Ground Installation and ancillary development.[14]
2. This Chapter is confined to the adequacy, transparency, and legal robustness of the published assessment of air quality, stack height, emissions, atmospheric deposition, and the related implications for sensitive ecological receptors and the karstic receiving environment.[15]
3. The central concern is a narrow but important one. The published project description identifies a number of combustion-related structures and low-level flues associated with the Gas Networks Ireland Above Ground Installation. However, the public-facing dispersion model inputs in Chapter 7 of the EIAR do not transparently demonstrate how those sources were treated in the operational assessment. On the face of the published record, the only source clearly parameterised is the principal 30 metre turbine stack.[16]
4. That matters for two reasons. First, the EIAR itself acknowledges that the selected 30 metre stack is in a building-downwash-sensitive configuration, such that BPIP-PRIME was required

[14] An Coimisiún Pleanála, case reference PA07.324113, case details webpage, giving the case reference, location, description, decision date and confirmation that the application is accompanied by an EIAR and an NIS (accessed 3 April 2026).
[15] See generally An Coimisiún Pleanála public file for PA07.324113, including "Volume 2 - Main EIAR", "Vol 3 - Appendix 7.1 Description of the AERMOD Model", "NIS - Cashla Peaker Plant V3 Final", and the AGI planning drawings listed on the application documents page (accessed 3 April 2026).
[16] "Environmental Impact Assessment Report (EIAR) - Volume 2", Cashla Peaker Plant, rev. 7 final, document reference 0114485DG0005, February 2026, pp. 371-373, especially Table 7.8.

before AERMOD modelling.[17] Secondly, once the project is located in a karst and turlough setting with identified European and national ecological receptors, uncertainty in the source inventory, plume behavior, and deposition assessment should be reduced by transparent analysis rather than left to inference.[18]

5. For the purposes of this Chapter, the Commission should require a fully auditable explanation of the source inventory and a transparent stack-height sensitivity assessment before concluding that the likely significant effects of the proposed development have been completely identified, described, and assessed.

9.2 The Published Project Description and the Apparent Source Inventory

6. The main EIAR states that the gas turbine stack will be 30 meters high with a diameter of 7 meters, and that continuous emissions monitoring will be provided for regulatory compliance purposes.[19]

7. The same EIAR, however, also describes the associated Above Ground Installation in materially more complex terms. It states that the AGI will include ten natural-gas boilers within a boiler house kiosk; that each boiler has a thermal input of 144.3 kW and a thermal output of 140.4 kW; that the NOx emission level for each boiler is stated to be below 40 mg/kWh; and that the boilers will operate when the peaker plant operates, albeit for what is described as minimal running time.[20]

8. The project description further identifies the boiler house kiosk as including ten boiler flues extending to 5.67 meters above ground level and an emergency generator. The same section identifies two pressure reduction kiosks with vent structures shown at 5.24 meters and 3.72 meters above ground level. These are not hypothetical or latent features; they are described

[17] Ibid., p. 370.
[18] Ibid., pp. 381-399; see also NIS - Cashla Peaker Plant V3 Final, pp. 81-85; Geological Survey Ireland, "Karst databases" webpage; and NPWS site synopses cited below.
[19] EIAR Volume 2, rev. 7 final, p. 87.
[20] Ibid., p. 91.

as built elements of the proposed AGI and are also reflected in the planning drawings lodged on the public file.[21]

9. Against that project description, Chapter 7 of the EIAR contains a striking statement under the heading "Process Emissions". It states that the proposed project will include one turbine with one stack and that "[t]here are no other combustion plant with emissions to air with the potential for significant effect on air quality".[22]

10. If that sentence is intended to be a screening conclusion in respect of the ten boiler flues and the emergency generator, the reasoning is not set out in a transparent, auditable manner. If, instead, those sources were included within the modelling, that is not apparent from the published source table. Table 7.8 of Chapter 7 sets out the source parameters only for "A2-1 (Turbine)" and does not separately list the boilers, the emergency generator, or the AGI vent structures.[23]

11. The difficulty is not cured by Appendix 7.1. That appendix describes the AERMOD system, BPIP-PRIME and meteorological processing in generic terms, but it does not provide a project-specific public source inventory that would enable an observer to verify whether the low-level boiler flues and the emergency generator were modelled, screened out quantitatively, or omitted altogether.[24]

12. In those circumstances, the Commission is left with an incomplete audit trail. Either the low-level sources were excluded from the operational dispersion assessment, or they were screened out without the publication of the quantitative basis for that conclusion. Either way, the public file does not transparently demonstrate that all combustion-related sources described elsewhere in the EIAR were brought within a single, intelligible operational assessment.

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[21] Ibid., p. 91. See also An Coimisiún Pleanála case file index for PA07.324113 listing "2183-DG-1003 Boiler House Kiosk", "2183-DG-1007 Proposed Site Elevations", and "PEK3-ATK-ZZ-ZZ-DR-A-ATK-000051 Emergency Diesel Generator - Plan, Elevation".
[22] EIAR Volume 2, rev. 7 final, p. 371.
[23] Ibid., pp. 372-373, Table 7.8.
[24] "Vol 3 - Appendix 7.1 Description of the AERMOD Model", PA07.324113 public file.

9.3 Stack Height, Downwash and the Need for a Transparent Sensitivity Exercise

13. The EIAR states that, at the outset of the project, a stack height of up to 42 metres was provisionally anticipated, but that after a process of design optimisation the final design stack height was reduced to 30 metres.[25]

14. The published rationale for that reduction is brief. The EIAR states that a lower stack would increase ground-level air quality impacts, but then concludes that, given the calculated low impact, any increase in stack height would offer only minimal benefit when weighed against the greater visual impact of a taller structure.[26]

15. That conclusion is not, in itself, sufficient. The same air chapter expressly records that building downwash must be taken into account because the stack is less than 1.5 times the lesser of the building height or the maximum projected building width. In other words, the applicant's own assessment accepts that plume behaviour in the near field is materially affected by surrounding structures and that PRIME downwash modelling is required.[27]

16. Once that is so, a bare statement that the air-quality benefit of a taller stack would be "minimal" is not a substitute for a transparent sensitivity analysis. The public file does not specify the alternative stack heights tested, the comparative results, the relevant receptor locations, or the point at which diminishing returns were said to occur. Nor does it disclose a public comparison between the selected 30 meter configuration and the previously contemplated 42 meter configuration.[28]

17. This is not a merely aesthetic criticism. The purpose of a stack-height exercise is to demonstrate, in a form capable of public and decision-maker scrutiny, the trade-off between visual effects and pollutant dispersion. Where the selected height is reduced from an earlier

[25] EIAR Volume 2, rev. 7 final, p. 149.
[26] Ibid.
[27] Ibid., p. 370.
[28] Ibid., pp. 148-149 and 370-373.

design assumption and the applicant simultaneously acknowledges downwash sensitivity, the analytical basis for that reduction should be visible on the public record.

9.4 Ecological Receptors, Deposition and the Karstic Receiving Environment

18. Chapter 7 of the EIAR does not confine itself to human health receptors. It identifies a range of ecological receptors, including Rahasane Turlough SAC and Rahasane Turlough SPA, and states that the dispersion modelling predicted concentrations and deposition at receptors within ecological sites.[29]

19. The same chapter also states that background concentrations for NO2, SO2, nitrogen deposition and acid deposition at the modelled designated habitats were derived from APIS 1 kilometre grid square data and that the EPA's Research Report 390 was consulted in determining critical loads of nutrient nitrogen for sensitive habitat types.[30]

20. In itself, that methodology is unobjectionable. The problem is that ecological deposition outputs can only be as reliable as the source inventory and stack configuration on which they are based. If the low-level boiler flues and emergency generator were not included, or were screened out without a transparent quantitative explanation, then the deposition conclusions for nearby receptors cannot be independently verified from the public file.

21. The receiving environment is not a forgiving one. The NPWS site synopsis for Rahasane Turlough SAC identifies a priority turlough habitat, an active swallow-hole system, and smooth limestone pavement within the site, and records eutrophication among the cited threats and pressures.[31] The NPWS synopsis for the Galway Bay Complex SAC identifies, amongst other qualifying interests, turloughs, orchid-rich calcareous grassland, Cladium

[29] Ibid., pp. 381-382, including Table 7.13.
[30] Ibid., pp. 360 and 370. See also EPA, Research Report 390, "Nitrogen-Sulphur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats" (2021), Table 3.2 and associated discussion.
[31] National Parks & Wildlife Service, site synopsis for Rahasane Turlough SAC (site code 000322), identifying the turlough, swallow-hole system, limestone pavement, and recorded pressures including eutrophication.

fens, alkaline fens, and limestone pavement.[32] The EPA's own critical-load research indicates that certain Annex I habitat classes in the Atlantic biogeographic region fall within low empirical nitrogen critical-load ranges, including ranges beginning at 5 to 10 kg N/ha/yr, with the midpoint recommended when an exact value is not otherwise identified.[33]

22. The hydrogeological setting heightens, rather than reduces, the need for caution. Geological Survey Ireland states that recharge through swallow holes and sinking streams is taken into account in groundwater vulnerability mapping and that the areas around such karst features are classified as "extremely" vulnerable to groundwater pollution.[34]

23. In a karst landscape, deposited nitrogen is not simply an abstract atmospheric metric. The question is whether the modelling inputs and assumptions are sufficiently complete and transparent to support the conclusion that indirect effects on limestone and turlough-associated receptors have been adequately excluded. On the present public file, that question cannot confidently be answered in the affirmative.

9.5 Internal Inconsistency Between the EIAR and the NIS

24. There is a further and discrete difficulty. The NIS states, at the screening level, that the nearest European site is Lough Corrib SAC, approximately 6.95 kilometers away, and that this distance indicates "no air pathway" between the proposed project and any European sites.[35]

[32] National Parks & Wildlife Service, site synopsis for Galway Bay Complex SAC (site code 000268), identifying, amongst other qualifying interests, turloughs, semi-natural dry grasslands on calcareous substrates, Cladium fens, alkaline fens and limestone pavement.
[33] EPA, Research Report 390, Table 3.2 and Executive Summary, including the discussion of low empirical nutrient nitrogen critical loads and the recommendation that the midpoint be used where no exact value is otherwise identified.
[34] Geological Survey Ireland, "Karst databases" webpage, especially the statement that areas around swallow holes and sinking streams are classified as "extremely" vulnerable to groundwater pollution.
[35] "NIS - Cashla Peaker Plant V3 Final", public file PA07.324113, pp. 81-82, stating that the closest European site is Lough Corrib SAC at approximately 6.95 km and that there is no air pathway to any European site.

25. Yet the EIAR's air chapter proceeds to model ecological air-quality and deposition receptors at several European sites, including Rahasane Turlough SAC and SPA, and presents detailed process contribution tables for ecological deposition and acidification.[36]

26. Those two positions are not readily reconcilable. If there truly is "no air pathway" to any European site, it is difficult to understand why Chapter 7 models include multiple European ecological receptors for atmospheric concentrations and deposition. Conversely, if Chapter 7 is correct to model such receptors, then the categorical statement in the NIS requires explicit correction or explanation.

27. Appropriate Assessment must be founded on a clear and internally coherent source-pathway-receptor analysis. The Commission should not be left to reconcile an apparent inconsistency between the NIS and EIAR for itself.

9.6 The Tarbert OCGT Application as a Relevant Benchmark of Transparency

28. The recent Tarbert OCGT strategic infrastructure application provides a useful comparator, not because identical outcomes are required, but because it illustrates what a transparent stack-height and deposition assessment looks like on the public record.[37]

29. In Tarbert, the Inspector's Report records that, following assessment, an optimal stack height of 55 meters was proposed.[38] The air-quality chapter in that case states that a stack-height assessment was undertaken, that meteorological years 2017 to 2022 were tested, and that the results were presented by reference to annual mean NO2 contributions as stack height varied.[39]

[36] EIAR Volume 2, rev. 7 final, pp. 381-399, including Rahasane Turlough SAC and SPA within the ecological receptor tables and deposition assessment.
[37] See An Coimisiún Pleanála public file ABP-318540-23 (Tarbert OCGT), including the Inspector's Report and EIAR Volume I, Chapter 7 (Air Quality).
[38] Inspector's Report, ABP-318540-23, p. 48.
[39] "SSE Tarbert Next Generation Power Station Environmental Impact Assessment Report (EIAR) Volume I, Chapter 07 Air Quality", November 2023, pp. 33-34.

30. Tarbert also transparently identified 15 human health receptors within 15 kilometers and assessed the contribution of emissions at ecological receptors, including a methodology which expressly incorporated NH3 alongside NOx and SO2 in the nitrogen and acid deposition calculations.[40] The published summary records that the dispersion modelling assessed operation of the proposed OCGT for up to 1,800 hours per year against air-quality-sensitive SAC and SPA habitats and selected human receptors.[41]

31. Again, the point is not that Tarbert dictates the substantive planning outcome at Cashla. The point is that Tarbert demonstrates a level of methodological visibility that permits proper scrutiny. By contrast, the present Cashla record does not transparently show the public source inventory for the low-level AGI combustion-related structures, nor does it publish a comparable stack-height sensitivity exercise.

9.7 The Relevant Legal and Regulatory Context

32. The Planning and Development Regulations require an EIAR to include, amongst other matters, an estimate by type and quantity of expected residues and emissions resulting from the operation of the proposed development; a description of the aspects of the environment likely to be significantly affected; and a description of the likely significant direct, indirect, secondary and cumulative effects, together with the forecasting methods used.[42]

33. It follows that the transparent treatment of all material operational emission sources is not optional. If a source is included, its treatment should be identifiable. If it is excluded or screened out, the scientific basis for doing so should be apparent on the face of the public record.

34. Ambient air-quality compliance in Ireland is now governed by the Revised Air Quality Standards Regulations 2024, which give domestic effect to the current EU ambient air-

[40] Ibid., pp. 19-20 and 25.
[41] Ibid., p. 61.
[42] Planning and Development Regulations 2001, Schedule 6, Part II, paragraph 1(a)(iii), paragraph 1(b), paragraph 1(c) and paragraph 1(d).

quality regime.[43] Separately, section 83 of the Environmental Protection Agency Act 1992, as amended, prohibits the grant of an industrial emissions licence where emissions would contravene air-quality standards, would cause significant environmental pollution, or would fail to employ the requisite best available techniques and other statutory safeguards.[44]

35. That licensing regime is important, but it does not cure an incomplete planning-stage assessment. The Commission must still be satisfied, on the basis of the EIAR and NIS before it, that the likely significant effects of the proposed development have been adequately assessed for planning and Appropriate Assessment purposes.

36. The regulatory position of the small AGI boilers does not diminish that requirement. The Medium Combustion Plant Regulations apply to plants from 1 MW up to but not including 50 MW and exclude activities falling within the Industrial Emissions regime; moreover, plants below 1 MW are not counted towards aggregation for the purposes of that instrument.[45] If, therefore, the AGI boilers fall outside a separate MCP control regime, that makes it more important, rather than less, that their treatment within the planning and industrial-emissions framework be made explicit.

37. In addition, the gas infrastructure elements require consent under section 39A of the Gas Act 1976, and the statutory scheme provides for environmental assessment obligations in that context also.[46] The overall project should accordingly be assessed on a coherent basis across the various consents and project elements, rather than on the basis of any gap between planning and subsequent licensing.

38. The NIS has been prepared because the application is accompanied by a Natura Impact Statement and because the public file recognises that Appropriate Assessment obligations

[43] S.I. No. 739/2022 - Air Quality Standards Regulations 2022. See also Directive 2008/50/EC, as amended.
[44] Environmental Protection Agency Act 1992, section 83, as amended.
[45] S.I. No. 595/2017 - European Union (Medium Combustion Plants) Regulations 2017, in particular regulation 4(3)(i) and regulation 10(2).
[46] Gas Act 1976, section 39A; see also section 40A as inserted in relation to environmental impact assessment requirements for relevant gas infrastructure consents.

arise.[47] In that context, an unexplained discrepancy between the NIS and the EIAR as to whether any atmospheric pathway exists to European sites is a matter the Commission should require the applicant to address directly.

9.8 Conclusions and Requested Further Information

39. For the foregoing reasons, the Commission is respectfully requested to require further information, or otherwise to withhold consent unless satisfied by equivalent enforceable material, on the following matters:

40. First, a complete public source inventory for the operational air-dispersion model should be provided, identifying every combustion-related source and any relevant vent source, together with a clear statement whether each source was included, screened out quantitatively, or excluded, and on what basis.[48]

41. Secondly, the applicant should provide a transparent stack-height sensitivity exercise, at minimum comparing the selected 30 metre stack with the previously contemplated 42 metre arrangement and with any other height found to be relevant by the applicant's own engineering or air-quality analysis, showing the comparative effect on short-term and annual NO2 concentrations and on nitrogen deposition at the nearest human and ecological receptors.[49]

42. Thirdly, the applicant should be required to reconcile expressly the statement in the NIS that there is no air pathway to any European site with the separate Chapter 7 modelling of European ecological receptors, including Rahasane Turlough SAC and SPA. If necessary, a revised NIS and revised Appropriate Assessment material should be furnished.[50]

43. Fourthly, given the karst and turlough setting, any permission should only issue subject to conditions, without prejudice to the EPA's licensing jurisdiction, requiring appropriate

[47] An Coimisiún Pleanála case details page for PA07.324113 confirms that the application is accompanied by both an EIAR and an NIS.
[48] See EIAR Volume 2, rev. 7 final, pp. 371-373 and Appendix 7.1.
[49] See EIAR Volume 2, rev. 7 final, pp. 148-149 and 370-373; compare Tarbert EIAR Chapter 7, pp. 33-34.
[50] Compare NIS - Cashla Peaker Plant V3 Final, pp. 81-82 with EIAR Volume 2, rev. 7 final, pp. 381-399.

emissions monitoring, verification testing of the auxiliary combustion plant, and a hydrogeological and ecological monitoring regime proportionate to the sensitivity of the receiving environment.[51]

44. In the absence of that material, it is respectfully submitted that the Commission should not be satisfied that the operational air-quality, deposition and related ecological effects of the proposed development have been fully and transparently assessed.

45. Accordingly, the matters identified above should be addressed before the application is determined.

[51] See generally EIAR Volume 2, rev. 7 final, Chapters 7 and 11; NIS - Cashla Peaker Plant V3 Final, pp. 81-85; Geological Survey Ireland, "Karst databases" webpage; and EPA Research Report 390.

Chapter 10
Air Emissions: Material Weaknesses, Internal Inconsistencies, and Risk of Environmental and Human Health Damage

10.1 Introduction

This chapter identifies a material weakness in the EIAR air assessment. The weakness is not minor and it is not merely presentational. It goes to the heart of whether the operational emissions inventory has been correctly identified, whether nitrogen and acid deposition have been properly assessed, and whether the likely effects on nearby residents and sensitive ecological receptors have been fully and lawfully examined.

The central problem is straightforward. Chapter 2 of the EIAR identifies additional operational combustion sources within the AGI, namely 10 gas pre-heating boilers housed in the boiler kiosk and associated low-level flues. Yet Chapter 7 states that the proposed project will include one turbine with one stack and that there are no other combustion plant with emissions to air with the potential for significant effect on air quality. Those two positions are not consistent with one another. If the boilers emit NOx and CO2, and if they discharge from low flues only 5.67 m above ground level, then they are real operational emission sources and should have been transparently assessed, either individually or cumulatively with the turbine, rather than being written out of the operational dispersion and deposition case by assertion alone (EIAR Volume 2, pp. 91, 371-373).

10.2 Legal Context and Direction of Current Air Law

The direction of current European air law is towards tighter protection, not looser assessment. Directive (EU) 2024/2881 on ambient air quality and cleaner air for Europe states that air quality is to be progressively improved to levels "no longer considered harmful to human health, natural ecosystems and biodiversity". The Industrial Emissions Directive, as amended by Directive (EU) 2024/1785, requires a "high level of protection of human health and the environment taken as a

whole". In addition, the BAT conclusions for large combustion plants make clear that permit conditions are to ensure emissions "do not exceed the emission levels associated with the best available techniques" under normal operating conditions.

The legal significance of those provisions is plain. A developer cannot lawfully present an air case that is selective in its source inventory, incomplete in its operational emissions accounting, or softened by an unduly relaxed interpretation of receptor sensitivity. The legislative trend is precautionary and effects-based. It is concerned with avoiding, preventing and reducing harmful effects. That legislative direction is incompatible with an EIAR which identifies operational combustion sources in one chapter, but treats them as irrelevant or effectively invisible in another.

10.3 Operational Combustion Sources Identified in Chapter 2

Chapter 2 states that the proposed gas pre-heating system will include 10 boilers within the boiler house, each with a thermal input of 144.3 kW and output of 140.4 kW. The same text states that NOx emission levels are less than 40 mg/kWh and that CO2 is 8.9% at maximum boiler output. Chapter 2 also states that the boiler house includes 10 boiler flues at 5.67 m above ground level and an emergency generator (EIAR Volume 2, p. 91).

That evidence matters for two reasons. First, it confirms beyond dispute that the AGI is not emission-free. Second, it confirms that the omitted sources are low-level emission points. Low-level flues do not behave like a 30 m stack. Their emissions are more likely to remain within the near field and to contribute to local ground-level concentration and deposition patterns, particularly where there are nearby receptors. It is therefore not enough to describe those sources and then assume them away.

10.4 Express Exclusion of Other Combustion Plant in Chapter 7

Chapter 7 states that the proposed project will include one turbine with one stack, built to 30 m above ground level, and that there are "no other combustion plant with emissions to air with the potential for significant effect on air quality". The same section then describes the operational modelling scenario entirely by reference to the turbine, including continuous operation, testing and

maintenance, and emergency operation. Table 7.8 presents a single modelled emission point, namely A2-1 (Turbine) (EIAR Volume 2, pp. 371-373).

This is a material internal inconsistency. Chapter 2 identifies 10 boilers with NOx emissions and 10 low flues, while Chapter 7 proceeds as if the only operational combustion source of relevance is the turbine stack. On the face of the EIAR, the 10 boilers and the emergency generator have not been included within the operational air dispersion model, have not been added to the nitrogen deposition assessment, and have not been transparently incorporated into the acid deposition case. An EIAR cannot be robust where one chapter identifies sources and another chapter omits them from the assessment methodology without a clear technical justification supported by quantified evidence.

10.5 Consequences for Nitrogen Deposition and Acid Deposition

The omission is particularly serious because Chapter 7 converts modelled concentrations into dry deposition fluxes for NO2 and SO2 in order to derive nitrogen and acid deposition to designated habitats. The chapter also states that background concentrations for NO2, SO2, nitrogen and acid deposition at the modelled designated habitats were taken from APIS 1 km grid square data and added to process contributions to calculate predicted environmental concentrations (EIAR Volume 2, p. 371).

That approach only works if the process contribution is complete. If the process contribution excludes real on-site combustion sources, then the resulting deposition case is incomplete at source. Background data cannot repair an under-specified source inventory. Nor can an omitted source be dismissed simply because its individual thermal input falls below the threshold for the Medium Combustion Plant Regulations. The question for EIA is not whether a source triggers a separate regulatory regime. The question is whether that source contributes to environmental effects. Here, the EIAR itself accepts that each boiler emits NOx and that the flues are low. Those facts are enough to require proper consideration of their deposition consequences.

The problem is amplified by flue height. A 30 m turbine stack is designed to disperse emissions over a broader plume. A 5.67 m flue is not. Even if each boiler is relatively small, 10 such flues operating as part of the same installation can create an additional near-field nitrogen burden that is simply not captured if only the turbine stack is modelled. This matters both for designated habitats and for any local semi-natural vegetation, hedgerows, field margins and other receptors close to the source area.

10.6 Human Health Implications of the Missing Emissions

The human health implications are equally important. Chapter 4 identifies 82 residential properties within 250 m of the project boundary and a further 29 residential properties within 250 m to 500 m. Those are not remote receptors. They are a substantial nearby residential population (EIAR Volume 2, p. 201).

Where low-level NOx-emitting sources are omitted from the operational air model, the likely effect is an underestimation of local ground-level concentrations in the area where people actually live. This creates a real risk that the EIAR understates the extent of operational exposure, especially in the near field. It is not an answer to say that the boilers will only operate when the peaker plant operates and that running time will be minimal. The turbine itself is modelled on a deliberately precautionary basis, including assumed continuous operation and emergency operation, precisely so that the maximum emissions scenario can be understood. The same discipline should have been applied to all other operational combustion sources. A selective approach to precaution is not precaution at all.

The practical consequence is clear. If nearby households are assessed against an incomplete operational emissions inventory, the decision-maker is deprived of a full picture of the project's likely air effects. That is capable of leading to inadequate mitigation, weak conditions, and real human health harm through repeated exposure to under-assessed local pollutants.

10.7 Misstatement and Weak Application of EPA Report 390

A second weakness lies in the treatment of ecological sensitivity. Chapter 7 states that EPA Research Report 390 was consulted to determine the appropriate nitrogen critical load and then says that the midpoint should be used, with the mid-range critical load for the most sensitive habitat type taken as the assessment criterion. That summary is incomplete and potentially misleading (EIAR Volume 2, p. 364).

EPA Research Report 390 does not support a generalised midpoint approach for sensitive habitats. The report explains that, where the exact critical load within the revised range is not indicated, the midpoint is recommended. That is a fallback position, not a blanket rule. The report further states that for heathland habitats (4010 and 4060) and blanket bogs (7130), the thresholds converged towards a single CLempN of 5 kg N ha-1 y-1, at the low end or lower than the existing recommended range. The report expressly states that plant species in blanket bog and heathland habitats are the most sensitive to total nitrogen deposition and recommends a biodiversity-based CLempN of 5 kg N ha-1 y-1. It also used the 5th percentile CLempN when mapping sensitivity and exceedance, that is, a protective approach designed to protect biodiversity rather than smooth sensitivity away (EPA Research Report 390, pp. 14-18).

Accordingly, the EIAR's narrative that the midpoint should be used sits uneasily with the EPA report's actual reasoning, particularly for the most sensitive habitats. A midpoint-led reading weakens the sensitivity analysis. When that weakened sensitivity analysis is then combined with an incomplete process contribution caused by omitted combustion sources, the result is a double underestimation: first, the source term is reduced; second, the receptor sensitivity is diluted.

10.8 Climate and Total Operational Emissions Transparency

The treatment of CO2 also raises concern, albeit in a different way. CO2 is not a deposition pollutant and should not appear in nitrogen or acid deposition calculations. However, the existence of boiler CO2 emissions remains relevant to the completeness of the project's operational greenhouse gas inventory. Chapter 8 states that operational energy and fuel usage includes electricity demand by

site buildings, natural gas use by the turbine, and fuel use by the backup generator. It does not clearly or expressly identify natural gas use by the 10 AGI boilers as part of the operational greenhouse gas case (EIAR Volume 2, pp. 416, 429-430).

That omission may mean either that boiler fuel use has not been counted, or that it has been subsumed without transparency. Either way, the result is unsatisfactory. A major energy infrastructure proposal should not require objectors or the decision-maker to guess whether a plainly identified operational combustion source is included in total annual emissions. What is required is a clear, source-by-source account so that the completeness of the climate assessment can be checked.

10.9 Combined Effect of the Weaknesses

Taken together, these weaknesses are serious. The EIAR identifies operational combustion sources in Chapter 2, but excludes them from the air modelling narrative in Chapter 7. It relies on background deposition data, yet appears to omit part of the process contribution. It invokes EPA Research Report 390, yet presents the report in a manner that risks weakening the critical-load assessment for the most nitrogen-sensitive habitats. It identifies a significant number of nearby residential receptors, yet does not transparently demonstrate that all local combustion sources have been included in the operational human health exposure case.

This combination of omissions and inconsistencies creates a material risk of underestimation. It can understate NOx process contributions, understate nitrogen and acid deposition, understate near-field exposure for nearby residents, and understate or obscure total operational greenhouse gas emissions. In planning terms, that is not a harmless defect. It is capable of materially affecting the conclusions reached on air quality, ecology, climate and population and human health. In environmental terms, it can lead directly to avoidable environmental degradation and human health damage because harm is most likely to arise where source strength is understated and receptor sensitivity is diluted.

10.10 Conclusion and Relief Sought

For the reasons set out above, the air emissions case presented in the EIAR should be treated as materially incomplete and internally inconsistent. The omission of the 10 AGI boiler flues and the emergency generator from the operational air narrative is a fundamental weakness. The treatment of EPA Research Report 390 compounds that weakness by softening the sensitivity side of the assessment. The result is an air case that is not sufficiently reliable to support a conclusion of no significant effect with confidence.

It is therefore submitted that An Coimisiun Pleanala should require a revised and fully transparent operational air assessment which: (i) identifies and models all operational combustion sources, including the 10 AGI boilers and emergency generator; (ii) assesses those sources both individually and cumulatively with the turbine; (iii) uses source-specific discharge parameters, including the low flue heights of the boilers; (iv) recalculates NOx concentrations, nitrogen deposition and acid deposition for all relevant ecological receptors; (v) reassesses nearby residential exposure on the basis of a complete source inventory; and (vi) applies critical loads in a manner that properly reflects the protective reasoning in EPA Research Report 390, particularly for the most nitrogen-sensitive habitats.

Unless and until that is done, the EIAR remains open to the objection that it understates the real operational emissions burden of the project and thereby fails to provide the decision-maker with a complete and precautionary assessment of likely environmental and human health effects.

10.11 Sources Cited

Cashla Peaker Plant EIAR, Volume 2 - Main EIAR, February 2026, Chapter 2 (Project Description), Chapter 4 (Population and Human Health), Chapter 7 (Air Quality), and Chapter 8 (Climate).

EPA Research Report 390 (2021), Nitrogen-Sulfur Critical Loads: Assessment of the Impacts of Air Pollution on Habitats, especially Sections 3.4, 3.5 and Recommendations.

Directive (EU) 2024/2881 of the European Parliament and of the Council of 23 October 2024 on ambient air quality and cleaner air for Europe, especially Articles 1 and 2.

Directive 2010/75/EU on industrial emissions, as amended by Directive (EU) 2024/1785, especially Article 1. Commission Implementing Decision (EU) 2021/2326 of 30 November 2021 establishing best available techniques (BAT) conclusions for large combustion plants.

Chapter 11
Water Budget, Uisce Éireann Process and Gort WWTP Disposal Route

11.1 Introduction

This chapter examines the project's water-services case, the adequacy of the information supplied to Uisce Éireann, the absence of a coherent project water budget, and the proposed off-site disposal route for concentrated reject water.

It draws together the relevant material from Volume 2, Volume 3 Appendix 2.1, the Natura Impact Statement, and publicly available records relating to Gort Wastewater Treatment Plant (WWTP). The central concern is not merely whether a water connection is feasible and required in principle, but whether the Environmental Impact Assessment Report (EIAR) presents a sufficiently clear and quantified account of water demand, process water use, reject water generation, off-site disposal, and downstream environmental effects.

The project relies on the public water network, large on-site storage volumes, demineralised-water production, wastewater tanker removal, firewater reserves and process-water use linked directly to emissions control. In those circumstances, the absence of a single, transparent water budget or water balance constitutes a material weakness in the EIAR.

11.2 Uisce Éireann process and what was actually done before planning

The documents show that a Pre-Connection Inquiry (PCE) was submitted to Uisce Éireann and that a Confirmation of Feasibility (COF) was issued under reference CDS25000940. Uisce Éireann confirmed that a water connection was feasible without infrastructure upgrade by Uisce Éireann itself but also stated that approximately 2 km of existing mains would need to be upsized to 150 mm and extended to the proposed connection point. Tank filling was to be restricted to nighttime off-peak hours between 12 a.m. and 6 a.m. by automated controls.

The Uisce Éireann letter also made clear that the COF did not constitute a connection offer. It stated that, before the development could be connected, a separate connection application and connection agreement would be required, and that this application should be submitted once planning permission had been granted. Accordingly, the strongest criticism is not that no contact was made with Uisce

Éireann before planning, but that the information supporting the PCE and the EIAR was too limited, fragmented, and in some respects inconsistent.

11.3 Absence of a coherent project water budget

No single project-wide water budget or water balance has been located in the EIAR or appendices. There is no consolidated table drawing together potable-water inflow, service-water demand, demineralised-water production, rejected water, wastewater tanker removal, compressor-wash demand, firefighting reserves, refill assumptions and annual operating totals. Instead, the project presents scattered figures in different documents, some of which are not readily reconciled.

This is significant because the EIA regime requires the project description to identify the use of natural resources, especially water, and to estimate by type and quantity the residues and emissions expected during operation. The EPA EIAR Guidelines similarly require a sufficiently detailed description of natural resources used, principal processes, residues, and emissions. In a project of this nature, those requirements are not satisfied merely by stating that water will come from the public network and that wastewater will be tankered away.

11.4 Conflicting and fragmented water figures

The table below demonstrates the lack of clarity. The figures are not presented here to suggest that every difference is necessarily a contradiction in engineering terms, but rather to show that the planning file does not contain a coherent, traceable water-services case.

Topic	Document / source	Figure stated	Comment on clarity issue
Domestic / potable demand	Uisce Éireann PCE form (Appendix 2.1, Vol. 3)	10 persons @ 60 l/person/day = 600 litres/day = 0.007 l/s average demand	This appears to have been the basis of the PCE water demand calculation.
Domestic / potable demand	Volume 2, Chapter 14	Peak daily domestic water demand = 0.007 l/s	Matches the PCE headline figure, but is framed as peak daily demand without a broader process-water context.
Domestic foul-water allowance	NIS / Volume 2 package WWTP text	10 persons @ 100 litres/person/day for 7 days = 7,000 litres; 10 m^3 cesspool proposed	The foul-water allowance uses 100 liters/person/day, rather than the 60 liters/person/day used in the PCE demand calculation.
Demineralised water tank volume	PCE form (Appendix 2.1, Vol. 3)	6,500 m^3	The PCE form uses 6,500 m^3 as the demineralised tank volume.
Demineralised water tank volume	NIS / Volume 2 Section 2.2.7	Approximately 7,000 m^3	A different storage figure is used in the NIS text.
Demineralised water tank volume	Volume 2 Chapter 2 / Chapter 14	Approximately 7,555 m^3	A third storage figure appears in Volume 2.

Demineralisation efficiency	Volume 2 / NIS	75% efficient; 25% rejected as heavily mineralised wastewater	The reject proportion is stated, but the annual quantity of reject water is not quantified.
Firewater first fill / storage	PCE form	1 hour @ 50 l/s = 180 m^3 storage	The PCE form uses a much lower first-fill figure than later project descriptions.
Firewater reserve	NIS / project description	540 m^3 reserve within larger combined service / firewater storage	Later project text refers to significantly larger firefighting storage and notes some detailed calculations are deferred.
Combined service / firewater storage	Volume 2 / project description	Approx. 1,480 m^3 combined service water and firewater tank	The relationship between this tank, the reserved firefighting volume and process-water offtake is not pulled together in one budget.
Compressor wash water	Volume 2 / NIS	Typically ca. 2 m^3 every few months	A useful figure is given, but no annualised total is presented.
Demineralised water for emissions control	Volume 2 / NIS	Actual usage to be optimised during commissioning; no annual figure stated	This is one of the most important omissions because the process is linked directly to emissions control when low sulphur diesel is burned.

11.5 No quantified annual estimate for emissions-control water

The documents explain why demineralised water is needed. It is injected into the gas turbine for power augmentation when combusting gas and, more importantly, to reduce thermal NOx when low sulphur diesel is burned. The text states that the actual water usage depends on the capacity demanded from the gas turbine and will be optimised during commissioning testing to avoid excessive usage. However, no specific annual water figure is provided for this emissions-control use. This omission is material. The project is not simply using water for domestic consumption and firefighting; it is also storing and using water for process reasons connected to emissions control and turbine performance. Yet there is no annual estimate of how much demineralised water will be consumed in low sulphur diesel events, how often replenishment will be required, or how much additional reject water this will generate for off-site treatment.

11.6 Proposed disposal route: Gort WWTP

The project documents identify Gort WWTP as the furthest operational haulage destination for off-site liquid waste streams. The application also maps the location of Gort WWTP in the NIS. The concentrated reject stream from demineralised-water production is described as heavily mineralised wastewater which will be stored in a dedicated tank and removed off site by licensed contractor to a wastewater treatment facility. The file, therefore, does not treat the destination as abstract; it points to Gort as a real and intended haulage endpoint.

Notwithstanding that operational reliance on Gort WWTP, no acceptance agreement or equivalent letter from Uisce Éireann or the operator of Gort WWTP has been identified in the planning documents. Nor has any detailed treatment-compatibility assessment been located for the specific reject stream. The planning file does not appear to contain a quantified examination of whether Gort WWTP can appropriately receive this heavily mineralised waste stream, in what volume and frequency, and under what conditions.

11.7 Capacity, compliance and receiving environment at Gort WWTP

Recent public planning material for Gort indicates that Gort WWTP has a design capacity of 4,310 population equivalent (PE) and a current load of 3,696 PE, and that spare capacity was indicated as available. However, the same material records that Gort WWTP is currently non-compliant with its emission limit values. The 2023 Annual Environmental Report for the plant likewise records non-compliance, specifically for ammonia. Accordingly, it would not be accurate to assert on the current evidence that Gort WWTP has no remaining headroom, but it is fully fair to say that paper spare capacity does not answer the separate question of whether it is suitable to receive additional imported concentrated reject water from this project.

This distinction is important. The project's waste stream is not ordinary domestic sewage generated in Gort. It is a process-related concentrated reject stream arising from demineralisation and from occasional turbine-compressor washing. The planning file does not contain a plant-specific assessment of the chemical compatibility of that stream with the receiving wastewater treatment process.

11.8 Natura 2000 pathway and consultation gap

Public records for Gort WWTP show that the plant discharges to the Gort River and that this system has a hydrological relationship with the Coole-Garryland Complex SAC/SPA and associated turlough sites. This is not speculative. Historic wastewater licensing and appropriate-assessment material for Gort WWTP identifies the downstream Natura 2000 context and the sensitivity of the receiving environment.

The Cashla application appears not to have followed this off-site pathway through in any substantive way. Although the destination plant is identified, no separate assessment has been located of the implications of selecting Gort WWTP as the disposal endpoint for concentrated mineralised wastewater, and no specific consultation with NPWS has been identified on that off-site disposal

route. In effect, the environmental pathway appears to stop in the project documents once the wastewater is placed on a tanker, even though the downstream municipal discharge route is environmentally sensitive and already documented in public records.

11.9 Road access and amenity issue in Gort

A further concern arises in relation to tanker routing in Gort. Public local-plan material indicates that the Gort River Walk is an established amenity corridor and that the route in the vicinity of the wastewater treatment plant has an active-travel and amenity function. While no formal road-engineering assessment has been located proving that the road is unsuitable for all larger vehicles, the planning file does not appear to contain any destination-specific traffic or route-suitability assessment for repeated tanker movements associated with reject-water disposal. That omission is notable given that the application explicitly identifies Gort WWTP as an operational destination.

11.10 Summary table of principal deficiencies

Issue	Evidence base	Why it matters in planning / EIA terms
No single project water budget	Figures are scattered across Volume 2, the NIS, the Civil Engineering Report and the Uisce Éireann PCE form.	The competent authority is not given one clear and internally consistent account of water demand, storage, process use and reject-water generation.
No annual estimate for emissions-control water use	The project states that water use depends on turbine demand and will be optimised during commissioning.	A key process-water use linked directly to emissions control is left unquantified at application stage.
Different storage and demand figures across documents	Demineralised tank stated as 6,500 m^3, 7,000 m^3 and 7,555 m^3 in different documents; domestic/foul assumptions also vary.	The water-services case lacks coherence and traceability.
PCE completed but not enough quantified analysis	A PCE and COF were obtained, but the COF is not a connection offer and connection remains subject to later application.	The project cannot rely on the existence of a PCE to cure deficiencies in the EIAR's substantive water-demand analysis.
Gort WWTP identified as disposal destination but no	The EIAR identifies Gort WWTP as an operational destination; no acceptance	The practical and legal certainty of the disposal pathway is unclear.

acceptance agreement located	letter or equivalent treatment agreement has been located in the file.	
No project-specific assessment of Gort WWTP treatment suitability	No quantified analysis has been located of Gort WWTP's ability to receive concentrated reject water from the project.	The destination pathway is assumed rather than assessed.
Receiving plant publicly reported as non-compliant	Recent public records state that Gort WWTP is non-compliant with ELVs, including ammonia.	Reliance on that plant for additional imported reject water required closer scrutiny.
Downstream Natura pathway not meaningfully assessed	Public records show the Gort WWTP discharge is linked to the Gort River and downstream Natura 2000 sites including Coole-Garryland.	The off-site disposal route has potential ecological significance and should not have been treated as an endpoint without further assessment.
No specific NPWS consultation located on Gort disposal route	No project-specific NPWS engagement has been identified in relation to this off-site wastewater pathway.	A potentially relevant consultation step appears to be missing.
No destination-specific route / amenity assessment	The planning file does not appear to include a route-suitability review of access to Gort WWTP despite	The traffic and amenity effects of the chosen disposal route remain under-assessed.

for tanker traffic in Gort	identifying it as a haulage destination.	

11.11 Conclusion

The observation arising from this material is not that the developer made no approach at all to Uisce Éireann before planning; the documents show that a PCE and COF were obtained. The stronger and more sustainable criticism is that the project's water-services case is inadequately developed in the EIAR.

A project that depends on the public water network, large on-site storage, demineralisation, reject-water generation, tanker disposal, and process-water use tied directly to emissions control should have been accompanied by a clear and coherent water budget.

It should also have included a more transparent and assessed justification for relying on Gort WWTP as an off-site disposal endpoint.

On the present record, the planning file does not provide a single integrated account of water demand and wastewater generation. It also does not appear to provide a documented acceptance pathway for the concentrated reject stream at Gort WWTP, nor a destination-specific assessment of the environmental implications of sending that stream into a treatment system discharging to the Gort River and onward toward the Coole-Garryland Natura 2000 network. For those reasons, the chapter supports a strong objection on grounds of adequacy, transparency, and environmental assessment.

11.12 References

Cashla Peaker Plant EIAR, Volume 2 – Main EIAR, especially Sections 1.14, 2.2.1.1.2, 2.2.7, 2.2.8, 2.4.1.1.1 and 14.4.1.1.3.

Cashla Peaker Plant NIS, especially Sections 1.3.1.2, 1.3.6.2.2, 1.3.7.1, 1.3.8.1.1 and Figure 1-22.

Cashla Peaker Plant, Volume 3 Appendix 2.1 Civil Engineering Report, including Appendix E: Uisce Éireann Pre-Connection Enquiry and Confirmation of Feasibility, reference CDS25000940, dated 2 May 2025.

Directive 2011/92/EU as amended by Directive 2014/52/EU (EIA Directive), Annex IV.

EPA, Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022).

Uisce Éireann, Developer Services / Connection Processes and FAQs (water.ie).

Gort Local Area Plan 2025–2031 SEA Environmental Report Appendix III Non-Technical Summary, consult.galway.ie.

Annual Environmental Report 2023 for Gort WWTP (Registration No. D00195-01).

Historic EPA / wastewater licensing and AA material for Gort WWTP identifying the Gort River and downstream Natura 2000 pathway.

Gort Local Transport Plan 2025 and local public submissions relating to the Gort River Walk corridor.

Chapter 12
Karst Hydrogeology, Groundwater Risk and Legal Assessment

Chapter Summary

- The Rathmorrissy site lies on Burren Formation limestone in a regionally important karstified aquifer, with mapped karst features and multiple subsurface anomalies already identified by the applicant's own investigations.
- The EIAR accepts karst conditions, yet no site-specific tracer testing has been carried out to establish actual groundwater flowpaths, travel times, or hydraulic connections to wells, groundwater-dependent ecosystems, SPAs, SACs, or Natura 2000 receptors.
- The application relies on underground tanks, soakaway-based drainage, pH-triggered firewater diversion, and generic bunding/containment measures that are not demonstrated to be fail-safe in an extremely vulnerable conduit-karst setting.
- The EIAR expressly states that no Water Framework Directive assessment has been completed, and further hydrogeological assessment is deferred to a later stage. On that basis, the Board does not presently have the information required to lawfully exclude risk.

12.1 Core Deficiencies in the Application

The following matters arise directly from the application documents and from the wider karst evidence base. Taken together, they show that the current application is not a complete or reliable basis on which to conclude that the development would be hydrogeologically safe at this site.

Issue	What the application says	Why that is inadequate in karst
Study area	The water chapter adopts a 2 km study area and treats that as sufficient because no large-scale dewatering or direct works in surface water are proposed.	That approach is not reliable in conduit karst, where tracing evidence from the Burren and connected Galway Bay systems shows that flowpaths can bypass surface catchments and extend well beyond 2 km.

Flowpaths	No tracer testing or equivalent zone-of-contribution delineation has been presented.	Without tracing, groundwater pathways remain inferred rather than demonstrated. In karst, that omission is central, because risk depends on actual conduit connections rather than assumed gradients.
WFD	The EIAR states that no Water Framework Directive assessment has been completed and that the need for such assessment was screened out.	That conclusion is unsafe where the underlying receptor is groundwater in a regionally important karst aquifer and where a groundwater-dependent European site is identified within the receiving environment.
Containment	The applicant relies on soakaways, bunding, underground tanks, and pH-triggered actuator valves to manage contaminated water and firewater.	These are detection and containment measures, not proof that the system is fail-safe in karst. A leak or bypass in fast-flow limestone can produce same-day off-site migration.
Completeness	Groundwater monitoring may be required later, pending a Detailed Piling Risk Assessment and Hydrogeological Assessment.	That is an express acknowledgment that the hydrogeological evidence base is not yet complete. A lawful decision should not rest on assessments deferred until after permission.

12.2 The Site and the Receiving Hydrogeological Environment

The proposed development site at Rathmorrissy, Athenry, lies on Burren Formation limestone and is expressly described by the EIAR as a karst setting. The application states that the proposed works are underlain by a regionally important karstified aquifer of conduit type and that regional mapping identifies karst features close to both the proposed access road and the underground cable route.[1]

The applicant's own geophysical work goes further. The EIAR records that Terra Survey identified eighteen anomalies interpreted as potential karst features beneath the proposed project site and that there is potential for subsurface karst features beneath the peaker plant and access road. That is not a marginal or speculative karst signal. It is direct confirmation, within the site envelope itself, that voided or infilled karst conditions may be present beneath the proposed industrial platform.[2]

The same EIAR states that the project site is underlain by a Regionally Important Aquifer – Karstified (Rk) (conduit), and explains that extreme groundwater vulnerability is associated with karst landforms because they provide a direct pathway for water and contaminants to enter the aquifer from the surface. The hydrogeological sensitivity of the site is therefore conceded in terms by the application itself.[3]

The broader receiving environment is not limited to the red-line boundary. In the biodiversity chapter, the EIAR identifies the underlying groundwater bodies as the Clarinbridge groundwater body and the groundwater body associated with the Galway Bay Complex Fens SAC (SAC000268), both of which are treated as relevant to the proposed project. Those designations are important because they show that groundwater and groundwater-dependent ecological receptors are not abstract possibilities but part of the identified receiving environment.[4]

12.3 Why the Rathmorrissy Site is Especially Vulnerable

Karst is not simply fractured rock. It is a hydrogeological system in which water and contaminants can move rapidly through enlarged fissures, conduits, swallow holes, epikarst features and other preferential pathways, often with little or no filtration. That matters in planning because the ordinary assumption that soil and subsoil will attenuate pollutants is materially weakened once recharge can short-circuit directly into bedrock pathways.[5]

The additional material provided to this objection compiles Irish karst tracing and modelling evidence from the Burren, Ballyvaughan, Bell Harbour and Kinvara-Gort systems. That evidence records rapid groundwater velocities in the order of tens to hundreds of metres per hour, and in some coastal karst settings up to approximately 460 m/hour. It also records non-intuitive flowpaths, poor recovery in some traces, and long-distance discharge to coastal receptors. The relevant planning point is straightforward: in conduit karst, the absence of obvious surface water near a site does not mean the absence of a rapid receptor pathway.[6]

The EIAR's adopted 2 km study area is therefore not a safe decision-making boundary in this hydrogeological context. The water chapter justifies that buffer on the basis that no large-scale earthworks, dewatering, or direct works in surface water are proposed. That reasoning may be acceptable in a non-karst porous-medium setting. It is not acceptable where the aquifer is expressly classified as conduit karst and where the risk arises from subsurface preferential flow rather than from visible surface-water pathways.[7]

12.4 The Central Evidential Defect: No Site-Specific Tracing and No Proven Flowpath Delineation

The decisive omission in the application is the absence of tracer testing or any equivalent site-specific hydrogeological method capable of establishing actual groundwater flowpaths from the development footprint to surrounding wells, groundwater-dependent ecosystems, or European sites. The material already prepared for this objection correctly identifies tracing as the critical evidential tool in karst. Without it, the Board is being asked to rely on generalised assumptions, not demonstrated pathway evidence.[8]

That omission is reinforced by the applicant's own text. The EIAR records that groundwater monitoring may still be required pending completion of a Detailed Piling Risk Assessment and Hydrogeological Assessment. In other words, the application itself contemplates that the hydrogeological assessment is not complete. The Board should not be invited to grant permission first and leave essential groundwater questions to later stages.[9]

This matters because karst risk is pathway-dependent. If a site-specific trace were to show rapid connection to nearby abstractions, to the Clarinbridge groundwater body, or to groundwater-dependent fen and bay systems, the significance of the risk would change fundamentally. The current application never closes that evidential gap.

12.5 Pollutant Pathways Created or Relied Upon by the Proposed Development

The application proposes a drainage and pollution-control strategy that relies on engineering measures rather than demonstrated hydrogeological isolation. The firewater system is to be divided into catchments, each controlled by an actuator valve linked to pH and contaminant probes, with runoff diverted to containment only when a trigger is reached. The same tank is also to serve as a holding tank for unrecoverable demineralised production water. The EIAR states that no additional controls are required.[10]

The application also states that solvent clean-down residues from turbine maintenance are collected in a closed system and discharged to a sealed underground tank, and that internal washdowns produce approximately 2 m^3 of cleaning solution for collection in underground tanks and off-site disposal. The applicant again states that no further pollution controls are necessary because the system is closed.[11]

Those propositions are not sufficient in karst. First, a pH trigger is not equivalent to chemical detection. Many substances of concern, including glycols, corrosion inhibitors, and several non-oxidizing biocides, may not generate a decisive pH excursion once diluted or buffered in a limestone environment. Secondly, underground containment in karst creates a high-consequence failure mode: if it leaks, the release is already in the subsurface, where detection is harder and where preferential flow may already be active. Thirdly, soakaway-led drainage remains a pathway into the karst system if any contaminated water reaches it, whether through misrouting, valve failure, sensor fouling, storm exceedance, operator error, or unforeseen hydraulic bypass.[12]

The engineering literature and the karst analysis already assembled for this objection indicate a clear best-practice hierarchy in extremely vulnerable karst: avoid underground storage of contaminated liquids where practicable; prefer above-ground double-contained storage with visible inspection and continuous leak detection; segregate clean and potentially contaminated drainage by design; and treat pH-based or SCADA-based diversion as a supplementary measure

rather than as proof of hydrogeological safety. The present design does not demonstrate adherence to that hierarchy.[13]

12.6 Chemical Risk, Cooling Systems and the Problem of Undisclosed Formulations

The earlier senior-counsel chapter correctly identifies a further material weakness: the application does not sufficiently identify the cooling-system and maintenance chemicals that may enter the drainage or waste stream. The proposal includes turbine cooling systems, fin-fan coolers, water and oil systems, compressor-cleaning infrastructure, and approximately 1,100 litres of biocides in storage, yet the specific chemical identities, hazard classifications, concentrations, and environmental fate assessments are not properly disclosed in a manner that allows a complete karst risk appraisal.[14]

The supporting karst research identifies a non-exhaustive but relevant range of chemical classes commonly used in industrial cooling and maintenance systems: ethylene glycol and propylene glycol; glutaraldehyde; isothiazolinones such as BIT and MIT; DBNPA; quaternary ammonium compounds; oxidising biocides; phosphonate or polymer scale inhibitors; and corrosion inhibitors including azoles, molybdate, nitrite, and phosphate blends. Some of these substances are mobile in water; some are toxic at low concentrations; some are capable of sorption to sediments and biofilms; and some may degrade only over timescales that are irrelevant if first arrival to a receptor is measured in hours rather than weeks.[15]

That distinction is critical. A statement that a substance is biodegradable in principle does not answer the planning question in karst. The relevant question is whether, if released at Rathmorrissy, it can reach a receptor before significant degradation occurs, or whether it may be stored in vadose or immobile zones and re-released later in long tails. The material already before the Board shows that karst systems are capable of both rapid first arrival and delayed remobilisation. That makes incomplete chemical disclosure a serious deficiency, not a minor paperwork issue.[16]

12.7 Why the Applicant's Water Assessment is Not Legally or Scientifically Sufficient

The EIAR expressly states that no Water Framework Directive assessment has been completed and that the need for such assessment was screened out. The rationale given is that there are no surface-water features within the study area, and that design mitigation will make any groundwater risk negligible. That is not a lawful or rational basis for exclusion where the underlying receptor is a regionally important conduit-karst aquifer and where the receiving environment already includes identified groundwater bodies and a groundwater-dependent European site.[17]

In the present case, the legal defect is not subtle. The application seeks consent for an industrial installation in conceded karst terrain, while failing to demonstrate actual groundwater flowpaths and while simultaneously relying on drainage infiltration, underground containment, and deferred hydrogeological follow-up. In those circumstances, the Board cannot be satisfied, on the basis of complete, precise, and definitive information, that the project will not adversely affect groundwater status, private supplies, or the integrity of downstream protected sites.[18]

The same reasoning applies under Article 6(3) of the Habitats Directive. Where a project is capable of affecting a European site through groundwater, the competent authority must identify and assess that pathway. If the pathway remains unproven because no tracing has been undertaken, then scientific doubt remains. That doubt cannot be cured by general statements about bunding, tanks, or licensing, because those are mitigation or regulatory controls, not evidence that a receptor pathway does not exist.[19]

Likewise, the Drinking Water Directive now requires a risk-based approach extending from the catchment to the consumer. That requirement presupposes that the catchment pathway is understood. Here it is not. The earlier senior-counsel chapter rightly emphasises that the presence of multiple nearby wells, boreholes, karst features, and turloughs means that potable receptors are plausible and cannot be screened out by assumption.[20]

12.8 Conclusion and Submitted Grounds for Refusal

In summary, the Rathmorrissy site is not an ordinary greenfield site. It is a proven karst setting, underlain by Burren Formation limestone, classified by the applicant as a regionally important conduit-karst aquifer, and already showing mapped karst features and multiple geophysical anomalies within the development area. The hydrogeological sensitivity of the receiving environment is therefore common ground.[21]

The application nevertheless proceeds without the one category of site-specific evidence most needed in karst: tracer-derived flowpath delineation. Instead, it relies on a short study buffer, screened-out WFD assessment, deferred groundwater assessment, underground tanks, soakaway-based drainage, and pH-triggered diversion logic. None of those matters establishes that surrounding wells, groundwater bodies, groundwater-dependent ecosystems, or protected sites are safe from contamination risk.[22]

For those reasons, it is respectfully submitted that consent should be refused. The application fails to provide the complete and scientifically robust hydrogeological evidence necessary to support a lawful conclusion that the project will not cause deterioration of groundwater, will not pose a risk to private or public water supplies, and will not adversely affect the integrity of groundwater-dependent European sites. The prudent and legally correct course is refusal, or at minimum the withholding of consent unless and until the applicant provides tracer-based flowpath evidence, a proper groundwater pathway assessment, a Water Framework Directive assessment, and a full chemical risk characterisation specific to this karst setting.[23]

12.9 Footnotes and Authorities

1. Cashla Peaker Plant EIAR, Volume 2, Chapter 12 and Figure 11-15 / Figure 12-2 / Figure 12-3; see also the site location and project description identifying Pollnagroagh / Rathmorrissy, Athenry, Co. Galway, and the project boundary. The user-supplied site coordinates are 53.300827, -8.801966.

2. Cashla Peaker Plant EIAR, Volume 2, p. 570, section 12.3.2.1, recording five identified potential karst features within 20 m of the proposed access road, two within 20 m of the underground cable route, and eighteen Terra Survey anomalies interpreted as potential karst features beneath the site.

3. Cashla Peaker Plant EIAR, Volume 2, p. 570, section 12.3.2.2, stating that the project site is underlain by a Regionally Important Aquifer – Karstified (Rk) (conduit), and explaining the significance of extreme groundwater vulnerability in karst.

4. Cashla Peaker Plant EIAR, Volume 2, Table 5-6 at pp. 256–257, identifying the Clarinbridge groundwater body and the GWDTE–Galway Bay Complex Fens (SAC000268) as relevant groundwater receptors.

5. See Chapter 12: Karst Hydrogeology, Groundwater Risk and Legal Assessment (Final Senior Counsel Submission), which correctly summarises the hydrogeological character of western Irish lowland karst and the rapid transport consequences of conduit flow.

6. Karst Flow Models and Contaminant Transport in the Burren Lowlands Karst System (compiled objection research), summarising Irish tracer evidence from Ballyvaughan, Burren, Bell Harbour and Kinvara–Gort, including reported velocities from tens to hundreds of metres per hour and up to c. 460 m/hour in coastal karst settings.

7. Cashla Peaker Plant EIAR, Volume 2, section 12.1.1 and section 12.1.2, adopting a 2 km study area and justifying that buffer on the basis that the proposed project does not include large-scale earthworks, dewatering, or direct works in a surface-water feature.

8. Chapter 12: Karst Hydrogeology, Groundwater Risk and Legal Assessment (Final Senior Counsel Submission), sections 12.5–12.6, emphasising the absence of dye tracing and the inability, in karst, to infer actual groundwater pathways from surface topography alone.

9. Cashla Peaker Plant EIAR, Volume 2, p. 590, section 12.7.1, stating that groundwater monitoring may be required pending completion of a Detailed Piling Risk Assessment and Hydrogeological Assessment.

10. Cashla Peaker Plant EIAR, Volume 2, pp. 103–104, section 2.2.8.3.1, describing the contaminated-firewater system, actuator valves controlled by pH/contaminant probes, SCADA linkage, and the statement that no additional controls are required.

11. Cashla Peaker Plant EIAR, Volume 2, pp. 104, section 2.2.8.4.1–2.2.8.4.2, describing solvent clean-down and washdown solutions discharged to sealed underground tanks, with approximately 2 m^3 of wash-water / cleaning solution on each occasion.

12. Karst Flow Models and Contaminant Transport in the Burren Lowlands Karst System (objection research), identifying pH-trigger limitations, sensor and SCADA failure modes, and the inadequacy of underground closed systems as a fail-safe response in karst.

13. Ibid., section on engineering methods for contaminated-water storage in karst, recommending source control first, avoidance of underground storage where practicable, above-ground double containment, and continuous leak detection.

14. Chapter 12: Karst Hydrogeology, Groundwater Risk and Legal Assessment (Final Senior Counsel Submission), section 12.7, noting that approximately 1,100 litres of biocides are proposed to be stored on site and that the EIAR does not identify the relevant chemical formulations with sufficient specificity.

15. Karst Flow Models and Contaminant Transport in the Burren Lowlands Karst System (objection research), table of cooling-system chemical classes and karst-relevant environmental concerns, including glycols, glutaraldehyde, isothiazolinones, DBNPA, quaternary ammonium compounds, oxidising biocides, scale inhibitors, and corrosion inhibitors.

16. Ibid., sections addressing karst retention–release behaviour, vadose storage, and the distinction between theoretical biodegradability and actual receptor travel time in conduit karst.

17. Cashla Peaker Plant EIAR, Volume 2, pp. 563–570, especially the express statement that no Water Framework Directive assessment has been completed and that the need for such assessment was screened out.

18. See Article 4 of Directive 2000/60/EC (Water Framework Directive); Article 6(3) of Directive 92/43/EEC (Habitats Directive); and Article 8 / catchment-risk framework of Directive (EU) 2020/2184 (Drinking Water Directive).

19. Case C-127/02 Waddenvereniging and Vogelbeschermingsvereniging (Waddenzee); Case C-258/11 Sweetman; Case C-461/17 Holohan; and Case C-461/13 Bund für Umwelt und Naturschutz Deutschland eV v Bundesrepublik Deutschland (Weser).

20. Chapter 12: Karst Hydrogeology, Groundwater Risk and Legal Assessment (Final Senior Counsel Submission), sections 12.9–12.14, including the discussion of potable receptors and the legal consequences of unresolved groundwater pathways.

21. Cashla Peaker Plant EIAR, Volume 2, pp. 570 and related figures, together with the geophysical and karst mapping already described in the application.

22. Cashla Peaker Plant EIAR, Volume 2, sections 12.1, 12.3, 12.7 and section 2.2.8.3–2.2.8.4.

23. See also Kelly v An Bord Pleanála [2014] IEHC 400, as cited in the earlier senior-counsel chapter supplied by the user, for the requirement that the decision-maker have complete and precise information before granting consent in a legally sensitive environmental context.

Chapter 13

How Peaker Plant Run Times Are Developing in Ireland

Irish peaker plant runtime data suggest a system that is becoming more reliant on flexible thermal capacity, but not in a smooth or linear way. The public EPA record shows that some plants experience sharp year-to-year swings in actual running hours, while many newer projects are defined more by permitted or modelled annual hours than by long operating histories. This matters because peakers do not behave like baseload assets: they are called on when demand is high, renewable output is low, or security-of-supply conditions tighten.

Method note: The EPA public record does not provide one standard runtime field across all peaker plants. This chapter therefore separates actual reported run-hours from permitted, expected, or modelled annual hours. The distinction is crucial: actual hours show how plants were used, while expected or modelled hours show how developers and regulators thought they might be used.

The two tables below illustrate that distinction. Table 13.1 summarises actual run-hours found in EPA records. Table 13.2 then shows the broader operating envelopes found in licensing and application material. Read together, they suggest that Ireland is building a more explicit peaking and emergency generation layer, even though actual utilisation remains volatile and event-driven.

13.1 Actual run-hours in the EPA record

The actual-runtime record is uneven. Some plants have clean annual totals, while others report by turbine or only at year-to-date checkpoints. That is why the table below should be read as a structured evidence summary rather than a perfectly standardised national dataset.

Table 13.1 *Actual peaker plant run-hours identified in EPA records discussed in this chat.*

Plant	Runtime figure reported in EPA material	Interpretive note
Tawnaghmore Generating Station (P0566-02)	2020: 103 h; 2021: 597 h; 2022: 480 h; 2023: 96 h; 2024: 290 h	Cleanest annual site-level series in the EPA material; useful as the main year-on-year example.
Rhode Generating Station (P0694-01)	2020 max on Unit 1B: 237.5 h; 2021 YTD: 302.9 / 353.1 / 305.7 / 388.8 h; 2021 full-year: 618 / 730 / 612.5 / 753.63 h; 2022 YTD: 292.1 / 427.8 / 311.8 / 383.6 h	Per-turbine rather than site-total figures; EPA records mix year-to-date and full-year reporting points.
Aghada OCGTs	2020: AT1 182 h; AT2 105 h; AT4 694 h	Per-unit run-hours in an EPA-hosted energy-efficiency report.
Corduff Flexgen (P1138-01)	2024: 150 h	Commercial operation started on 27 September 2024.
Ringsend Flexgen (P1151-01)	2024: 500 h	Commercial operation started on 29 August 2024.
Huntstown Temporary Emergency Power Plant (P1194-01)	2024: no grid-dispatch operation reported; monthly short maintenance runs only	The public AER describes non-dispatch in 2024; it does not provide a site total for actual annual run-hours.

Source note: *Compiled from EPA LEAP files and annual environmental reports cited in the chat, including Tawnaghmore, Rhode, Aghada, Corduff, Ringsend, and Huntstown records.*

Permitted, expected, and modelled annual runtimes

Licensing and application files often contain a different kind of evidence: not what plants actually ran for, but the annual hours that were permitted, expected, or used in emissions modelling. These figures are analytically important because they show how the fleet is being framed and planned, even where there is not yet a long operating history.

Table 13.2 *Permitted, expected, or modelled annual runtimes found in EPA licensing and application material.*

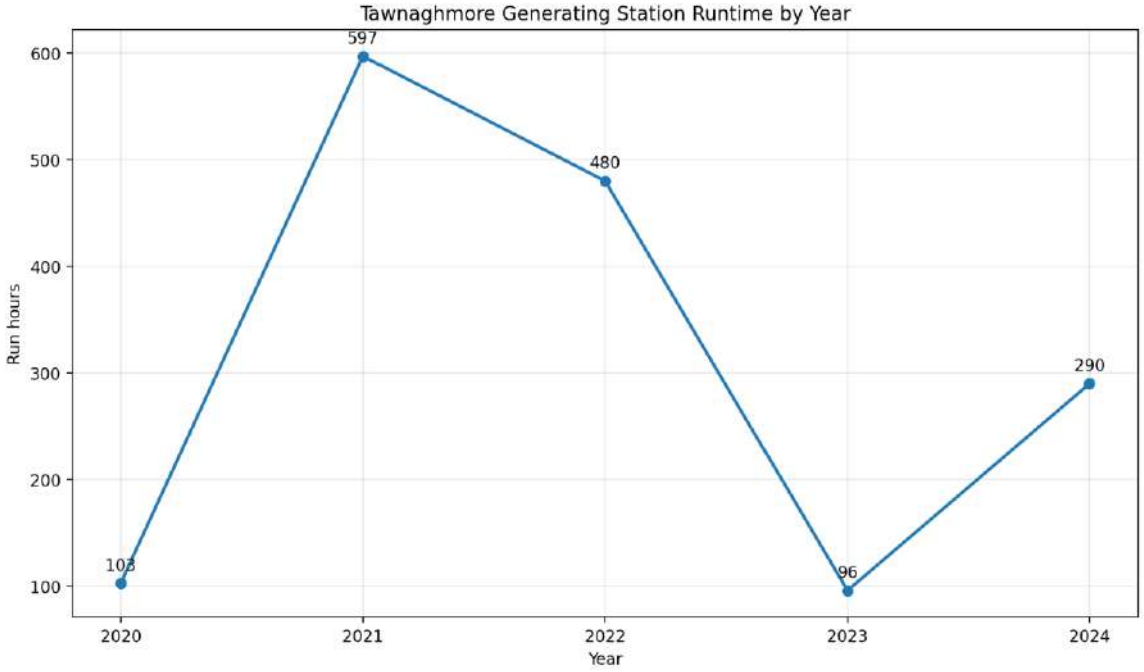
Plant or project	Annual runtime figure in EPA file	Interpretive note
North Wall temporary emergency generation (P0579-04 review)	500 h/yr on natural gas	Permitted or expected limited-use emergency operation.
Poolbeg OCGT review (P0577-05 review)	8,736 h/yr on gas; or 8,260 h/yr on gas + 500 h/yr on gas oil	Worst-case or modelled operating scenarios rather than an observed run history.
Corduff Flexgen (P1138-01 licensing file)	<1,000 h/yr	Expected peak-period operation, described as non-continuous.
Ringsend Flexgen (P1151-01 licensing file)	~1,000 h/yr or <1,000 h/yr	Expected or modelled peak-period operation.
Profile Park / Greener Ideas (P1196-01)	8,760 h/yr on gas + 150 h/yr on gas oil	Proposed operating scenario in EPA licensing material.
Athlone / Greener Ideas (P1197-01)	8,760 h/yr on gas + <500 h/yr on gas oil	Gas operation proposed at high levels; gas-oil operation licence-limited.
Castlelost Flex Gen (P1193-01)	1,000 h/yr “normal” case, with fuller worst-case scenarios also modelled	Reserve OCGT plant with multiple modelling assumptions.
Duleek / Carranstown / Platin OCGT	>500 and <1,500 h/yr in one file; up to 1,800 h/yr in later material	EPA files appear to reflect evolving proposal phases.
Tarbert Next Generation OCGT	1,800 h/yr	Expected non-continuous operation.
Tarbert temporary emergency generation	500 h/yr	Limited temporary emergency role.
Cushaling Power peaking plant (P0482-04)	~1,000 h/yr expected; up to 1,500 h/yr possible	Planning-era expectation rather than later observed annual hours.

Source note: *These are not observed annual run-hours. They are permitted, expected, or modelled operating assumptions drawn from EPA licensing or inspector-report material discussed in the chat.*

13.2 Tawnaghmore as the clearest annual example

Tawnaghmore provides the cleanest annual site-level runtime series in the material discussed here. The station moved from 103 hours in 2020 to 597 hours in 2021, eased to 480 hours in 2022, dropped sharply to 96 hours in 2023, and then recovered to 290 hours in 2024. Figure 13.1 shows that the pattern is not a straight line. Instead, it resembles a true peaking asset responding to system conditions: a strong ramp-up during tighter periods, followed by retrenchment and then a partial rebound.

Figure 13.1 *Tawnaghmore Generating Station runtime by year.*



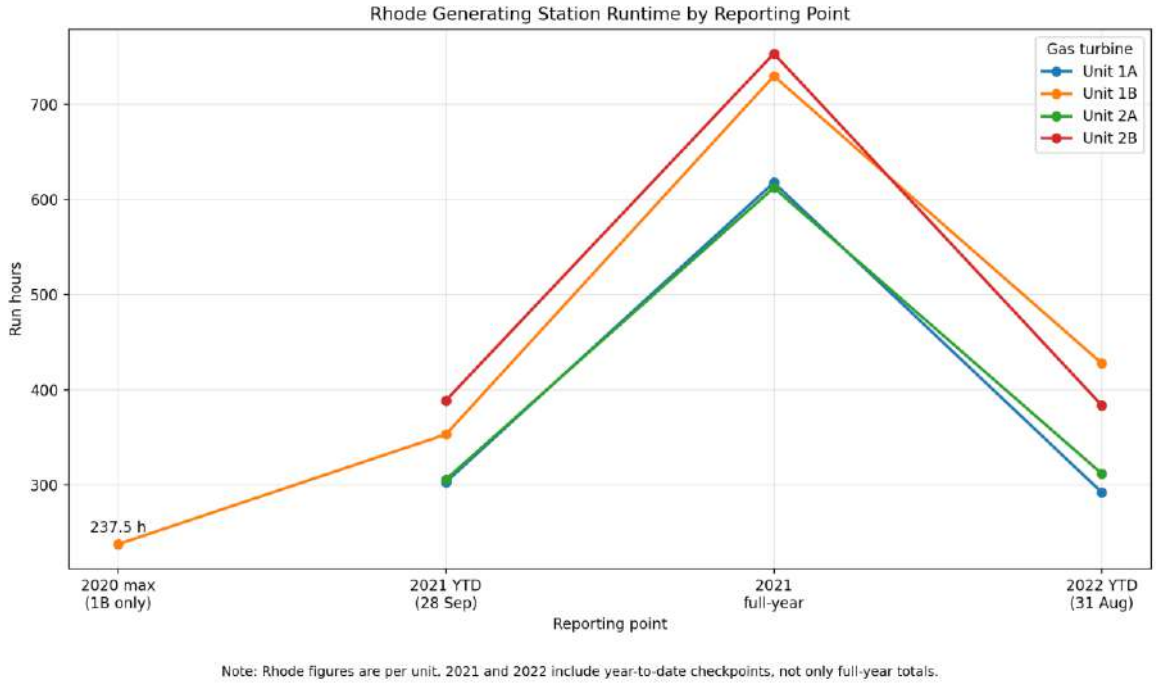
Note: *Compiled from the EPA annual run-hour figures discussed in this chapter: 103 hours (2020), 597 (2021), 480 (2022), 96 (2023), and 290 (2024).*

Tawnaghmore is therefore a useful reminder that development in the peaker fleet should not be measured only by whether annual hours keep rising. The commercial and system value of a peaker lies in availability under stress, not in steady utilisation. A plant can become more important to the system even if its runtime falls in one year and rises in the next. From that perspective, the Tawnaghmore series suggests an increasingly formalised flexibility role rather than a transition toward baseload behaviour.

13.3 Rhode as evidence of high-use episodes rather than a clean annual trend

Rhode tells a related story, but with less tidy evidence. The EPA material reports hours by turbine rather than one annual site total and mixes a 2020 maximum figure for Unit 1B with 2021 year-to-date values, full-year 2021 values, and 2022 year-to-date values. Even so, the pattern remains informative. The full-year 2021 figures are materially higher than the later 2022 year-to-date checkpoint across all four units, which supports the view that peaker dispatch can rise sharply during tight system periods and then moderate again.

Figure 13.2 *Rhode Generating Station runtime by reporting point and turbine.*



Note: *Rhode values are reported per turbine, not as a site total, and combine annual and year-to-date reporting points. The figure should therefore be read as an operational indicator rather than as a clean annual time series.*

Rhode therefore reinforces the same broad conclusion suggested by Tawnaghmore. Irish peaker plants do not show a simple one-directional growth path in runtime. What they show is the capacity for pronounced bursts of operation when the system needs them. That is the signature of a peaking fleet being used as system insurance rather than as continuously running generation.

13.4 What the development pattern appears to be

Volatility matters. Actual runtime appears highly variable rather than steadily rising. The Tawnaghmore series shows how sharply annual hours can move up or down. Rhode, even with less tidy reporting, points in the same direction.

The fleet is broadening. Newer emergency and flex-generation plants are entering the public record with relatively modest initial actual hours, such as Corduff at 150 hours and Ringsend at 500 hours in 2024, but with clearly defined peaking or security-of-supply roles.

Licensing envelopes are wider than actual usage. Many EPA files present plants as limited-use peakers, yet some gas-fired proposals are modelled for much heavier use, including 1,800-hour cases and, in some application scenarios, full-year gas operation. That gap shows the difference between what the system may want available and what it actually dispatches.

Reporting remains incomplete. The public EPA material is valuable but fragmented. Some plants have clear annual totals, while others only provide per-unit hours, partial-year checkpoints, or modelled cases. Better standardised annual site-level reporting would make system analysis much easier.

On the evidence assembled in this chat, Irish peaker plant runtimes are developing along two lines at once. Operationally, actual hours remain episodic and highly sensitive to system conditions, as Tawnaghmore and Rhode demonstrate. Institutionally, however, the fleet is being widened through new flex-generation and temporary emergency projects whose licensing files make the peaking role explicit. The result is not the emergence of a new baseload fleet. It is the maturation of a more formalised, more diverse, and still selectively used flexibility layer within the Irish electricity system.

13.5 Source basis for this chapter

1. EPA LEAP annual environmental report files for Tawnaghmore Generating Station (licence P0566-02) for 2020-2024.
2. EPA LEAP correspondence and runtime material for Rhode Generating Station (licence P0694-01).
3. EPA-hosted energy-efficiency reporting for Aghada OCGTs, plus EPA AERs for Corduff Flexgen, Ringsend Flexgen, and Huntstown Temporary Emergency Power Plant.
4. EPA licensing or inspector-report material for North Wall, Poolbeg, Profile Park / Greener Ideas, Athlone / Greener Ideas, Castlelost, Duleek / Carranstown, Tarbert, and Cushaling, as cited in the chat.

CHAPTER 14

CONSTRUCTION PHASE WASTE MANAGEMENT, WATER PROTECTION AND MATERIAL CONTROLS

This chapter is prepared for use in support of an objection to An Coimisiun Pleanála. It reviews the construction-phase waste strategy described in Volume 2 of the Cashla Peaker Plant EIAR, with specific attention to excavated materials, temporary stockpiles, dust and trackout, imported fill and possible backfill, protection of groundwater in a karst setting, nearby wells and groundwater-dependent receptors, and the adequacy of the compliance controls proposed. The chapter is based on the main EIAR and on current EPA, GSI, and Government of Ireland guidance current at the date of writing.

14.1 Introduction

The central question is not whether the EIAR contains any construction-phase waste controls. It does. The real question is whether the controls described are sufficiently specific, mandatory and receptor-led to amount to good practice on a greenfield site underlain by a regionally important karstified aquifer, with extreme groundwater vulnerability in parts of the project footprint and route corridor, with multiple groundwater abstractions in the vicinity, with a groundwater dependent terrestrial ecosystem within the site boundary, and with the project positioned between the M6, M17 and M18 motorway infrastructure. In the writer's opinion, the EIAR demonstrates a recognisable framework, but it does not yet demonstrate best practice for a site of this sensitivity.

That conclusion matters because construction-phase waste and pollution effects in karst do not behave like effects in ordinary overburden-dominated settings. Fine material, nutrient-rich topsoil fractions, hydrocarbons, concrete-affected water, and other contaminants may move rapidly downward through fissures, swallow features, and epikarst pathways, with limited attenuation before reaching groundwater, wells, springs, or groundwater-fed habitats. In such a

setting, waste management, stockpile control, runoff handling, and material acceptance protocols are not subsidiary issues. They are core impact-control measures.

14.2 What the EIAR says the construction waste strategy is

Volume 2 states that the contractor will implement a project-specific Detailed Resource and Waste Management Plan developed in accordance with the relevant 2021 EPA guidance, and that unsuitable or excess soils are to be sampled, tested, classified, and removed off-site in accordance with waste law. It also states that all waste products arising during construction are to be managed under the Waste Management Act and disposed of at fully licensed disposal or recovery facilities. Suitable excavated material is intended to be reused on site for earthworks and backfill where possible, and topsoil and subsoil are to be reinstated as part of landscaping where possible (AtkinsRealis, 2026, EIAR Volume 2, pp. 767-768).

The same chapter also states that all imported fill material will be clean, uncontaminated, and suitable engineering grade fill material, that temporary stockpiles will be kept away from the immediate excavation area, and that temporary stockpile height will not exceed 3 meters (AtkinsRealis, 2026, EIAR Volume 2, pp. 772-773). On the face of it, that is a recognisable and partly modern approach: segregation, testing, licensed disposal and on-site re-use of suitable material in order to reduce off-site export and import demands.

The EIAR also contains a broad suite of dust and traffic management measures. In the air quality mitigation commitments, construction compounds are to be laid out so that dust-causing activities such as stockpiles are located away from receptors so far as practicable; a 2.4 metre hoarding is to be provided along sensitive boundaries; stockpiles are to be covered to prevent wind whipping; skips are to be covered; dusty work is to be limited in so far as practicable during high-risk dry and windy conditions; and construction dust deposition monitoring is to be undertaken during the works (AtkinsRealis, 2026, EIAR Volume 2, pp. 403-404 and p. 752).

The traffic chapter adds more specific road hygiene measures. It requires suction road sweeping to remove project-related dirt and material deposited on the road network, with sweeping to be carried out daily, or at other intervals as required, where debris or mud deposits are evident near the access points. It also requires wheel washing and immediate manual clearance if mud or debris reaches the road when the sweeper is not present (AtkinsRealis, 2026, EIAR Volume 2, p. 504).

For water protection, the EIAR provides that if dewatering is required, water will be treated before discharge; small volumes may be treated through a silt dewatering bag and larger volumes through settlement tanks; excavations will be left open only for minimal periods; concrete washout is to occur only in designated controlled areas remote from water features; concrete wastewater is to be settled and solids removed off site; and wash-down water from exposed concrete surfaces is to be trapped, allowed to settle and to reach neutral pH before clarified water is released to the drainage system or allowed to percolate into the ground. HDD works are to be preceded by geotechnical assessment, with continuous monitoring for bentonite breakout and bunding around bentonite batching, pumping and recycling areas (AtkinsRealis, 2026, EIAR Volume 2, pp. 587 and 783-784).

The compliance framework proposed in Volume 2 also includes a Construction Environmental Management Plan, a project-specific waste plan, RAMS, an Environmental Manager, sign-off sheets, designated haul routes, karst-related controls, and the possibility of groundwater monitoring depending on further detailed assessment (AtkinsRealis, 2026, EIAR Volume 2, pp. 751-752, 772-773, and p. 590).

14.3 Why this site requires a higher standard than generic good practice

The site is not an ordinary development platform. The EIAR places the proposed peaker plant on a greenfield agricultural site approximately 2 kilometres west of Athenry, between the northern

and eastern arms of the M6/M18 interchange, with access connecting to the L3103 approximately 1 kilometre east of the M17. The surrounding road environment includes the M6, M17, and M18, and the project footprint and associated route corridor are close to rural houses, farms, and local roads (AtkinsRealis, 2026, EIAR Volume 2, pp. 31-34, 476-478, and 592).

The human health baseline records 82 residential properties within 250 meters of the project boundary and a further 29 between 250 and 500 meters. It also identifies local schools, community facilities, and other receptors in the wider study area (AtkinsRealis, 2026, EIAR Volume 2, pp. 201-203). The EIAR, therefore, cannot be read as if this were a remote or receptor-free location.

The hydrogeological sensitivity is higher again. The EIAR states that the project site is underlain by a Regionally Important Aquifer - Karstified (Rk) (conduit), and that groundwater vulnerability is predominantly rock at or near surface or karst beneath the site, with sections of moderate, high and extreme vulnerability along the access track and underground cable route. It further explains that extreme groundwater vulnerability is associated with karst landforms because they provide direct pathways for contaminants to enter the aquifer from the surface (AtkinsRealis, 2026, EIAR Volume 2, pp. 569-571).

The wider groundwater body description is also highly material. The EIAR records that the Clarinbridge groundwater body contains numerous karst features, including turloughs, caves, dolines, swallow holes and springs; that rapid groundwater flow velocities have been recorded; that storage in karstified bedrock is low; that potential contaminant attenuation is limited; and that the interaction between surface water and groundwater is high (AtkinsRealis, 2026, EIAR Volume 2, pp. 572-573). Those are not incidental observations. They mean that waste and runoff controls must be designed on the basis that contaminants may travel quickly and unpredictably.

Groundwater receptors are not theoretical. The EIAR states that there are six wells and springs within the general vicinity of the site. These include one borehole within the project site, two

abstractions crossing the western border of the proposed site, one borehole along the underground cable route, one group scheme borehole 0.12 kilometres east of the underground cable route, and one abstraction crossed by the underground cable route. Several of these are described as agricultural and domestic uses (AtkinsRealis, 2026, EIAR Volume 2, p. 575).

In addition, the EIAR records that the Galway Bay Complex Fens groundwater dependent terrestrial ecosystem lies within the site boundary and is assigned extremely high importance, and the AA screening recognises potential indirect groundwater connectivity from the karst limestone site to European sites including Cregganna Marsh SPA, Inner Galway Bay SPA and Galway Bay Complex SAC during the construction phase (AtkinsRealis, 2026, EIAR Volume 2, pp. 81 and 574).

14.4 Assessment against good practice

At a general level, the EIAR is broadly aligned with the structure of modern Irish construction and demolition waste management practice. It refers to the 2021 EPA guidance for the preparation of resource and waste management plans; it proposes segregation, testing, licensed recovery or disposal, and re-use of suitable excavated material; and it provides a recognisable compliance architecture through the CEMP and related contractor plans. Current government guidance continues to point applicants and contractors to the EPA's 2021 Best Practice Guidelines as the operative published guidance for C and D waste planning and management (Department of Climate, Energy and the Environment, 2024; EPA, 2021).

However, good practice in the abstract is not the test that matters here. The issue is whether the measures are site-specific enough for a karst setting with nearby wells, a groundwater dependent ecosystem, and a motorway environment. On that question, the answer is less satisfactory. Too many of the most important controls are framed as matters that will be decided later, or only implemented if and when the contractor considers them necessary. Examples include wheel wash being installed as needed, road sweeping being implemented as necessary, dust

suppression being used as necessary during dry periods, and groundwater monitoring only being required depending on future piling and hydrogeological assessments (AtkinsRealis, 2026, EIAR Volume 2, pp. 772-773 and p. 590).

In a low sensitivity setting, that kind of drafting may be tolerable. In a karstified, extremely vulnerable aquifer, it is not enough. GSI groundwater protection guidance is based on a source-pathway-target approach and emphasises preventive measures, appropriate land-use control, monitoring networks and specific operational practices as the means of reducing contamination risk. Put simply, the more vulnerable the setting, the less acceptable it is to leave the decisive safeguards to contractor discretion and post-consent detail (GSI, n.d.; GSI, EPA, and DOEHLG, 1999).

There is also an internal tension in the EIAR. The water chapter states that no Water Framework Directive assessment has been completed and that the need for such an assessment was screened out, largely because no surface water features were identified within the study area and because design mitigation was considered adequate (AtkinsRealis, 2026, EIAR Volume 2, p. 569). Yet the same EIAR accepts that karst limestone creates potential indirect groundwater connectivity to European sites during construction, and the biodiversity chapter accepts that groundwater quality may be affected by sediment release, fuel or oil spills, and concrete works because the area is underlain by limestone (AtkinsRealis, 2026, EIAR Volume 2, pp. 81 and 284). That is precisely why a more precautionary, groundwater-led waste management assessment is needed.

14.5 Stockpiles, dust, vegetation effects and motorway safety

Your concern regarding uncovered excavated soil is well-founded, although the position in the EIAR is mixed rather than wholly absent. On the one hand, the air quality commitments are relatively strong. They state that stockpiles will be covered to prevent wind whipping, that stockpiles should be located away from receptors so far as practicable, that daily visual

inspections will be carried out, that work generating dust should be limited during periods of low rainfall and high wind, and that dust deposition monitoring will be used to confirm performance (AtkinsRealis, 2026, EIAR Volume 2, pp. 403-404 and p. 752).

On the other hand, the land, soils, and geology commitments are notably softer. There, the EIAR states only that all excavated materials will be stored in an appropriate, safe, and stable location, with a maximum stockpile height of 3 metres, and that wheel wash, road sweeping, and dust suppression will be implemented as needed or as necessary (AtkinsRealis, 2026, EIAR Volume 2, pp. 772-773). In other words, the main chapter dealing with soils and contamination does not itself impose an unequivocal site-wide obligation that friable or dusty excavated materials are to be covered, capped, stabilised or otherwise contained from the moment they are stockpiled. That inconsistency is important.

The EIAR itself accepts that the construction dust risk is not trivial. It classifies earthworks as large because the total site area exceeds 110,000 square meters, and it classifies trackout as large because peak construction will generate more than 50 outward HGV movements per day. On that basis, it concludes that there is at most a high risk of dust soiling impacts associated with the works (AtkinsRealis, 2026, EIAR Volume 2, p. 384). The traffic chapter correspondingly requires daily suction sweeping, wheel washing, and immediate manual clearance of mud or debris where needed (AtkinsRealis, 2026, EIAR Volume 2, p. 504).

For objection purposes, the key point is this: the EIAR itself identifies a high dust-soiling risk, but part of the soil-handling control package remains discretionary. That is not best practice for a karst site beside strategic roads. Uncovered or poorly managed topsoil and subsoil stockpiles can give rise to dust soiling of nearby vegetation and property, nutrient-bearing fines washing into the subsurface, and mud or fine material being tracked onto nearby carriageways. Where carriageway contamination occurs in wet conditions, the risk is not merely visual nuisance; it can

affect skid resistance and road safety, especially at and around a motorway interchange and along local roads used by construction traffic.

The same point arises ecologically. The operational air chapter contains low and not significant deposition results for Rahasane Turlough and other designated sites in relation to stack emissions (AtkinsRealis, 2026, EIAR Volume 2, pp. 396-399). That does not answer the separate question of whether construction-phase stockpiles, exposed soils and runoff have been assessed specifically enough for groundwater-fed and turlough-linked systems. The biodiversity chapter expressly notes that sediment release during excavation can increase turbidity, reduce photosynthesis and contribute to eutrophication or ecological change, and it identifies limestone and groundwater as the principal pathway of concern (AtkinsRealis, 2026, EIAR Volume 2, p. 284).

14.6 Groundwater, wells and water protection in a karst setting

The greatest weakness in the EIAR is its continued reliance on infiltration-based drainage and disposal concepts without enough site-specific restrictions for a karst aquifer. The project description states that stormwater generated by the project will discharge to ground by infiltration through a soakaway pond, filter drains, and other SuDS measures, and the construction assessment records that rainfall and surface water runoff are to be captured and pumped to infiltration lagoons (AtkinsRealis, 2026, EIAR Volume 2, pp. 102-103 and p. 579). The operational phase similarly assumes that uncontaminated runoff will infiltrate to ground through the drainage system (AtkinsRealis, 2026, EIAR Volume 2, p. 581).

In a general planning context, infiltration-based SuDS may often be positive. In a karstified aquifer with limited attenuation, nearby agricultural and domestic abstractions, and a group scheme borehole close to the cable route, infiltration is not self-justifying. It demands a higher standard of proof, a stricter water quality envelope, and clear exclusion rules. The EIAR does provide useful measures - settlement tanks, silt bags, controlled concrete washout, bunding, interceptor systems, actuator-controlled firewater containment and off-site disposal of contaminated

liquids (AtkinsRealis, 2026, EIAR Volume 2, pp. 102-104, 587 and 783-784). Yet it still allows for clarified water from construction processes to be released or allowed to percolate to ground once sediment has settled and pH is neutralised (AtkinsRealis, 2026, EIAR Volume 2, p. 587). In the writer's view, that is not a sufficiently conservative approach for this karst setting unless accompanied by strict analytical thresholds, monitoring, hydrogeologist approval, and receptor stand-off distances.

The well protection issue is particularly important. The EIAR does not describe a fixed programme of baseline sampling and repeated monitoring for the six identified wells and springs. Instead, groundwater monitoring is framed as something that may be required depending on later risk assessments (AtkinsRealis, 2026, EIAR Volume 2, p. 590). For a site where one abstraction lies within the project site, others cross the western border of the proposed site, and others lie on or close to the cable route, that is too weak. Good practice in this setting would require well-specific protection and monitoring from the outset, not only after later detailed design.

It is also notable that the EIAR screens out a formal Water Framework Directive assessment despite accepting karst sensitivity and despite the acknowledged groundwater pathway to downstream designated sites (AtkinsRealis, 2026, EIAR Volume 2, pp. 81 and 569). That screening stance further reinforces the need for stricter construction-phase waste and runoff controls, because the main environmental pathway here is groundwater rather than a visible stream or ditch that can be easily monitored in the field.

14.7 Imported fill, backfill and recycled materials

Volume 2 states that imported fill will be clean, uncontaminated and suitable engineering grade fill material, and that suitable excavated material may be reused on site as earthworks and backfill (AtkinsRealis, 2026, EIAR Volume 2, pp. 767-773). What it does not do, however, is state expressly that recycled construction and demolition aggregate or other secondary materials will not be used in this karst setting unless strict legal criteria are met. That omission matters.

The reason it matters is that the current EPA National End-of-Waste Criteria for Recycled Aggregates are highly restrictive. They state that recycled aggregate is not suitable where it would be in contact with groundwater or surface water, within 25 metres of a groundwater abstraction, within 10 metres of a natural surface water feature, spring, lake, turlough likely to flood, or cavernous or karstified limestone feature, and it is also not suitable for drainage or perforated pipe surrounds (EPA, 2023a). Those restrictions are directly relevant to this site because the EIAR identifies karstified limestone, multiple nearby abstractions, and groundwater-linked ecological receptors.

Accordingly, the EIAR should not be treated as demonstrating acceptability for any future recycled backfill proposal merely because it uses the words 'clean' and 'uncontaminated'. If any recycled aggregate is contemplated, a far more exacting material acceptance protocol would be required, including proof that the material has ceased to be waste under the EPA criteria, analytical compliance data, a statement of conformity, hydrogeological verification of stand-off distances, and a clear demonstration that the proposed use is outside the EPA exclusion categories. None of that has been set out in Volume 2.

A similar point applies to greenfield soil and stone if it is to be moved off-site or used under a by-product route. The EPA's current National By-Product Criteria for Greenfield Soil and Stone require such material to be free of anthropogenic material such as concrete, brick, metal, plastic and bituminous matter, free of listed contaminants, with topsoil segregated and used only in final surface layers, and accompanied by documentary controls including registration, an End User Declaration and a Statement of Conformity (EPA, 2024). Again, Volume 2 does not spell out how those documentary and material controls will be applied if site-won material is exported or if third-party material is brought to site.

For objection purposes, the submission point is therefore straightforward: on a karst site with nearby agricultural and domestic wells, the EIAR should either have ruled out recycled aggregate

and other secondary backfill materials altogether, or it should have provided a fully worked compliance pathway. It has done neither. That is a material gap.

14.8 Building protocol compliance controls identified in Volume 2

For completeness, it is fair to acknowledge that Volume 2 does identify a substantial compliance architecture. That architecture includes the following: a CEMP; a project-specific Detailed Resource and Waste Management Plan; an Environmental Manager responsible for dust and environmental issues; a complaints register; sign-off sheets; RAMS and PPE; a karst protocol; possible groundwater monitoring; detailed piling and dewatering risk assessments if required; designated haul routes; wheel wash and road sweeping; daily dust inspections; weather-based escalation of monitoring; dust deposition monitoring; controlled concrete washout; HDD geotechnical assessment and bentonite breakout monitoring; bunding and containment; and off-site removal of contaminated wastes and liquids to licensed facilities (AtkinsRealis, 2026, EIAR Volume 2, pp. 403-404, 504, 587, 751-752, 772-784 and p. 790).

The difficulty is not the absence of protocols in name. The difficulty is that the protocols are process-heavy but outcome-light. Too many crucial safeguards are reserved to future contractor plans, future detailed design or later assessment. The EIAR does not set out a mandatory material acceptance schedule for each imported batch. It does not set out mandatory stand-off distances from karst features and private wells for imported or reused material. It does not provide a fixed baseline and ongoing sampling programme for the identified abstractions. It does not impose an express prohibition on infiltration of construction water in excess of defined analytical thresholds. It does not make the covering or capping of stockpiles an unequivocal site-wide rule in every chapter. It does not set out a motorway-specific stop-work trigger for dust, mud or poor visibility conditions. Those are precisely the controls one would expect to see nailed down in a high-sensitivity karst setting.

It is also relevant that management of extracted material is said to be detailed in the Construction and Demolition Resource and Waste Management Plan appended elsewhere in the EIAR package rather than transparently set out in full in the main Volume 2 text (AtkinsRealis, 2026, EIAR Volume 2, p. 403). For a project of this sensitivity, the main EIAR should itself contain enough information to allow the decision-maker to understand, test, and condition the material handling regime.

14.9 Principal deficiencies in the EIAR

In the writer's opinion, the main deficiencies may be stated shortly as follows.

- First, the construction waste and pollution-control framework is generic in form but insufficiently site-specific for a karstified, extremely vulnerable aquifer with nearby abstractions and a groundwater dependent ecosystem.
- Second, the treatment of stockpiles and road hygiene is internally inconsistent. One set of commitments requires stockpile covering and active weather-based dust control, but another relies on safe storage, wheel wash, and road sweeping only as needed or as necessary.
- Third, the EIAR accepts an infiltration-based drainage and runoff strategy, including infiltration lagoons and soakaways, without a sufficiently precautionary prohibition on infiltration of construction waters that may still carry fine sediments, hydrocarbons or concrete-derived pollutants.
- Fourth, the EIAR identifies six wells and springs in the vicinity, including agricultural, domestic and group scheme uses, yet it does not commit to a fixed pre-construction and construction-phase monitoring programme for those receptors.
- Fifth, the EIAR does not expressly prohibit recycled aggregates or other secondary backfill materials, nor does it demonstrate compliance with the current EPA end-of-waste restrictions that apply near abstractions, turloughs, springs and karstified limestone.

- Sixth, the screening out of a Water Framework Directive assessment sits uneasily with the same EIAR's express recognition of karst groundwater pathways to downstream designated sites.
- Seventh, too much of the protective regime is deferred to future contractor documents and later assessments, which reduces the certainty available to the decision-maker at consent stage.

14.10 Conclusion

The overall strategy described in Volume 2 is not devoid of good practice. It contains many of the headings one would expect to see in a modern construction waste and pollution-control regime. However, in the writer's opinion, that is not enough to satisfy the test that matters here. On a regionally important karstified aquifer, with extremely high groundwater sensitivity, multiple local abstractions, a groundwater-dependent terrestrial ecosystem within the site boundary, recognised groundwater connectivity to downstream designated sites, and a road environment centred on the M6, M17, and M18 interchange, the waste management regime must be precise, mandatory, and demonstrably conservative.

As presently drafted, the EIAR does not yet demonstrate that construction-phase waste handling, stockpile management, imported fill control, runoff handling, and well protection will be carried out to that higher standard. It is therefore submitted that the application does not contain sufficient information to allow the Board to conclude, with confidence, that construction-phase waste procedures will avoid significant effects on groundwater, wells, groundwater-dependent habitats, vegetation, and road safety.

14.11 Recommended grounds of objection, conditions and further information

If the Board is not minded to refuse permission on this ground, the following minimum requirements should, in the writer's view, be sought by way of further information and/or imposed as express conditions before any construction commences:

- A mandatory Material Acceptance Protocol for all imported fill and backfill, including source verification, chemical certification, hydrogeologist sign-off, and express confirmation that no recycled aggregate or other secondary material will be used unless full EPA end-of-waste compliance is demonstrated for the proposed use and location.
- A condition prohibiting the use of recycled aggregate within any EPA exclusion zone, including within 25 meters of groundwater abstractions, within 10 meters of springs, turloughs, lakes, or cavernous/karstified limestone features, and in any drainage-related application.
- A requirement that all temporary stockpiles of excavated material, topsoil and subsoil be covered, capped or otherwise stabilised as soon as formed, and kept bunded and managed so that no friable or fine material is left exposed during dry or windy conditions.
- A fixed dust and trackout management regime, including compulsory wheel wash where soil-bearing vehicles exit the site, daily suction sweeping where required, receptor dust monitoring, and a stop-work or scale-back trigger during periods of elevated wind speed and insufficient rainfall where dust migration or road contamination risk increases.
- A pre-construction private well and spring survey, including identification, baseline sampling, and agreed trigger levels for all abstractions within the project vicinity and along the underground cable route, followed by monitoring during the works and a clear response protocol for deterioration.

- A prohibition on the infiltration to ground of any dewatering effluent, concrete-affected water or other construction water unless predefined water quality criteria are met and independently verified. Turbid, alkaline, or contaminated water should be contained and removed off-site where necessary.
- An updated hydrogeological risk assessment dealing specifically with karst pathways, infiltration proposals, stockpiles, concrete works, wells, and groundwater-dependent ecological receptors, together with justification for the screening out of a WFD assessment.
- Independent oversight by a suitably qualified hydrogeologist and Environmental Manager, with authority to stop works where karst instability, loss of drilling fluids, polluted runoff, well deterioration, unacceptable dust emissions, or road contamination is detected.

14.12 References

AtkinsRealis (2026). Cashla Peaker Plant Environmental Impact Assessment Report (EIAR) - Volume 2. Prepared for Bord Gais Energy Ltd., February 2026. Relevant chapters and pages cited in this chapter include Chapter 2, Chapter 4, Chapter 5, Chapter 7, Chapter 10, Chapter 11, Chapter 12, and Chapter 18.

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Environmental Protection Agency (2021). Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects. Available via: https://www.epa.ie/our-services/compliance--enforcement/waste/guide-to-cd-bpg/ (accessed 1 April 2026).

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Chapter 15 - Fire Safety, Major Accident Risk, Emergency Response and Residential Receptors

15.1 Introduction and essence of objection

This chapter objects to the proposed Cashla Peaker Plant, Case Ref. PA07.324113, on the separate but related grounds of fire safety, major-accident risk, emergency response, and off-site effects on nearby residential receptors and motorway users.[52] The public file describes a large open-cycle gas turbine power plant with a 30 m exhaust stack, substantial diesel storage, propane for ignition, ancillary skids and tanks, and a location between the northern and eastern arms of the M6/M18 interchange.[53] The same public file states that the project will be a Lower-tier COMAH site.[54]

In those circumstances, this is not a routine industrial building case. It is a hazardous energy installation in a constrained motorway setting. The Board cannot safely determine the application on the basis of broad generalities about fire safety. It requires a precise account of which elements are treated as buildings, which are treated as external process plant, how a fire would be detected and escalated on a largely automated site, how emergency access would operate in practice, and what the off-site consequences would be for nearby dwellings and persons using the adjoining motorway corridor.

52 An Coimisiún Pleanála, Case Ref. PA07.324113, case details and associated applicant documents for the Cashla Peaker Plant, lodged 27 February 2026.

53 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), pp. 10, 16-19.

54 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), p. 64.

15.2 Legislative and regulatory framework

The Building Control framework applies generally to new buildings, and the Building Regulations define an "industrial building" to include premises used for generating power.[55] Part B of the Second Schedule addresses fire safety, while Requirement B5 requires adequate provision for access for fire appliances and such other facilities as may reasonably be required to assist the fire service in the protection of life and property.[56]

Separately, section 13 of the Fire Services Act 1981 empowers a fire authority to advise a planning authority in relation to its planning functions.[57] Section 18 of the Fire Services code, as amended in 2003, requires the person having control of premises to take reasonable measures against outbreak of fire, provide reasonable fire safety measures and procedures, and ensure those measures and procedures are applied.[58] The Department's Fire Safety Guide confirms that this duty is directed at persons having control over premises other than a single dwelling house.[59]

The Tipperary Chief Fire Officer's letter (Appendix 3) helpfully explains a further distinction: the fire authority's statutory remit is principally directed to life safety and does not extend to

55 Department of Housing, Local Government and Heritage, "Building Control" (updated 21 May 2025); S.I. No. 497 of 1997, *Building Regulations 1997* (definition of "industrial building" and Part B, including B5).

56 Department of Housing, Local Government and Heritage, "Building Control" (updated 21 May 2025); S.I. No. 497 of 1997, *Building Regulations 1997* (definition of "industrial building" and Part B, including B5).

57 *Fire Services Act 1981*, s.13 ("Advice to planning authority").

58 *Licensing of Indoor Events Act 2003*, s.29 amending s.18 of the 1981 Act; Department of Housing, Local Government and Heritage, *Fire Safety Guide for Building Owners and Operators* (2023).

59 *Licensing of Indoor Events Act 2003*, s.29 amending s.18 of the 1981 Act; Department of Housing, Local Government and Heritage, *Fire Safety Guide for Building Owners and Operators* (2023).

property protection or environmental protection in the event of fire.60 That is important, because the environmental and major-accident aspects of this proposal also engage the EPA's industrial licensing regime and the HSA's COMAH / land-use planning role.616263

15.3 Why this proposal is not answered by saying that some elements are "not buildings"

The Tipperary letter states that anaerobic digesters are not considered buildings for the purposes addressed in that correspondence, while associated intake, storage and administration buildings would ordinarily fall to be dealt with under the Fire Safety Certificate process.64 That point is useful, but it cannot simply be transplanted to the present case without a project-specific analysis.

Here, the public planning file itself distinguishes between external plant and enclosed buildings. The EIAR describes the peaker plant as comprising the gas turbine, generator, stack, monitoring unit, fuel storage and supply systems, cooling and air systems, compressed-air and gas-handling skids, transformers and emergency generator, and then separately identifies multiple buildings, kiosks and tanks.65 The Planning Statement likewise lists the administration building, ESB substation building, workshop, electrical control building, water

60 Acting Chief Fire Officer, Tipperary Fire & Rescue Service, letter/email dated 16 February 2026 regarding proposed industrial anaerobic digestion facilities in Ballymackey, uploaded in this consultation record as *Tipperary_CoCo_Fire_officer_lerrter_2026.docx*.

61 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), p. 64.

62 Health and Safety Authority, "Land Use Planning" under COMAH / Seveso guidance.

63 Environmental Protection Agency, "Industrial Emissions licensing" and industrial licensing guidance.

64 Ibid.

65 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), pp. 10, 16-19.

treatment building, kiosks, fuel tanks, fire and service water tank, demineralised water tank, waste tank, firefighting skid, air and water skids, underground wastewater treatment plant and underground firewater tank.66

That mixed description matters. The Fire Services Act definition of "building" is itself broad and includes "a building, structure or erection" of any kind.67 Yet the public file does not contain any clear schedule identifying, element by element, what the applicant says is a building for Building Control / Part B / Fire Safety Certificate purposes, what is treated as external process plant, and what fire-safety regime is said to apply to each category. The absence of that schedule is a material defect in a development of this nature.

15.4 Automated operation, fire detection and notification of the fire service

The Planning Statement states that the proposed Cashla Peaker Plant will operate with "modern automated control systems", with on-site personnel present for maintenance, inspection and security as required, and that day-to-day staffing levels will typically comprise only 2-3 maintenance or security personnel, with an expected maximum of approximately 10 persons on site at any one time.68 Elsewhere, the Planning Statement says the development is not anticipated to generate significant operational traffic because of the minimal staff presence on site and its peaking operational profile.69

66 An Coimisiún Pleanála, *Cashla Peaker Plant Planning Statement* (February 2026), pp. 15-17; and *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), p. 19.

67 *Fire Services Act 1981*, interpretation section defining "building".

68 An Coimisiún Pleanála, *Cashla Peaker Plant Planning Statement* (February 2026), pp. 15-16 and 83.

69 An Coimisiún Pleanála, *Cashla Peaker Plant Planning Statement* (February 2026), pp. 15-16 and 83.

That feature of the project gives rise to an obvious question which, in the public file reviewed for this chapter, is not answered: if a fire breaks out in the turbine, fuel area, skids, transformer area, tanks, AGI, or associated plant, what is the sequence from detection to emergency notification? The publicly available planning material reviewed for this chapter does not disclose the fire-detection philosophy, detector coverage, cause-and-effect matrix, whether alarms are continuously monitored off site, whether an operator must verify an event before calling 999 / 112, or the maximum interval between alarm activation and notification of the fire service.

That lacuna is important because the emergency system in Ireland still depends on a call being routed through 112 / 999. The Government's guidance explains that, once connected to the emergency operator, the call is directed to the appropriate emergency service.70 The Tipperary Chief Fire Officer likewise stated that resources are mobilised by the regional control centre based on the information received from the 999 / 112 caller.71(Appendix 3) On a minimally staffed, automated hazardous installation, the Board should not assume that alarm transmission and mobilisation will occur within an acceptable timeframe unless that sequence is expressly disclosed and assessed.

15.5 Access, egress and fire service intervention

The public file places the site between the northern and eastern arms of the M6/M18 interchange and states that access to the site will be provided via a newly proposed

70 Department of the Taoiseach, "How to contact emergency services in Ireland" (updated 11 April 2025).

71 Acting Chief Fire Officer, Tipperary Fire & Rescue Service, letter / email dated 16 February 2026 regarding proposed industrial anaerobic digestion facilities in Ballymackey, uploaded in this consultation record as *Tipperary_CoCo_Fire_officer_lerrter_2026.docx*.

c. 1.15 km access road connecting to the L3103.72 The Main EIAR states expressly that the proposed access road from the L3103 will serve as the emergency access to the site.73 In practical terms, the public file therefore indicates a single external approach road for emergency intervention.

The site drawings do label both "main entrance gates" and "emergency access gates" within the site layout.74 However, internal gates are not the same as genuinely independent external access. On the material presently available, the Board cannot assume that a fire appliance, ambulance, Garda vehicle or other responder would have an alternative approach if the access road itself were obstructed, compromised by a vehicle incident, affected by smoke, or otherwise unavailable.

The concern is sharpened by the Planning Statement's statement that no lighting is proposed along the 1.15 km access track from the L3103 to the main entrance of the site, in order to minimise impact on the surrounding area.75 That may be acceptable for ordinary operations. It is a different question whether it is acceptable, or has been shown to be acceptable, for night-time or low-visibility emergency access to a Lower-tier COMAH energy installation.

72 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), pp. 10 and 19; and *Cashla Peaker Plant EIAR Volume 2 - Main EIAR* (February 2026), section 2.3.2 ("Emergency Access").

73 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), pp. 10 and 19; and *Cashla Peaker Plant EIAR Volume 2 - Main EIAR* (February 2026), section 2.3.2 ("Emergency Access").

74 An Coimisiún Pleanála, Drawing PEK3-ATK-ZZ-01-DR-CE-901103, *Site Surface Types Layout - Sheet 03*.

75 An Coimisiún Pleanála, *Cashla Peaker Plant Planning Statement* (February 2026), p. 19.

15.6 Nearby dwellings and the potential for smoke impact

The applicant's Planning Statement states that the closest residential dwelling is approximately 850 m to the north of the site, and that residential dwellings within 1 km to the west are separated from the site by the motorway corridor.76 That statement is, however, materially qualified by the objectors' own preliminary mapping.

Objector-supplied satellite measurements indicate at least four dwellings at approximately 518.01 m, 592.50 m, 593.82 m and 674.04 m from the measured point used on the accompanying maps.77 Those measurements are not a substitute for a surveyed receptor plan, and I do not present them as such. They are, however, plainly sufficient to demonstrate that the Board should not proceed on the untested assumption that there are no dwellings within a 500-700 m range of the proposed plant footprint or the principal plant area.

For ease of reference, the preliminary measurements relied on in this chapter are as follows: R1 - approximately 518.01 m to the west / north-west; R2 - approximately 592.50 m to the north-west; R3 - approximately 593.82 m to the north / north-west; and R4 - approximately 674.04 m to the west.78

The existence of those receptors matters because, in the event of a fire involving diesel, propane, oil systems or other combustible materials, smoke would be the immediate off-site hazard for nearby dwellings and for road users. The Board should not assume that normal operational emissions modelling answers that question. Unless the applicant has expressly assessed accidental smoke-plume consequences from fire - and no such assessment has been

76 An Coimisiún Pleanála, *Cashla Peaker Plant Planning Statement* (February 2026), p. 34.

77 Objector-supplied satellite map screenshots provided in this consultation record in April 2026. These measurements are indicative only and should be independently verified.

78 Objector-supplied satellite map screenshots provided in this consultation record in April 2026. These measurements are indicative only and should be independently verified.

identified in the public material reviewed for this chapter - the Board lacks the evidential basis to conclude that the residential receptors have been adequately assessed.

These homes lie in the direction indicated by the wind-rose evidence relied upon in the wider air-quality material. Whether that is ultimately correct can be precisely verified. The answer should not be left at assertion either way. The Board should require a verified receptor map showing all dwellings within at least 1 km, measured both from the red-line boundary and from the principal emission / fire source areas, overlaid with the meteorological data used in the applicant's air-quality assessment.

The following images are Google satellite map measurements used for the preliminary receptor-distance review summarised in the preliminary measurements set out above. They are included for evidential completeness only and should be independently verified by the applicant by reference to the red-line boundary and the principal hazard / emission points.

It should be further pointed out that some of these homes have private wells and are within the 2km limit for a karst area, which is the best geological practice impact pollution zone and are therefore further receptors in this context

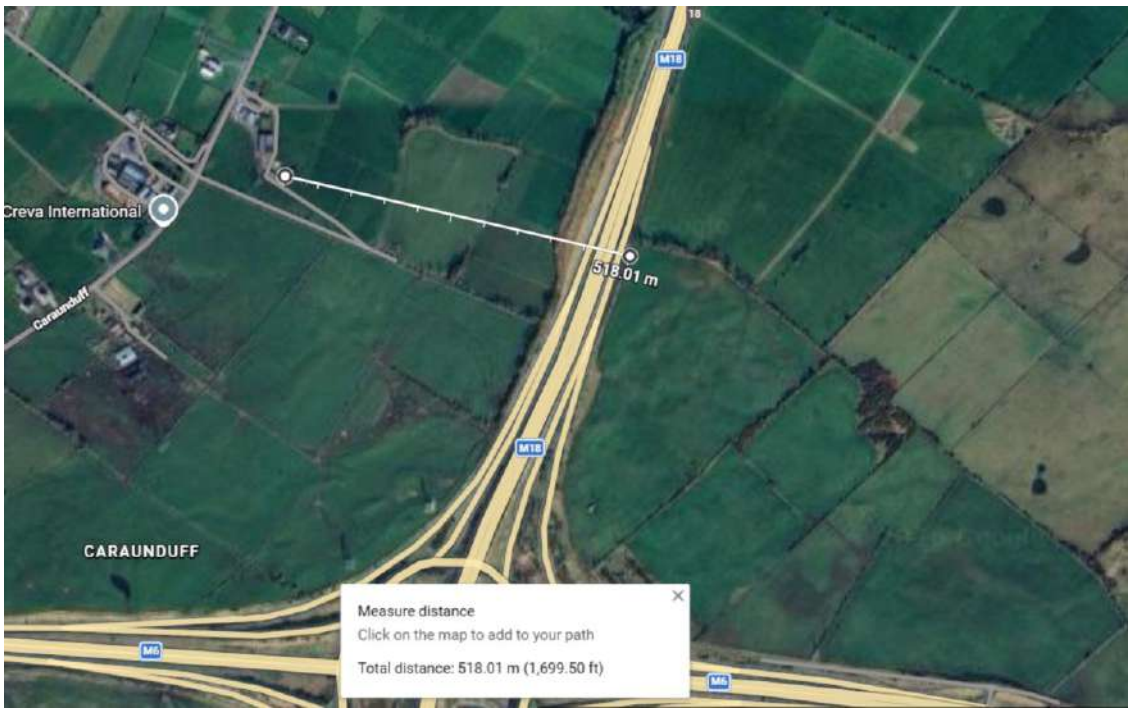

Figure 15.1 - Dwelling measurement showing approximately 518.01 m to site boundary.

Figure 15.2 - Dwelling measurement showing approximately 674.04 m to site boundary.

Figure 15.3 - Dwelling measurement showing approximately 592.50 m to site boundary.

Figure 15.4 - Dwelling measurement showing approximately 593.82 m to site boundary.

15.7 COMAH, motorway users and off-site consequences

The EIAR says that the proposed project will be a Lower-tier COMAH site.79 The HSA's land-use planning guidance explains that the Seveso regime requires controls on developments at qualifying establishments and in their vicinity, that the HSA advises the planning authority on developments within the consultation zone, and that the consultation distance is the distance around an establishment within which there are potentially significant consequences from major accidents to people or to the environment.80 The same HSA guidance states that, for some developments involving large numbers of people, societal risk may be the deciding factor.81

That issue is squarely engaged here. This is not merely a question of the nearest house. The site is located at a major motorway junction. The population potentially exposed to smoke, visibility impairment, emergency closures or knock-on traffic effects in a major incident is not limited to local residents. It includes road users and responders in the interchange environment. In those circumstances, the Board should require production of the HSA's technical land-use planning advice, including the consultation distance applied to this establishment and any analysis of societal risk.

The same is true of the environmental consequences of a fire. The EPA states that Industrial Emissions licences contain strict conditions on how an activity must operate so as to protect the environment from pollution, and that it is an offence to carry on a licensable activity without

79 An Coimisiún Pleanála, *Cashla Peaker Plant EIAR - Volume 1 Non-Technical Summary* (February 2026), p. 64.

80 Health and Safety Authority, "Land Use Planning" under COMAH / Seveso guidance.

81 Health and Safety Authority, "Land Use Planning" under COMAH / Seveso guidance.

the necessary licence.82 That reinforces, rather than weakens, the present objection. The more the applicant relies on subsequent EPA control of environmental risk, the more the Board should insist that the planning file clearly explains how the planning, COMAH and EPA regimes interlock in relation to firewater containment, smoke impacts and emergency procedures.

15.8 Relief sought from the Board

For all of the foregoing reasons, the Board should not determine the application in its present form. At a minimum, it should require the applicant to provide the following before any lawful and informed decision can be made:

1. a schedule identifying, for every principal element of the proposed development, whether it is treated as a building for Building Control / Part B / Fire Safety Certificate purposes, or as external process plant;

2. confirmation of what applications, certifications and compliance routes are proposed for each such element;

3. any fire authority advice furnished under section 13 of the Fire Services Act in relation to the application;

4. the fire detection and alarm philosophy for the site, including detector coverage, cause-and-effect logic, off-site monitoring arrangements, and the notification protocol from alarm to 999 / 112 mobilisation;

5. an emergency access and intervention strategy dealing with obstruction of the sole external access road, night-time intervention, turning and staging of appliances, and responder safety;

82 Environmental Protection Agency, “Industrial Emissions licensing” and industrial licensing guidance.

6. a verified residential receptor plan identifying all dwellings within at least 1 km, measured from both the red-line boundary and the principal hazard / emission points;

7. an assessment of accidental smoke-plume consequences for nearby dwellings and for the motorway corridor; and

8. The HSA's land-use planning advice, including the applicable consultation distance and any societal-risk analysis.

15.9 Conclusion

This objection is not based on a bare proposition that all parts of the proposed peaker plant must be treated as buildings, nor on a bare proposition that none of them are. The objection is that the public file does not clearly identify the applicable fire-safety route for each part of a Lower-tier COMAH energy installation; does not disclose the crucial fire-detection and escalation sequence for a largely automated site; relies in practice on a single external emergency approach; and has not adequately resolved the position of nearby residential receptors who may be affected by smoke in a major incident.

In those circumstances, the Board cannot presently be satisfied that the proposed development has been assessed to the level required by law or prudence. Permission should therefore be refused, or at the very least, no decision should be made unless and until the deficiencies identified in this chapter are remedied in full.

Chapter 16 – Karst Hydrogeology, Pollutant Pathways, Air Dispersion, and Protected Sites

16.1 Introduction and scope

This chapter applies the pollutant–pathway–receptor (PPR) / source–pathway–receptor framework to the Cashla Peaker Plant in light of the hydrogeological setting described in the EIAR and the mapping evidence supplied. The core issue is not simply whether pollutants are emitted, stored or contained on the site, but whether the EIAR has demonstrated, with sufficient site-specific evidence, that those pollutants cannot move through a highly karstified groundwater system to wells, springs, groundwater dependent ecosystems, or European sites.

The chapter focuses on five linked questions: (i) whether the hydrogeological baseline itself triggers a high-sensitivity karst assessment; (ii) whether nearby wells and abstractions have been treated as real receptors within a zone-of-contribution framework; (iii) whether the air chapter's wind rose, stack and deposition assessment has been properly cross-checked against the local karst receptor pattern; (iv) whether accidental release scenarios for the fin-fan cooling circuit chemicals and other stored substances have been assessed in a manner suitable for a conduit-karst aquifer; and (v) whether the EIAR has done enough to exclude impacts on SACs, SPAs and groundwater-dependent protected sites.

16.2 Documents and evidence reviewed

The principal project source is the Cashla Peaker Plant EIAR Volume 2 dated February 2026. The most important passages for this chapter are the hydrogeology, biodiversity, air quality, project description and major accidents chapters, together with the tables on groundwater abstractions, chemical storage, stack emissions, designated-site deposition and karst landforms.

Evidence item	What it shows	Source note

Hydrogeology baseline	Regionally Important Aquifer – Karstified (Rk) (conduit); rock at or near surface / karst vulnerability; moderate/high/extreme sectors along route	EIAR Vol. 2, pp. 570–571
Karst features near works	5 mapped karst features within 20 m of access road and 2 within 20 m of UGC route	EIAR Vol. 2, p. 535 and p. 536
Groundwater body behaviour	Rapid groundwater velocities, high interconnection, low attenuation, surface-water catchments bypassed by groundwater	EIAR Vol. 2, pp. 572–573
Wells / abstractions	Abstractions within site, crossing western border, along UGC route and 0.12 km east of route	EIAR Vol. 2, p. 575
Wind and stack	Predominant winds westerly to south-westerly; stack 30 m high and 7 m diameter	EIAR Vol. 2, pp. 374–375 and pp. 371–373
Protected sites	Hydrogeological pathway acknowledged to Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA	EIAR Vol. 2, p. 259
Chemical inventory	100 L water-system biocide and 100 L corrosion inhibitor for the closed-circuit cooling system; 1000 L biocide for low sulphur diesel storage	EIAR Vol. 2, pp. 89 and 680

The mapping screenshots supplied with instructions are also included in the appendix as exhibits. These are important because they visually show the local distribution of wells, karst/vulnerability mapping and the measured distances from the project-side area to nearby receptors/features.

16.3 Legal and technical framework

16.3.1 Environmental assessment and protected sites

Under the EIA Directive, projects likely to have significant environmental effects must be assessed before consent, and the assessment must identify, describe and assess the

direct and indirect effects on, among other things, soil, water, air, biodiversity and the risk of accidents. The Directive also requires attention to the sensitivity of the geographical area affected, including protected areas. (Directive 2011/92/EU, as amended by Directive 2014/52/EU).

For Natura 2000 sites, Article 6(3) of the Habitats Directive requires appropriate assessment for any plan or project likely to have a significant effect on a European site, alone or in combination, and consent may only be given after the competent authority has ascertained that the project will not adversely affect site integrity in view of the site's conservation objectives. The Irish Birds and Natural Habitats Regulations 2011 transpose this framework domestically.

These duties are especially relevant where a project lies in or over a groundwater system with acknowledged hydrogeological connectivity to protected sites, because the legal test is not whether a surface-water channel happens to be nearby, but whether a significant pathway exists in light of the conservation objectives and the actual receiving environment.

16.3.2 Water, groundwater and accident-control framework

The Water Framework Directive and the Groundwater Directive require Member States to prevent or limit pollutant inputs to groundwater, prevent deterioration, protect associated ecosystems and achieve compliance with standards and objectives for protected areas. In Ireland these obligations are given effect, in part, through the European Communities Environmental Objectives (Groundwater) Regulations 2010.

The EIAR also states that the project will be a lower-tier COMAH establishment. COMAH is relevant because it reinforces the need for major-accident prevention, inventory

control and assessment of serious consequences to human health and the environment. For this chapter, however, the critical point is that COMAH compliance does not displace the separate legal need to demonstrate no unacceptable pathway to groundwater, wells and protected sites.

16.3.3 Karst best practice under the pollutant–pathway–receptor model

Irish karst best practice is not based on simplistic fixed radii such as 2 km or 5 km as the final decision rule. Geological Survey Ireland defines the Zone of Contribution (ZOC) as the land area contributing water to the well or spring and explains that source protection relies on Source Protection Areas (SPAs), comprising an Inner Protection Area (SI) and Outer Protection Area (SO). The SI is based on 100-day travel time, and in karst, all karst limestone inside the ZOC is generally treated as SI because travel times are typically rapid.

That is important here. In a conduit karst aquifer, horizontal distance alone is an unreliable proxy for risk. The relevant questions are: where does recharge enter; what swallow holes, depressions, fissures, or conduits are present; how fast can contaminants travel; which wells, springs, and ecosystems sit downgradient; and what is the evidence for or against connectivity.

The EPA's groundwater guidance for direct discharges in karst similarly requires a comprehensive Tier 3 assessment, including karst study work, receptor identification, hydrometric monitoring, and dye tracing, for direct discharges to swallow holes or injection points.

16.4 What the EIAR itself says about the receiving environment

16.4.1 Aquifer type, vulnerability and karst sensitivity

The EIAR is clear that the project site is underlain by a Regionally Important Aquifer – Karstified (Rk) (conduit). It also states that groundwater vulnerability is predominantly "Rock at or near Surface or Karst" under the site, with sections of moderate, high, and extreme vulnerability along the access track and underground cable route. The biodiversity chapter describes the site vulnerability as a combination of "Extreme" and "Rock at or near surface or karst".

The water chapter goes further and records the defining traits of the Clarinbridge groundwater body: many karst features; rapid groundwater flow velocities established by tracing; high interconnection; surface-water catchments bypassed by groundwater; low groundwater storage; and limited contaminant attenuation. Those are classic indicators of a very fast pathway and a poor natural defence against contamination.

16.4.2 Mapped karst features and project-proximate anomalies

The land, soils and geology chapter identifies five mapped karst features within 20 m of the proposed access road and two within 20 m of the underground cable route. It also records eighteen geophysical anomalies interpreted as potential karst features, including some high-priority anomalies and possible air-filled or clay-filled voids. The EIAR, therefore, cannot be read as dealing with a generic rural site with ordinary subsoil attenuation; it is dealing with a specifically karstic site where subsurface discontinuity and rapid preferential flow are already acknowledged by the applicant's own material.

16.4.3 Wells, abstractions and groundwater-dependent receptors

The EIAR's own Table 12-7 lists groundwater abstractions within the study area, including one abstraction within the project site, two that cross the western border of the proposed

site, one along the UGC route, one 0.12 km east of the UGC route, and one crossed by the UGC route. The broader groundwater-body description also notes numerous yielding wells in the Athenry area. The biodiversity and water chapters further identify the GWDTE Galway Bay / Galway Bay Complex Fens groundwater body and rate groundwater/GWDTE/aquifer receptors as extremely high importance.

That combination of facts matters. Once the baseline includes: (a) a conduit karst aquifer, (b) rapid flow and low attenuation, (c) mapped nearby karst features, and (d) actual abstractions in or beside the works corridor, the objection point becomes straightforward: a generic statement that impacts are “imperceptible” with mitigation is not enough unless the receptor network has been properly delineated and the source–pathway–receptor links have been demonstrated, not assumed away.

16.5 Application of karst best practice to the Cashla EIAR

16.5.1 Why the zone-of-contribution issue is central

In karst, the question is not whether a well or swallow hole is 500 m, 700 m, 2 km or 5 km away in a straight line. The key question is whether that receptor sits in the zone of contribution, or in a hydraulically connected downgradient sector, from the proposed source area. GSI guidance is explicit that the ZOC and SI/SO framework is the correct source-protection method, and that karst limestone in the ZOC is generally treated as inner protection because travel times are rapid.

The GSI map images show a dense local cluster of wells and mapped groundwater points (karst features) around the Pollnagroagh / Caraunduff / Athenry area, together with measured distances in the order of approximately 518 m, 593 m and 674 m from local receptors/features to the project-side area. Those distances are not large in karst terms.

Indeed, EPA Advice Note No. 11 flags karst features in the ZOC or within 1 km of an abstraction point as a trigger for prior investigation in source-protection decisions. On that basis alone, the presence of project-proximate wells and karst features should have triggered a more explicit ZOC / source-protection analysis.

16.5.2 Why 'no surface water on site' does not close the pathway question

A recurring weakness in karst assessments is the tendency to over-focus on obvious surface-water channels. The EIAR notes that there are no surface waters on site and that the nearest relevant surface waters are kilometres away. But the same EIAR also says that karstic groundwater can bypass surface-water catchments, that sink points are common, and that groundwater discharge reaches springs, wetlands and coastal receiving waters. In other words, the absence of an on-site ditch or stream does not remove the pathway risk.

This is particularly important because the operational drainage concept includes infiltration to ground. The water chapter states that stormwater will pass through hydrocarbon interceptors before infiltration, and that SuDS include filter drains, sealed permeable paving and a soakaway pond. In a normal non-karst setting, infiltration SuDS may be unremarkable. In a conduit karst aquifer with rock at or near surface and known karst features near the works, infiltration is not a trivial design choice. It requires a demonstrated hydrogeological case that infiltration will not create pollutant transport to nearby abstractions or groundwater-dependent receptors.

16.5.3 Why the construction and operational conclusions appear over-confident

The EIAR's impact tables classify groundwater receptors as extremely high importance but still conclude that impacts are negligible / imperceptible with mitigation. That may be

the final conclusion the Board ultimately reaches, but on the present record it is too compressed. The same document records a conduit karst aquifer, rapid traced flow, low attenuation, nearby karst features, abstractions within and beside the corridor, a GWDTE receptor, and infiltration-based stormwater design. Those facts call for a more explicit chain-of-proof than is visible in Volume 2.

At minimum, a karst-specific objection is entitled to ask for: a private-well and spring survey; a delineated zone of contribution / source-protection assessment; a receptor map for all abstractions, springs, swallow holes, enclosed depressions and groundwater-dependent ecosystems in the downgradient sector; and, where the pathway remains uncertain, tracer-based or equivalent hydrogeological proof.

16.6 Wind rose, stack height and deposition: applying the earlier karst analysis

16.6.1 What the air chapter says

The air chapter uses Athenry meteorological data for 2020–2024 and states that the predominant wind direction is westerly to south-westerly. The same chapter states that the project will have one turbine stack 30 m above ground with a 7 m diameter, and that a conservative modelling assumption was used whereby the turbine was modelled continuously in natural-gas mode in order to represent a maximum-emissions scenario.

For designated ecological sites, the EIAR's modelling predicts process contributions below 1% of the relevant critical levels and loads for NOx, SO2, nitrogen deposition and acid deposition, and therefore concludes that routine operational air effects on the designated sites assessed are not significant.

16.6.2 The directional point that needs to be made clearly

My concern here is that the presentation of emissions may have the practical effect of downplaying eastern karst receptors, and there may be an attempt by the applicant to 'aim' pollution westward or to avoid eastern swallow holes. The Westerly deposition of the emissions requires explanation as one directional point is basic and important: if the prevailing wind is from the west to south-west, the ordinary dominant downwind sector is towards the east to north-east, not towards the west.

That means any nearby wells, swallow holes, enclosed depressions, or exposed karst sectors located east or north-east of the stack deserve particular attention in a PPR chapter, especially where atmospheric deposition could settle on thin-soil or rock-at-surface ground and then infiltrate rapidly. The EIAR's air chapter may still be right that routine stack emissions are low; but the objection is entitled to say that the dominant downwind sector should have been explicitly cross-referenced against the local karst receptor pattern shown on the supplied maps.

16.6.3 How far routine stack deposition can carry the objection

It is important to be balanced. On the face of the EIAR's own dispersion modelling, the case for significant routine stack-deposition effects on the modelled SACs and SPAs is weak. The closest modelled ecology receptor is Lough Corrib SAC at about 6.9 km, and the reported nitrogen and acid deposition process contributions at the assessed sites are very small. The stronger objection point is therefore not that the routine air model obviously proves European-site harm, but that the chapter structure may understate nearer non-designated groundwater receptors, particularly private wells and karst entry points, in the dominant downwind sector.

The town of Athenry is not considered a receptor from a wind emissions standpoint, it sits west of the proposed site.

Accordingly, the most defensible submission position is that the wind rose, stack geometry and deposition modelling should have been integrated with a receptor-specific karst map and private-well inventory, rather than being treated as a stand-alone air exercise focused mainly on distant designated habitats.

16.7 SACs, SPAs and groundwater-dependent protected sites

16.7.1 What the EIAR acknowledges

The biodiversity chapter identifies eleven European sites within the potential zone of influence and acknowledges a groundwater pathway from the project area to Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA via groundwater pathways. The land and geology chapter also records an ACP pre-application note that the site's karst limestone setting creates potential indirect connectivity with Inner Galway Bay SPA and Galway Bay Complex SAC.

The water chapter goes further again by identifying the GWDTE Galway Bay / Galway Bay Complex Fens groundwater body as lying within the site boundary and assigning it extremely high importance. That is a serious receptor. It means the objection is not confined to distant coastal designations; the project is already overlying a groundwater-dependent protected waterbody.

16.7.2 Are the SACs/SPAs 'far enough away'?

For routine stack emissions assessed as air pollutants, the EIAR's own numerical results suggest that the statutory European sites assessed are probably far enough away to avoid significant routine deposition impacts, at least on the data presented. For groundwater

pathways and accident pathways, however, ‘far enough away’ is the wrong test in karst. The correct test is hydraulic connectivity, travel time, attenuation capacity, and receptor sensitivity.

In a conduit karst aquifer, seven to nine kilometres to a protected site is not automatically protective where the same chapter records rapid traced groundwater flow, sink points, low attenuation and regional interconnection. The EIAR may ultimately be able to exclude adverse effects on site integrity, but the objection can properly say that the exclusion should rest on a transparent hydrogeological demonstration rather than on horizontal distance alone.

16.7.3 Objection point on Natura 2000

Based on Chapter 16 the objection point is this: because the applicant’s own baseline identifies karst conduit flow, acknowledged groundwater pathways to European sites, a groundwater-dependent protected receptor within the site boundary, and extremely high receptor importance, the Board should require a clearer, receptor-specific demonstration that no deterioration and no adverse effect on integrity can arise from both routine operation and credible accidental releases.

16.8 Fin-fan cooler chemicals, biocide / inhibitor inventory, and accidental-release assessment

16.8.1 What Volume 2 actually verifies

Volume 2 confirms that the closed cooling water circuit serving the fin-fan cooler contains demineralised water with biocide and anti-corrosion inhibitors e.g. Glycol. It also provides a chemical inventory in Table 2-1 and Table 15-6. Those tables list: 100 litres of water-system biocide for the closed-circuit cooling system; 100 litres of

corrosion inhibitor for the closed-circuit cooling system; 1 no. IBC (1000 litres) of weak sulphuric acid; and, separately, 1000 litres of biocide for low sulphur diesel storage.

The type of coolant to be used in the Fin-Fan cooling system has not been stated and should be given the type of hydrological conditions we are dealing with, same can be stated for the biocides which are listed and controlled substances. The EIAR appears to list closed-circuit cooling-system additives at 200 litres.

16.8.2 Why the accidental-release issue still remains serious

The real issue is that any loss of closed-circuit cooling water containing biocide and inhibitor, or any comparable chemical spill, would occur in an Rk conduit karst aquifer setting with limited attenuation and actual nearby abstractions. In that setting, bunding and general statements of good practice are necessary but not sufficient to answer the pathway question.

The EIAR relies heavily on containment measures: sealed chemical storage, double-bunded or bunded tanks, dedicated firewater containment, tanker removal of contaminated liquids and spill response. Those are positive design features. However, in a karst setting the objection can fairly ask what happens if a release reaches cracked ground, shallow rock, a karst feature, a drainage break, or an infiltration component before interception. The EIAR does not appear, in Volume 2, to provide a quantified karst-specific accidental-release pathway model for those scenarios.

16.8.3 Assessing a release scenario

The EIAR has not adequately demonstrated that an accidental release of fin-fan cooling water/biocide/corrosion inhibitor, or other liquid contaminants stored on site, cannot migrate through the mapped karst conduit aquifer to nearby private wells, abstractions,

groundwater-dependent receptors, or downstream European sites. In this hydrogeological setting, reliance on distance and generic containment measures is not sufficient without a delineated zone-of-contribution assessment and, where required, tracer-informed proof of pathway absence.

16.9 Specific issues and inconsistencies that should be put to the decision-maker

- The EIAR accepts a conduit karst aquifer, rapid groundwater velocities and limited attenuation, yet still relies on infiltration-based SuDS without an explicit zone-of-contribution / source-protection demonstration for nearby wells and downgradient receptors.
- The EIAR identifies karst features within 20 m of project elements and eighteen potential karst anomalies, but Volume 2 does not set out a completed receptor-based karst hydrogeological assessment equivalent to the sensitivity of that baseline.
- Groundwater receptors are rated as extremely high importance, including a groundwater-dependent protected receptor, yet the operational conclusion remains “imperceptible” without the sort of site-specific hydrogeological evidence normally expected in a conduit karst setting.
- The biodiversity chapter accepts a groundwater pathway to Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA, while the air chapter separately concludes routine atmospheric effects are not significant. The combined effect of local deposition plus rapid karst infiltration to nearer non-designated receptors does not appear to be expressly addressed.

- The air chapter states the dominant wind is westerly to south-westerly. As a matter of ordinary plume direction, that means the principal downwind sector is east to north-east. The objection can therefore ask whether all relevant wells, swallow holes and karst features in that sector were explicitly screened and discussed.

- Volume 2 confirms that closed-circuit cooling-system biocide and corrosion inhibitors will be held and used on site. None of these substances are named. If the applicant relies on a different inventory elsewhere, it should be produced and assessed transparently.

16.10 Further information and conditions that should be sought

1. A full private-well, spring and abstraction survey for the site, access road, UGC route and downgradient karst sector, with ownership, use, depth, yield and vulnerability recorded.

2. Delineation of the relevant zone(s) of contribution and source protection areas / zones for nearby abstractions and karst-linked receptors, not just a fixed-radius desk study.

3. A karst hydrogeological technical note explaining whether infiltration SuDS are appropriate on this site and, if so, the evidence base for that conclusion.

4. A specific accidental-release assessment for closed-circuit cooling water, biocide, corrosion inhibitor, sulphuric acid, and other stored liquids, including the route by which each could reach groundwater, wells, GWDTEs, and downstream protected sites.

5. Verification of the full fin-fan cooling circuit inventory and chemical composition, including the actual maximum volume of cooling water and additive concentrations, rather than only the additive stock volumes.

6. A map-based cross-check between the dominant downwind sector from the stack and the location of nearby wells, swallow holes, enclosed depressions and exposed-karst sectors.

7. Where hydraulic connectivity remains uncertain, tracer testing or an equivalent karst investigation proportionate to the site sensitivity.

8. A clearer WFD / Groundwater Directive no-deterioration statement dealing expressly with private wells, the GWDTE Galway Bay receptor and groundwater-linked European sites.

16.11 Overall conclusion

On the applicant's own baseline, this is a highly sensitive karst groundwater setting: a regionally important conduit aquifer, rock-at-surface / karst vulnerability, mapped karst features within 20 m of project elements, nearby abstractions, rapid groundwater flow, low attenuation and an acknowledged pathway to protected groundwater-dependent receptors. In that context, the decisive question is not whether the project contains mitigation measures in principle; it is whether the EIAR has demonstrated, with receptor-specific hydrogeological evidence, that the pollutant pathways to wells, GWDTEs and European sites have been properly closed.

The routine air model suggests that distant statutory European sites are unlikely to experience significant stack-deposition effects. But that is not the end of the matter. The stronger objection point is that the chapter structure does not yet appear to integrate the

wind rose, local receptor pattern, karst pathway behaviour, infiltration design and accidental-release scenarios into one coherent pollutant–pathway–receptor assessment. For a conduit karst aquifer, that omission is material.

Accordingly, the objection should press for a completed karst-specific zone-of-contribution / source-protection analysis, a verified chemical inventory for the closed cooling system, and a transparent receptor-led assessment of both routine and accidental pathways before any consent is granted.

16.12 References and source notes

Cashla Peaker Plant EIAR, Volume 2 – Main EIAR, February 2026. Key pages used in this chapter include pp. 89, 138, 149, 255, 258–259, 371–375, 396–399, 535–536, 570–575, 581, 583–589 and 679–680.

Geological Survey Ireland. Groundwater source protection terminology. Official guidance on ZOC, SPAs, SI and SO. Available at gsi.ie.

Geological Survey Ireland. Karst databases. Official note stating that the SI is based on 100-day travel time and that all karst limestone in the ZOC is generally classed as SI because travel times are usually rapid. Available at gsi.ie.

Geological Survey Ireland. Groundwater vulnerability and pathways / assessing groundwater vulnerability. Official guidance explaining vulnerability, pathways and risk management in Irish groundwater protection. Available at gsi.ie.

Environmental Protection Agency. Advice Note No. 7: Source Protection and Catchment Management to Protect Groundwater Sources. Official guidance on groundwater protection plans, zones of contribution, source protection zones and setback distances.

Environmental Protection Agency. Advice Note No. 11: Technical Assessments and Prior Investigations. Official guidance flagging karst features in the ZOC or within 1 km of an abstraction point as a prior-investigation trigger in relevant source-protection contexts.

Environmental Protection Agency. Guidance on the Authorisation of Direct Discharges to Groundwater (2014). Official guidance requiring Tier 3 hydrogeological assessment, including karst study work and dye tracing, for direct discharges to swallow holes or injection wells in karstified aquifers.

Directive 2011/92/EU on environmental impact assessment, as amended by Directive 2014/52/EU.

Council Directive 92/43/EEC (Habitats Directive), especially Article 6.

Directive 2009/147/EC (Birds Directive).

Directive 2000/60/EC (Water Framework Directive).

Directive 2006/118/EC (Groundwater Directive).

S.I. No. 9 of 2010 – European Communities Environmental Objectives (Groundwater) Regulations 2010.

S.I. No. 477 of 2011 – European Communities (Birds and Natural Habitats) Regulations 2011.

S.I. No. 209 of 2015 – Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015.

Appendix 16A – Mapping and screenshot exhibits

The following figures reproduce the screenshots supplied for use as evidence. They are included here as exhibits and should be read together with the text of Chapter 16.

Figure 16A-1. Google Maps aerial view of the Pollnagroagh / M17-M18 / Ballygarraun North area supplied with instructions.

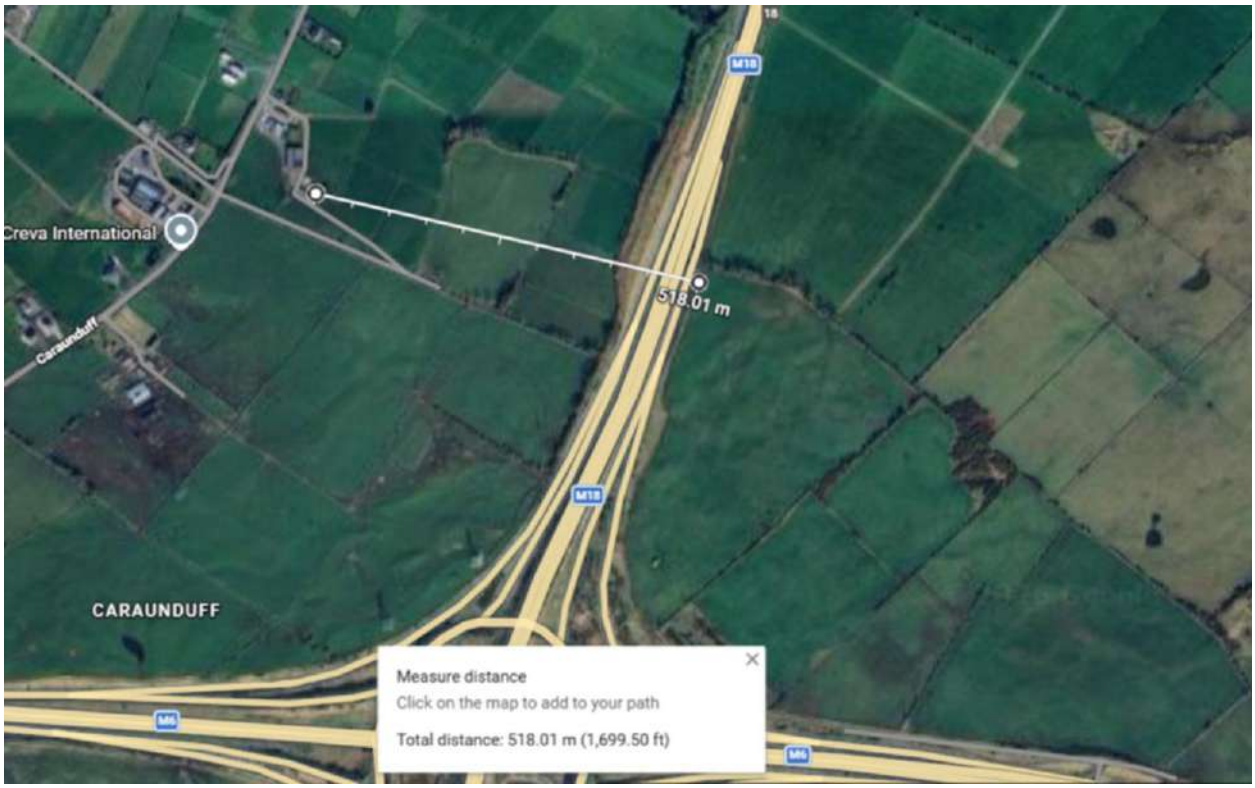

Figure 16A-2. Google Maps distance measurement exhibit supplied with instructions (518.01 m).

Figure 16A-3. Google Maps distance measurement exhibit supplied with instructions (674.04 m).

Figure 16A-4. Google Maps distance measurement exhibit supplied with instructions (592.50 m).

Figure 16A-5. Repeat Google Maps distance measurement exhibit supplied with instructions (592.50 m duplicate view).

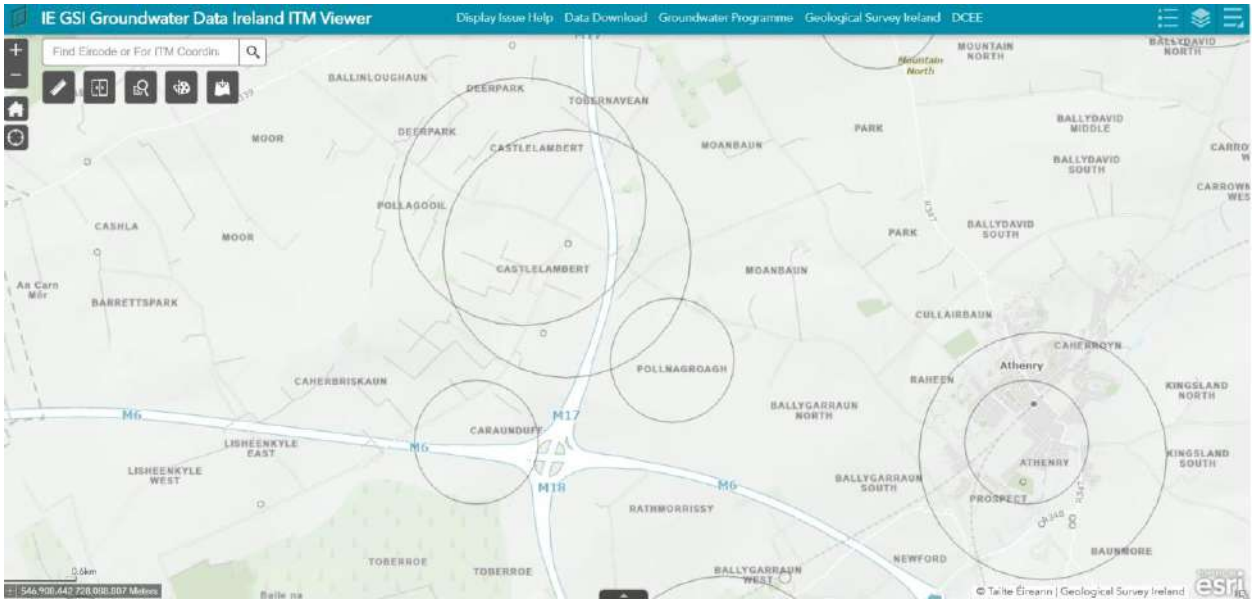

Figure 16A-6. GSI ITM Viewer screenshot showing mapped circular receptor areas supplied with instructions.

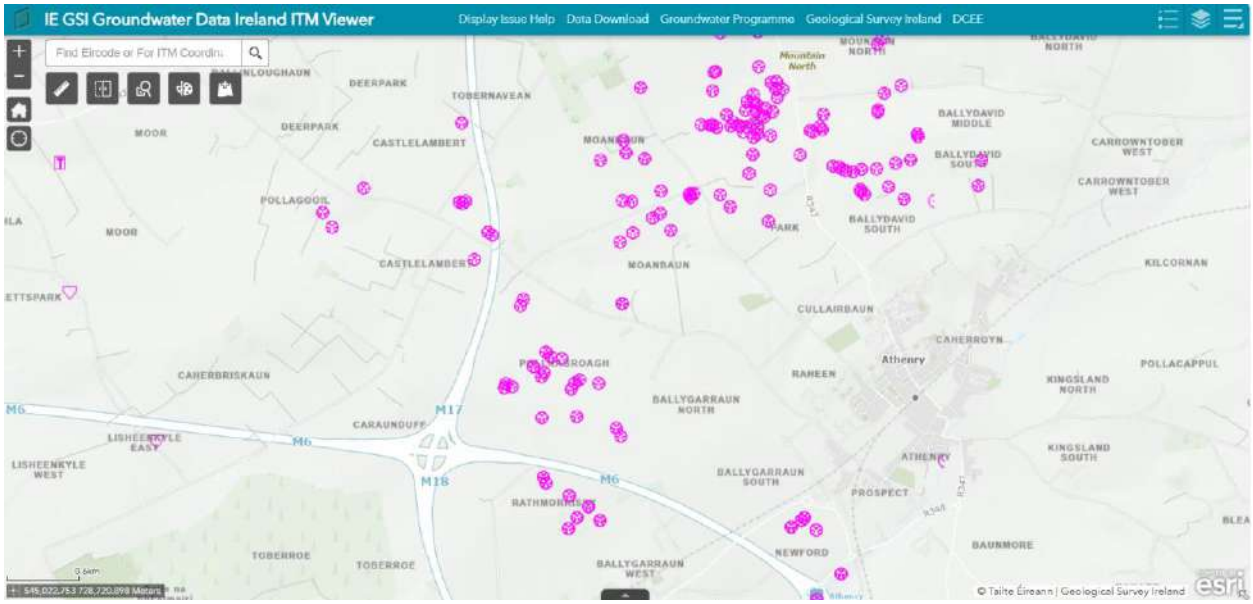

Figure 16A-7. GSI ITM Viewer screenshot showing nearby groundwater points/wells supplied with instructions.

Figure 16A-8. GSI ITM Viewer screenshot showing groundwater vulnerability category 'Rock at or near Surface or Karst' supplied with instructions.

Appendix 16B – Selected EIAR figure and table extracts

The following pages are reproduced from the uploaded EIAR as visual evidence supporting the analysis in Chapter 16.

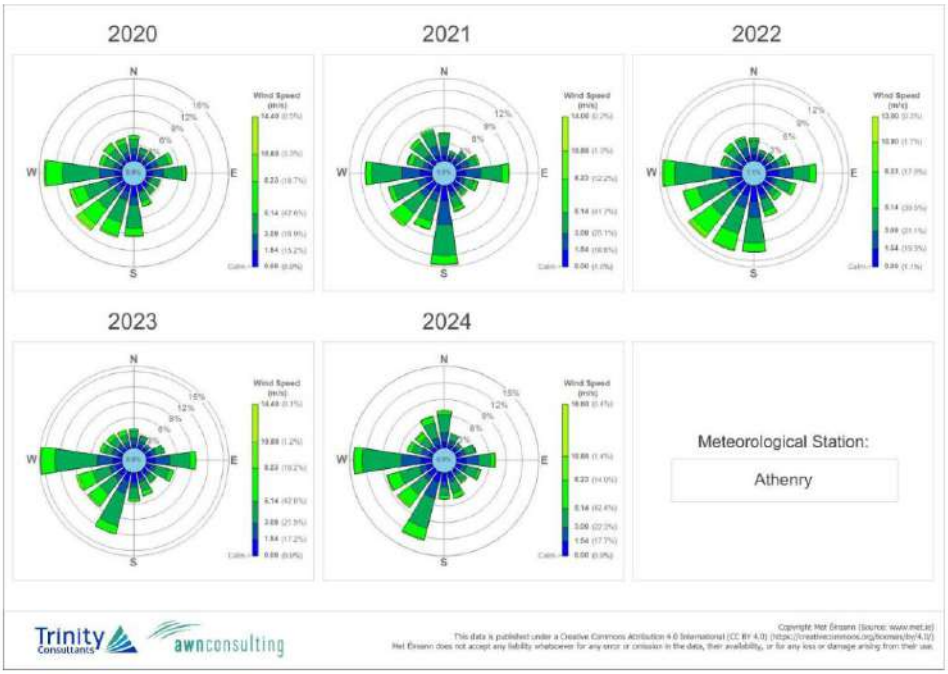

Figure 7-2 – Wind Roses for Athenry Meteorological Station

7.3.2 Baseline Air Quality

Air quality monitoring programs have been undertaken in recent years by the EPA. The most recent annual report on air quality in Ireland is "*Air Quality in Ireland 2024*" (EPA, 2025). The EPA website details the range and scope of monitoring undertaken throughout Ireland and provides both monitoring data and the results of previous air quality assessments.

As part of the implementation of the Air Quality Standards Regulations 2022 (S.I. No. 739 of 2022) four air quality zones have been defined in Ireland for air quality management and assessment purposes (EPA, 2025). Dublin is defined as Zone A and Cork as Zone B. Zone C is composed of 23 towns with a population of greater than 15,000. The remainder of the country, which represents rural Ireland but also includes all towns with a population of less than 15,000, is defined as Zone D.

A background concentration is added to the modelled process contribution to account for emission sources not included in the dispersion model. The background concentration accounts for all emission sources in the vicinity of the Proposed Project (e.g. natural sources, industry, traffic, home heating etc.). The long-term monitoring data available from the EPA (EPA, 2025) has been used to determine background concentrations for the key pollutants in the region of the Proposed Project.

In terms of air monitoring and assessment, the Proposed Project site is within Zone D (EPA, 2025) and this has been taken into account when estimating the background concentrations in the area. The Proposed Project site is located in a rural area and is predominantly surrounded by agricultural land. Rural background monitoring

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Figure 16B-1. EIAR p. 375 – Wind Roses for Athenry Meteorological Station.

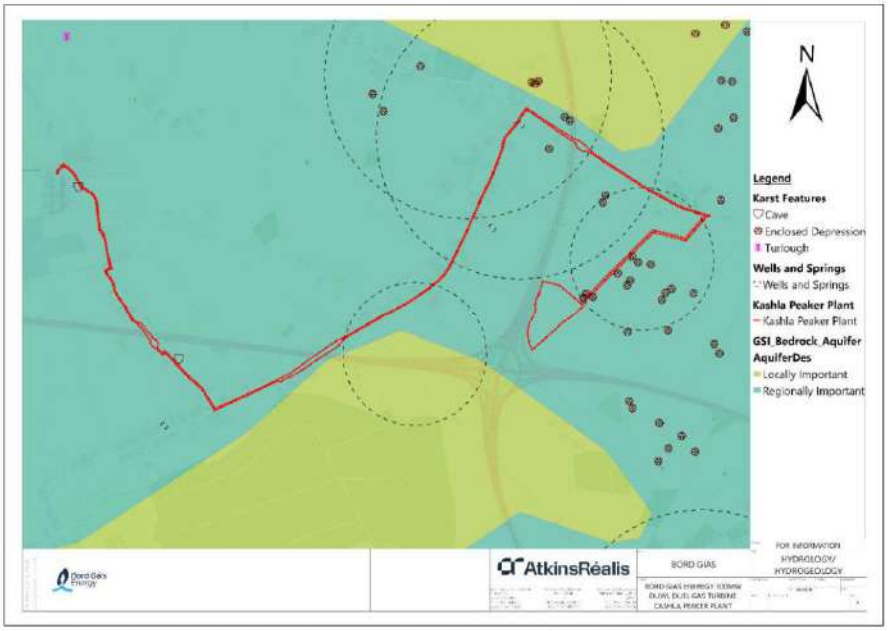

Figure 11-15 – Map showing Karst features and aquifers underlying the Proposed Project (GSI, 2025)

As previously discussed, given the regional karst site setting, a geophysical survey and geotechnical investigation was conducted (Refer to Appendix 11-1, Volume 3 of the EIAR), and the results are discussed as follows.

The Terra Survey Geophysical Report (Terra Survey, 2025) identified 18no. anomalies, which were interpreted as potential karst features. A risk rating was assigned based on the likelihood of encountering karst features, and subsequent potential engineering and structural issues. It should be noted that the proposed design, from concept through to design as clearly demonstrated in Section 11.4.2, has been developed to ensure that any potential risk of contamination to the receiving land soils and geology environmental, and water (groundwater) environment is negligible.

High resistivity indicates greater risk of encountering voids or cavities, while low resistivity indicates high risk of encountering presence of infill materials, such as clay or water-saturated sediments. The details of anomalies encountered are summarised below in Table 11-9. Refer also to Appendix 11-1, Volume 3 of the EIAR for a copy of the full report and all supporting drawings / cross sections.

Table 11-9 - Anomalies underlying the Proposed Project (Terra Survey, 2025)

Name	Easting	Northing	Depth (m BGL)	Priority*	Description
A1	547302.3	728710.6	20	High	Interpreted as high risk due to high amplitude of low resistivity

Figure 16B-2. EIAR p. 536 – Map showing karst features and aquifers underlying the proposed project.

Table 5-7 - European Sites in proximity to the Proposed Project

European Site (Site Code)	Linear Distance & Direction from Proposed Project
Lough Corrib SAC (000297)	6.95 km NW
Galway Bay Complex SAC (000268)	7.04 km SW
Rahasane Turlough SAC (000322)	7.72 km S
Monivea Bog SAC (002352)	9.42 km NE
Castletaylor Complex SAC (000242)	11.66 km S
Lough Fingall Complex SAC (000606)	12.34 km S
Kiltiernan Turlough SAC (001285)	13.35 km S
Ardrahan Grassland SAC (002244)	13.90 km S
Rahasane Turlough SPA (004089)	7.72 km S
Cregganna Marsh SPA (004142)	8.69 km SW
Inner Galway Bay SPA (004031)	9.11 km SW

The nearest European Site (Lough Corrib SAC; IE000297) is almost 7km from the Proposed Project, which is such a distance that no viable pathway exists between the two via either land or air. This rationale can be extended to all European Sites further afield by proxy, and such no land/air pathway exists between the Proposed Project and any European Sites.

The nearest surface water body (Carrowmoneash River) in the same sub-catchment as the Proposed Project is 6.34km away, a distance at which surface water runoff is unlikely to travel. As such there exists no hydrological pathway between the Proposed Project and any European Sites via surface water hydrological connectivity.

Groundwater, which may become exposed during construction and/or excavation works, may move in a southwestern direction, ultimately draining into the overlying surface waters mentioned above and into Galway Bay (via Oranmore Bay and Dunbulcaun Bay). Some sections of the Site are classified as having groundwater that is 'extremely vulnerable' to contamination upon exposure (GSI, 2025). As such, a hydrogeological pathway exists between the Proposed Project and European Sites downstream via groundwater pathways. These European Sites are Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA (Figure 5-5).

The accompanying Appropriate Assessment (AA) and Natura Impact Statement (NIS) (AtkinsRéalis, 2026) detail mitigation to ensure that no impacts on Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA will occur as a result of the Proposed Project.

Figure 16B-3. EIAR p. 259 – Table of European sites in proximity and text acknowledging a groundwater pathway to Galway Bay Complex SAC, Cregganna Marsh SPA and Inner Galway Bay SPA.

Table 12-7 - GSI Groundwater Abstractions Within Study Area (GSI, 2025)

Abstraction ID	Abstraction Type	Location Accuracy (m)	Approximate Location (relative to the Site)	Depth (m)	Yield (m^3/day)	Use
1421SWW019	Borehole	1000	Within the project site	31.1	21.8	Agricultural & Domestic
1421NWW017	Borehole	2000	Crosses the western border of the proposed site	76.2	N/A	Agricultural & Domestic
1421NWW020	Unknown	2000	Crosses the western border of the proposed site	78.1	545.50	Agricultural & Domestic
1421NWW016	Borehole	50	Located along the UGC cable route	79.3	545.00	Agricultural & Domestic
1421NWW037	Borehole	50	0.12km east of underground cable route	87.5	218.20	Group Scheme
1421NWW026	Borehole	1000	Crossed by underground cable route	42.7	N/A	Agricultural & Domestic

12.3.5 Public Water Supply & Reservoirs

Uisce Eireann have requested to consider:

"Any and all potential impacts on the nearby reservoir as public water supply water source(s) are assessed, including any impact on hydrogeology and any groundwater/ surface water interactions.

The closest public reservoir is Ballydavid which is over 4km in a direct line from the Proposed Development. A public water supply such as this is assigned a very high importance, though the large distance from the site and the projects general lack of interaction with groundwater means that the risk to this receptor is negligible and thus has not been considered further. Additionally, reservoirs are typically hydraulically disconnected from the local groundwater regime thus it is considered extremely unlikely that changes to groundwater quality and flow would have the potential to impact the reservoirs.

12.3.6 Groundwater Quality

The European Communities Environmental Objectives (Groundwater) Regulations, (S.I. 9 of 2010) came into effect on 27th January 2010. The aim of the Regulations is to achieve the environmental objectives established for groundwater by Article 4 (1) (b) of the Water Framework Directive (2000/60/EC), as amended. The 2010 Regulations, as amended, set down groundwater quality standards for nitrate (50mg/L) and active substances in pesticides in Schedule 4 and also established threshold values for pollutants or indicators of pollutants in Schedule 5. Under these regulations the EPA must assign a status of '*Good*' or '*Poor*' to those bodies of groundwater where available data and knowledge allows.

The Proposed Project is within two ground waterbodies including: Clarinbridge (European Code: IE_WE_G_0008) which is classified as 'Good' and is 'Not at risk' of failing to achieve good WFD status by 2027

Figure 16B-4. EIAR p. 575 – Table 12-7 GSI groundwater abstractions within the study area.

Appendix 1

Example of an occupational noise assessment carried out to correct standards.

To include correct instrument standards IEC 61672

Assessment carried out at Whitegate Power Station (BGE) 12/02/2025

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Whitegate Power Station

Whitegate, Co. Cork

OCCUPATIONAL NOISE ASSESSMENT

12 February 2025

Report Author: Conor Brady

Report: DC2533-02

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APPENDICES

Appendix A - $L_{EX,8h}$ Noise Map
Appendix B - L_{Aeq} Noise Map
Appendix C - Calculated Exposure Level Table

Appendix D - Calibration Certification

Appendix E - Glossary of Noise Terminology

Introduction

Allegro Acoustics was retained by GE Energy Ireland to carry out an occupational noise assessment for Whitegate Power Station and its associated facilities in Whitegate, Co. Cork. This assessment includes areas on the floor where elevated noise levels are to be expected due to normal operations. This assessment was carried out relative to the Control of Noise at Work regulations [1]. The noise measurements were undertaken on the 21st of January 2025.

Scope of Works

The scope of works for this assessment includes an evaluation of exposure to occupational noise to operators and staff working at the Whitegate Power Station in Whitegate, Co. Cork.
This involves the determination of the $L_{EX,8h}$ and p_{peak} values which are subsequently compared in this report to the action and limit values as outlined in the Control of Noise at Work regulations [1]. This report also details a review and recommendations for hearing protection used in the Whitegate Power Station in addition to the provision of contoured noise maps showing variations in $L_{EX,8h}$ and L_{Aeq} noise levels throughout the facility.

Assessment Methodology

Noise Measurement and Analysis

Noise measurements were taken across the power station at 51 locations. Noise measurements were taken to determine the following two indicators of occupational noise exposure:

- $L_{EX,8h}$ – Daily noise exposure level; this is the time weighted average of the noise exposure level for a nominal eight hour working day. This is the cumulative noise level for all noise exposure at a work location over the course of the working day.
- P_{peak} – Maximum value of the C frequency weighted instantaneous noise pressure which represents loud “bangs” and impact sounds.

The $L_{EX,8h}$ and p_{peak} values were determined by measuring the L_{Aeq} and L_{Cpeak} values at each of the 51 locations. The L_{Aeq} and L_{Cpeak} values can be used directly to determine the $L_{EX,8h}$ and p_{peak} values. A description of the noise environment for

each measurement is given in Table 4 below. Noise measurement data for all measurements is presented in Appendix C.

Survey Instrumentation

Noise measurements were made using a Cirrus CR:171B Sound Level Meter. This sound level meter measures simultaneously in every 1/3rd octave frequency band from 12.5Hz to 20kHz. The sound level meter was calibrated before and after the noise monitoring survey was carried out using a Cirrus CR:515 acoustic calibrator. The sound level meter is a Class 1 instrument in accordance with IEC 61672 regulations. The Time Weighting used was Fast and the Frequency Weighting was A-weighted as per IEC 61672. Calibration certification for the sound level meter is displayed in Appendix D of this report.

Survey Methodology

For all noise measurements, the sound level meter was mounted on a tripod at a height of 1.6m to represent the head height of the operator at each location. The sound level meter was oriented towards the dominant audible noise source at each measurement location.

The primary measurement parameter at each measurement location was the equivalent continuous A-Weighted Sound Pressure Level, $L_{Aeq,T}$ over 30 second to 10 minute measurement intervals. The duration of each measurement was chosen based on the state of steadiness of audible noise at each location. The sound pressure level was also measured over this duration at each 1/3rd octave frequency band from 12.5Hz to 20kHz. In addition, the L_{Cpeak} and a range of statistical indicators to include the L_{A10}, L_{A50}, L_{A90} and L_{A99} were measured at each location. A summary of all noise measurement data is presented in Appendix C.

Exposure Times

The shift times for operatives working at Whitegate Power Station are given in Table 1 below.
The shift times are used to calculate the occupational noise exposure levels in Section 4 below.

Exposure Times		
Work Area	Shift	Lunch / Breaks
General Work Area	12 hours	1 hour

Table 1: Shift times for operatives at Whitegate Power Station.

Note that Whitegate Power Station have advised Allegro Acoustics that the total time typically spent by employees at any given location throughout the power station is 4 hours.

Unless otherwise stated, it is assumed by Allegro Acoustics that while the operative is at lunch or away from elevated noise areas, they are exposed to a base noise level of 70dB L_{Aeq}.

Noise Mapping

Noise maps were developed for high noise areas within the facility using NoiseAtWork noise mapping software by dGmR. Noise mapping provides a visual representation of the $L_{EX,8h}$ and L_{Aeq} noise levels throughout the facility. The mapped noise levels in Appendix A show the calculated $L_{EX,8h}$ at each location and the mapped noise levels in Appendix B show the measured L_{Aeq} at each location.

For the purpose of developing noise maps, a worst case scenario is assumed where the operator spends a full shift (excluding lunch break) within one of the high noise areas. This assumption addresses and empowers enforcement for wearing hearing protection in high noise areas, it ensures that:

- If operators/maintenance technicians spend the full working day at any one location, the recommendation to wear hearing protection as outlined in Section 5 is appropriate.
- If operators/maintenance technicians spend the full working day at a number of locations and collectively experience exposure to elevated noise levels throughout the shift, the recommendation to wear hearing protection as outlined in Section 5 is appropriate.

Analysis of Noise Levels relative to the Control of Noise at Work Regulations

The $L_{EX,8h}$ values across the floor have been calculated and mapped to allow comparison with the Control of Noise at Work regulations [1]:

- Safety, Health and Welfare at Work Regulations 2007 – Chapter 1 of Part 5 S.I. No. 299 of 2007 [1]

The above regulations state the following:

For the purposes of this Chapter, the exposure limit values and exposure action values in respect of the daily noise exposure levels and peak sound pressure are as follows:

(a) Exposure limit values –
$L_{EX,8h}$ = 87dB(A) and p_{peak} = 140dB(C) in relation to 20µPa

(b) Upper exposure action values –
$L_{EX,8h}$ = 85dB(A) and p_{peak} = 137dB(C) in relation to 20µPa

(c) Lower exposure action values –
$L_{EX,8h}$ = 80dB(A) and p_{peak} = 135dB(C) in relation to 20µPa

The p_{peak} C weighted lower exposure action value (135dB(C) in relation to 20µPa) was not exceeded at any location throughout the facility and therefore this analysis

will focus only on the $L_{EX,8h}$ relative to the above action and limit values. The highest L_{Cpeak} value was measured to be 121.4dBC which is below the lower action value limit of 135dBC.

It is recommended by Allegro Acoustics to review the HSA document Guide to the Safety, Health and Welfare at Work Regulations 2007 [2] to conclude necessary actions by Whitegate Power Station regarding noise exposure to employees throughout the facility where exposure to noise is in excess of the lower action value, upper action value and exposure limit.

Actions required relative to the noise exposure to employees in each area using guidance set out in the Control of Noise at Work regulations [1] and the HSA guidance document [2] are outlined in the Table 2 below.

Occupational Noise Limits			
Exposure Level	$L_{EX,8h}$	p_{peak}	Requirements
Lower Action Value	80dBA	135dBC	1. Carry out a risk assessment. 2. Provide occupational noise exposure information to employees. 3. Provide training and supply hearing protection to employees that request them. Hearing protection recommended but not enforced. 4. Keep Records.
Upper Action Value	85dBA	137dBC	As Above Plus: 1. Reduce levels of exposure other than by hearing protection. 2. Identify ear protection zones & label. 3. Hearing protection must be worn and enforced in these zones (Signage). 4. Regular assessments made. 5. Records kept and amended. 6. Audiometric screening is a requirement for all exposed staff.
Exposure Limit Value	87dBA	140dBC	Staff exposure should not exceed the limit of 87dB at the ear, taking into account the protection offered by the wearing of hearing protection.

Table 2: Actions as advised by the HSA where the noise exposure action values and limit values are breached.

Results

Noise Exposure Levels

Noise measurements taken across the Whitegate Power Station were used to calculate the $L_{EX,8h}$ at each measurement location. The calculated $L_{EX,8h}$ and measured L_{Aeq} values are presented in Table 4 below. Measurement locations can be viewed on the Noise Map in Figure 1 below.

The length of time allowable at each location prior to exceeding the action and limit values is also given in Table 4 below. This enables the EHS planning function of assessing the potential noise exposure for individual personnel if working at any particular location for a known period of time.

Orange	Lower Exposure Action Value	80-85dBA

Red	Upper Exposure Action Value	85-87dBA
Purple	Exposure Limit Value	>87dBA

Table 3: Colour system used in results table below.

Occupational Noise Calculations								
Meas No.	Location	Description of Noise Environment	Exposure			Time to Exceed Exposure Levels (Hrs)		
			Time (Hrs)	dB L_{Aeq}	dB $L_{EX,8h}$ Total	80dB $L_{EX,8h}$	85dB $L_{EX,8h}$	87dB $L_{EX,8h}$
Meas001	Exit Door	Turbine Noise	4	85.9	83.1	2.1	6.5	10.3
Meas002	Under Turbine	Turbine Noise	4	86.8	84.0	1.7	5.3	8.4
Meas003	Condensate Extraction Pumps	Pump noise + Turbine Noise	4	87.4	84.5	1.5	4.6	7.3
Meas004	Condensate extraction pumps	Pump noise + Turbine Noise	4	92.9	89.9	0.4	1.3	2.1
Meas005	Bund	Pump noise + Turbine Noise	4	88.5	85.6	1.1	3.6	5.7
Meas006	Extractor	High noise from extractor	4	104.8	101.8	0.0	0.1	0.1
Meas007	Emergency shower area	Turbine Noise	4	91.2	88.3	0.6	1.9	3.0
Meas008	Sulzer cooler	Noise from Pipework and Turbine.	4	91.7	88.7	0.5	1.7	2.7
Meas009	Lectrodryer BAC-50	Noise from Pipework and Turbine.	4	90.5	87.6	0.7	2.3	3.6
Meas010	Air Compressor No.2	Noise from Pipework and Turbine.	4	90.1	87.2	0.8	2.5	3.9
Meas011	Compressed air receiver	Noise from Pipework and Turbine.	4	84.5	81.8	2.8	9.0	14.2
Meas012	Exit Door	Noise from Pipework and Turbine.	4	88.6	85.7	1.1	3.5	5.5
Meas013	See noise map	Noise from pumps and ductwork	4	91.1	88.2	0.6	2.0	3.1
Meas014	10LAC51AP001	Noise from nearby ductwork	4	86.4	83.6	1.8	5.8	9.2
Meas015	Sample Test Area	Noise from nearby ductwork	4	86.4	83.6	1.8	5.8	9.2
Meas016	Degasser controller	Noise from nearby Pipework	4	87.6	84.7	1.4	4.4	7.0

Occupational Noise Calculations								
Meas No.	Location	Description of Noise Environment	Exposure			Time to Exceed Exposure Levels (Hrs)		
			Time (Hrs)	dB L_{Aeq}	dB $L_{EX,8h}$ Total	80dB $L_{EX,8h}$	85dB $L_{EX,8h}$	87dB $L_{EX,8h}$
Meas017	Ductwork	Noise from nearby Pipework	4	82.7	80.1	4.3	13.6	21.5
Meas018	Ductwork	Surrounding noise from ductwork	4	92.2	89.2	0.5	1.5	2.4
Meas019	19	Surrounding noise from ductwork	4	90.2	87.3	0.8	2.4	3.8

Meas020	Walkway	Surrounding noise from ductwork	4	87.9	85.0	1.3	4.1	6.5
Meas021	Krefin	Inaudible noise from Krefin compared to 2024 survey, Surrounding noise sources such as ductwork are the primary noise source.	4	90.7	87.8	0.7	2.2	3.4
Meas022	Fuel Gas Pipes	Pipework noise	4	88.5	85.6	1.1	3.6	5.7
Meas023	Fuel Gas Pipes	Pipework noise	4	82.8	80.2	4.2	13.3	21.0
Meas024	Under pipework	Steam noise from pipework	4	82.0	79.5	5.0	16.0	≥24
Meas025	GCRS	Noise from extraction + pipework	4	78.7	76.7	10.8	≥24	≥24
Meas026	GCRS	Noise from extraction + pipework	4	81.5	79.1	5.7	17.9	≥24
Meas027	GCRS	Noise from extraction + pipework	4	79.8	77.6	8.4	≥24	≥24
Meas028	GCRS	Noise from extraction + pipework	4	77.5	75.8	14.2	≥24	≥24
Meas029	Walkway Outside	Noise from turbine hall and surrounding ductwork	4	77.3	75.7	14.9	≥24	≥24
Meas030	Turbine Hall	Noise from Pipework and Turbine.	4	85.2	82.4	2.4	7.6	12.1
Meas031	Turbine Hall	Noise from Pipework and Turbine.	4	86.6	83.8	1.8	5.5	8.8
Meas032	Lube Oil Filter Cooler No.2	Noise from Pipework and Turbine.	4	88.4	85.5	1.2	3.7	5.8
Meas033	Under Extractor	Noise from Pipework and Turbine.	4	89.7	86.8	0.9	2.7	4.3
Meas034	B-20	Noise from Pipework and Turbine.	4	89.3	86.4	0.9	3.0	4.7
Meas035	MCB Section	Noise from Pipework and Turbine.	4	87.4	84.5	1.5	4.6	7.3
Meas036	Walkway	Noise from Pipework and Turbine.	4	85.9	83.1	2.1	6.5	10.3
Meas037	First Floor - See noise map	Noise from Pipework and Turbine.	4	84.9	82.2	2.6	8.2	13.0
Meas038	First Floor - See noise map	Noise from Pipework and Turbine.	4	89.3	86.4	0.9	3.0	4.7
Meas039	First Floor - See noise map	Noise from Pipework and Turbine.	4	87.2	84.4	1.5	4.8	7.6
Meas040	Turbine Hall	Noise from Pipework and Turbine.	4	86.2	83.4	1.9	6.1	9.6

Occupational Noise Calculations

Meas No.	Location	Description of Noise Environment	Exposure			Time to Exceed Exposure Levels (Hrs)		
			Time (Hrs)	dB L_{Aeq}	dB $L_{EX,8h\ Total}$	80dB $L_{EX,8h}$	85dB $L_{EX,8h}$	87dB $L_{EX,8h}$
Meas041	Turbine Hall	Noise from Pipework and Turbine.	4	87.2	84.4	1.5	4.8	7.6
Meas042	Under Turbine Duct outside	Noise from duct	4	76.5	75.1	17.9	≥24	≥24

Meas043	Under Extraction fans outside	Aerodynamic noise from fans above	4	77.3	75.7	14.9	≥24	≥24
Meas044	Under Extraction fans outside	Aerodynamic noise from fans above	4	77.4	75.7	14.6	≥24	≥24
Meas045	Under Extraction fans outside	Aerodynamic noise from fans above	4	77.1	75.5	15.6	≥24	≥24
Meas046	Under Extraction fans outside	Aerodynamic noise from fans above	4	78.9	76.9	10.3	≥24	≥24
Meas047	Above Extraction fans	Aerodynamic noise from fans below	4	80.0	77.8	8.0	≥24	≥24
Meas048	Electrical Room	Low 'Noise from transformers	4	61.9	70.3	≥24	≥24	≥24
Meas049	Electrical Room	Noise from transformers	4	70.2	71.8	≥24	≥24	≥24
Meas050	Electrical room - Centre	Noise from transformers	4	65.1	70.7	≥24	≥24	≥24
Meas051	Electrical room - 10BLT10	Noise from transformers	4	71.7	72.4	≥24	≥24	≥24

Table 4: Measured L_{Aeq} and calculated $L_{EX,8h}$ values throughout the Whitegate Power Station.

Noise Mapping

Noise measurements taken throughout the facility were used to generate contoured L_{Aeq} and $L_{EX,8h}$ noise maps as described in Section 3 above. These noise maps are displayed in Appendix A and B. The noise maps create a visual representation of the following key indicators:

- Appendix A: Map of calculated $L_{EX,8h}$ relevant to occupational noise limits and exposure values.
- Appendix B: Map of L_{Aeq} with close contours to identify areas of elevated noise levels.

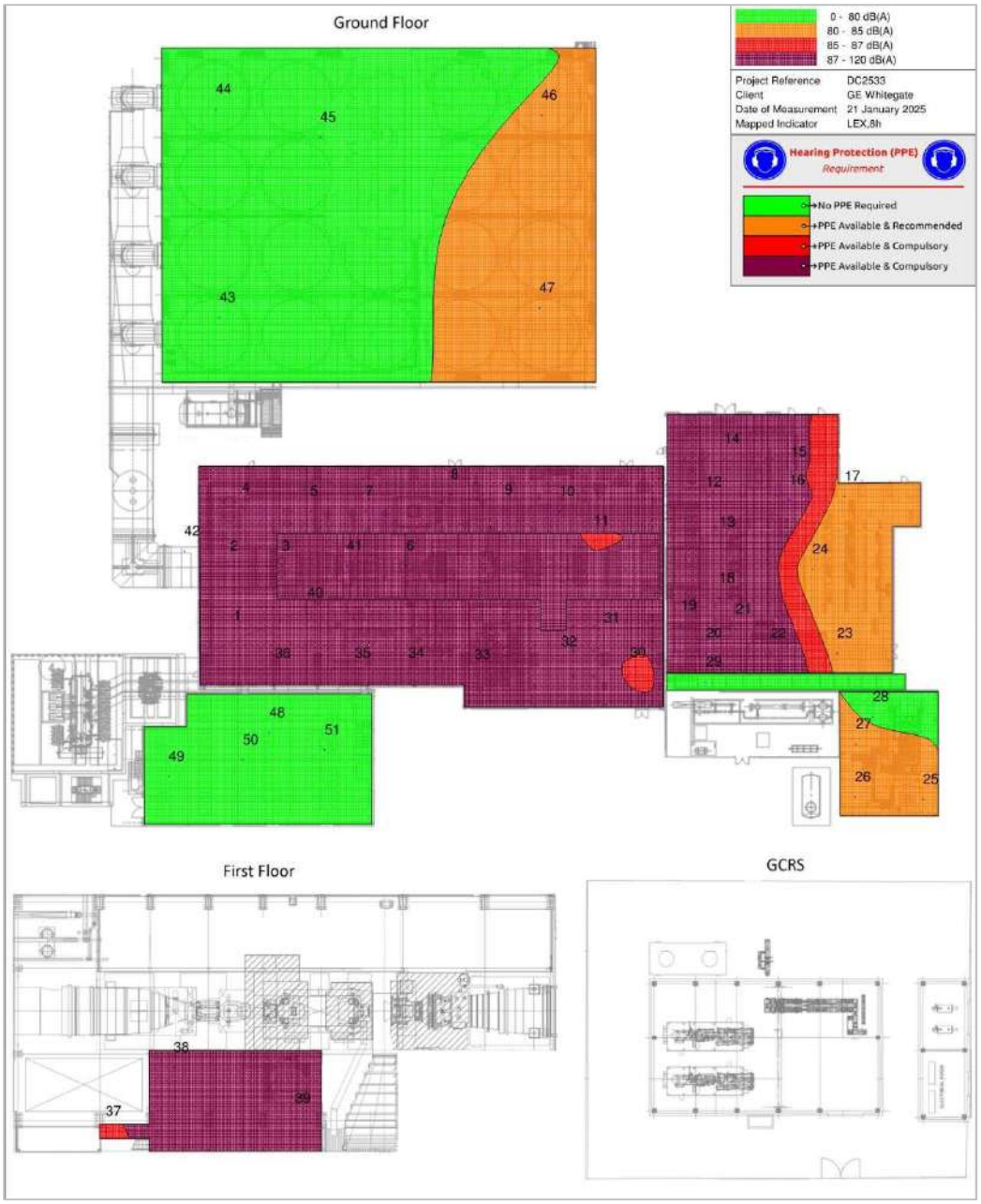


Figure 1: Excerpt from noise map detailed in Appendix A showing noise exposure, $L_{EX,8h}$ relative to the action and limit values.

Discussion And Recommendations

Work Areas in Breach of the Occupational Noise Limits

Work areas that are above the occupational noise action and limit values are discussed in the tables below. It is recommended to read this section with reference to Section 4 above.

Work Areas in Excess of the Lower Action Value				
Meas	Location	Comments / Description of Source	dB $LEX_{,8h}$	dB $LEX_{,8h}$ Reduction to Achieve Lower Action Value
Meas017	Ductwork	Noise from nearby Pipework	80.1	0.1
Meas023	Fuel Gas Pipes	Pipework noise	80.2	0.2
Meas011	Compressed air receiver	Noise from Pipework and Turbine.	81.8	1.8
Meas037	First Floor - See noise map	Noise from Pipework and Turbine.	82.2	2.2
Meas030	Turbine Hall	Noise from Pipework and Turbine.	82.4	2.4
Meas001	Exit Door	Turbine Noise	83.1	3.1
Meas036	Walkway	Noise from Pipework and Turbine.	83.1	3.1
Meas040	Turbine Hall	Noise from Pipework and Turbine.	83.4	3.4
Meas014	10LAC51AP001	Noise from nearby ductwork	83.6	3.6
Meas015	Degasser controller	Noise from nearby Pipework	83.6	3.6
Meas031	Turbine Hall	Noise from Pipework and Turbine.	83.8	3.8
Meas002	Under Turbine	Turbine Noise	84.0	4.0
Meas039	First Floor - See noise map	Noise from Pipework and Turbine.	84.4	4.4
Meas041	Turbine Hall	Noise from Pipework and Turbine.	84.4	4.4
Meas003	Fisar Humidity controller	Noise from humidity controller	84.5	4.5
Meas035	MCB Section	Noise from Pipework and Turbine.	84.5	4.5
Meas016	Degasser controller	Noise from nearby Pipework	84.7	4.7

Table 5: Description of noise sources at work areas above the lower action value.

Work Areas in Excess of the Upper Action Value

Meas	Location	Comments / Description of Source	dB $LEX_{,8h}$	dB $LEX_{,8h}$ Reduction to Achieve Lower Action Value
Meas020	Noise Map	**Low noise from Krefin, Surrounding noise from ductwork	85.0	0.0
Meas032	Cooling water pipes	Noise from Pipework and Turbine.	85.5	0.5
Meas005	Bund	Pump noise + Turbine Noise	85.6	0.6
Meas022	Fuel Gas Pipes	Pipework noise	85.6	0.6
Meas012	Exit Door	Noise from Pipework and Turbine.	85.7	0.7
Meas034	B-20	Noise from Pipework and Turbine.	86.4	1.4
Meas038	First Floor - See noise map	Noise from Pipework and Turbine.	86.4	1.4
Meas033	Under Extractor	Noise from Pipework and Turbine.	86.8	1.8

Table 6: Description of noise sources at work areas above the upper action value.

Work Areas in Excess of the Exposure Limit Value				
Meas	Location	Comments / Description of Source	dB $LEX_{,8h}$	dB $LEX_{,8h}$ Reduction to Achieve Lower Action Value
Meas010	Air Compressor No.2	Noise from Pipework and Turbine.	87.2	0.2
Meas019	Walkway	**Low noise from Krefin, Surrounding noise from ductwork	87.3	0.3
Meas009	Lectrodryer BAC-50	Noise from Pipework and Turbine.	87.6	0.6
Meas021	Krefin	**Low noise from Krefin, Surrounding noise from ductwork	87.8	0.8
Meas013	See noise map	Noise from pumps and ductwork	88.2	1.2
Meas007	Emergency shower area	Turbine Noise	88.3	1.3
Meas008	Sulzer cooler	Noise from Pipework and Turbine.	88.7	1.7
Meas018	Air 12 Krefin 800	**Low noise from Krefin, Surrounding noise from ductwork	89.2	2.2
Meas004	Condensate extraction pumps	Pump noise + Turbine Noise	89.9	2.9
Work Areas in Excess of the Exposure Limit Value				

Meas	Location	Comments / Description of Source	dB $LEX_{,8h}$	dB $LEX_{,8h}$ Reduction to Achieve Lower Action Value
Meas006	Extractor	High noise from extractor	101.8	14.8

Table 7: Description of noise sources at work areas above the exposure limit value.

Noise Control Engineering

It is recommended to use noise control engineering to reduce the occupational noise exposure in the work areas outlined in Section 5.1 above to below the Lower Action Value. These measures could include screens and enclosures, acoustic pump jackets, plant maintenance, specifying low noise plant, etc.

It is worth noting that many of the plant items assessed, which exceed the various action levels discussed above, are already housed in dedicated rooms, separated from other plant and are not areas of regular or on-going work.

As such, it may not be considered feasible to carry out proprietary noise mitigation in these rooms. Hence, Section 5.5 below details relevant guidelines relating to the use of hearing protection and how this can be used to minimise occupational noise exposure for such sporadic occasions of exposure to elevated occupational noise levels.

Organisational Recommendations

The calculations of noise exposure, $L_{EX,8h}$ values in this report are mostly based on the assumption that employees will spend the entire working day at any or each measurement location. This may or may not be the case. Nonetheless, it is primarily recommended to minimise the time spent by employees in the higher noise areas by moving employees to areas of lower noise exposure over the course of the day. This is likely to be the most appropriate and immediate method of maintaining the noise exposure to employees below the upper action value.

Signage and Demarcation

The $L_{EX,8h}$ noise maps produced and presented in Appendix A of this report can be used to demark (on the ground) and indicate by signage the areas in excess of the lower action value, upper action value and exposure limit value. Where noise exposure is likely to be in excess of the lower and upper action values, the following recommendations are made:

In Excess of Lower Action Value

Where noise exposure to employees is potentially in excess of the lower action value of 80dB $L_{EX,8h}$ it is recommended to undertake the following action in addition to other recommendations:

- Display warning signs to convey to the employee that noise exposure in this area is likely to exceed the lower action value.
- Hearing Protection is available and may be worn in this area.
- Clearly outline the area in excess of the lower action value using demarcation on the ground and recognised signs to recommend the use of hearing protection.

In Excess of Upper Action Value

Where noise exposure to employees is potentially over the upper action value of 85dB $L_{EX,8h}$ it is recommended to undertake the following action in addition to other recommendations:

- Display mandatory warning signs to convey to the employee that noise exposure in this area is likely to exceed the upper action value.
- Hearing Protection is available and must be worn in this area.
- Clearly outline the area in excess of the upper action value using demarcation on the ground.
- Organise work schedules to minimise the time spent by employees in such areas.

In Excess of Exposure Limit Value

Where noise exposure to employees is potentially over the exposure limit value of 87dB $L_{EX,8h}$ it is recommended to undertake the following action in addition to other recommendations:

- Display mandatory warning signs to convey to the employee that noise exposure in this area is likely to exceed the exposure limit value.
- Hearing Protection is available and must be worn in this area.
- Clearly outline the area in excess of the exposure limit value using demarcation on the ground.
- Organise work schedules to minimise the time spent by employees in such areas.
- Measures should be taken to reduce the noise exposure level in these areas, to below the upper action value.

Hearing Protection

The minimum required SNR value for hearing protection to be used at the Whitegate Power Station is as follows:

- 32dB SNR

Providing personal hearing protection should be one of the first considerations on discovering a risk to the health of your employees due to noise. It should not be used as an alternative to controlling noise by technical and organisational means, but for tackling the immediate risk while other control measures are being developed. In the longer term, it should be used where there is a need to provide additional protection beyond what has been achieved through noise control. As discussed above, the opportunity to implement feasible noise control engineering measures in this case is minimal.

Personal hearing protection must be supplied by the employer to any employee whose daily personal noise exposure is likely to exceed 80 dB $L_{EX,8h}$, or who is likely to be exposed to peak sound pressure levels above 135 dB(C).

There are two main forms of hearing protectors and these are the following:

Ear Muffs

Suitable where operator's hands may be greasy, and operator may want to remove and replace hearing protection throughout the day – i.e. maintenance and engineering personnel. Recommended ear muff products include the following:

- 3M Peltor Optime III (35dB SNR);
- Howard Leight Leightning L3 (34dB SNR).

Figure 2: Recommended Ear Muffs which provide various useful features depending on client preference. A range of ear muffs can typically be supplied by local PPE providers or online PPE providers such as http://www.protecdirect.co.uk/.

Ear Plugs

Suitable for one off visits by administrative or technical staff to high noise areas. Also suitable for production type operators where the hearing protector is not required to be removed during production for communication or other reasons. It is recommended to Whitegate Power Station to provide a comfortable and effective ear plug to operators, therein promoting the usage of hearing protection. The following ear plugs provide a variety of specific features and are recommended by Allegro Acoustics:

- 3M 1100 Uncorded Earplug (SNR = 29dB) – Hypoallergenic foam; this ear plug adapts well to various ear and auditory canal shapes and performs well in practice due to maintaining a good fit.
- U-Vex X-fit Uncorded Earplug (SNR = 37dB) – Voice recognition; this earplug provides excellent voice recognition and is therefore useful on production floors as it provides the necessary noise reduction but also aids speech and communication.
- Howard Leight Max-1 Uncorded Earplug (SNR = 37dB) – Long wearing comfort; this earplug is ergonomically designed to provide comfort when worn over longer periods.

Figure 3: Recommended Ear Plugs which provide various useful features depending on client preference. A range of ear plugs can typically be supplied by local PPE providers or online PPE providers such as http://www.protecdirect.co.uk/.

It is recommended to Whitegate Power Station to install ear plug dispensing stations at a number of locations throughout the floor so that employees have the option to use hearing protection at all times.

The use of personal hearing protection should be managed through the provision of appropriate information, instruction and training for employees, supervision and the use of appropriately defined and demarcated Hearing Protection Zones. A range of different ear plugs can be provided at the facility to take account of personal preferences amongst operators so that each operator has more than on option in terms of hearing protection. This practice promotes the use of hearing protection within itself.

Good Practice Guidelines

It is recommended that Whitegate Power Station consider the following good practice relating to the protection of employees from excessive noise exposure:

- Ensure that the design and layout of the workplace is conducive to minimising noise exposure to employees.
- Arrange employee work schedules to minimise the time duration of employees in areas with higher noise levels.

- Continue to maintain and repair worn parts for equipment used as badly maintained equipment typically generates more noise than similar well-maintained equipment.
- When procuring new or replacement equipment, review sound power levels of potential new equipment and endeavour to install quieter equipment so as to minimise noise exposure to employees.
- Provide employees with suitable hearing protectors if they request them and their exposure to noise is between the lower and upper exposure action values.
- Provide employees with suitable hearing protectors and ensure that they use them properly when their noise exposure exceeds the upper exposure action values.
- Identify hearing protection zones, i.e. areas where the use of hearing protection is compulsory and mark such areas with signs if possible.
- Ensure that hearing protectors are suitable for the level of exposure and are properly used and maintained.
- Health surveillance for noise-induced hearing damage should be in place for employees whose daily personal noise exposure is frequently above 80 dB $L_{EX,8h}$.

Information, Instruction and Training

It is important that employees understand the risks they may be exposed to. Where the employee is at risk from noise, Whitegate Power Station must advise them of the following:

- The likely noise exposure and the risk to hearing this noise creates.
- What action is being taken by Whitegate Power Station to control risks and exposure.
- Where and how employees can obtain hearing protection.
- How the employee can report defects in hearing protection and noise-control equipment.
- What employee and employer duties exist under the Control of Noise at Work Regulations
  [1].
- What the employee can do to minimise the risk, such as the proper way to use hearing protection and other noise-control equipment, how to look after it and store it, and where to use it.
- The health surveillance systems – see Section 5.8 below.

This information should be given in a way that the employee can be expected to understand (for example special arrangements might need to be made if the employee does not understand English or cannot read).

To establish whether information, instruction and training has been carried out effectively, look for evidence that personal hearing protection is being fully and

properly used, that noise control equipment is being used, and that procedures for low noise working are being followed.

Providing Health Surveillance

Health surveillance for noise-induced hearing damage should be in place for employees whose daily personal noise exposure is frequently above 80 dB(A), or who are frequently exposed to peak sound pressure levels above 135 dB(C). Health surveillance should also be provided where exposures are lower, but where the employee may be particularly sensitive to noise. Such a case includes an employee with an existing hearing condition. As a minimum, a programme of health surveillance should include:

- Audiometric testing - baseline assessment on first entering a job involving noise exposure, annual testing for two years, triennial testing.
- Arrangements to receive medical advice on management of affected employees.
- Arrangements to receive anonymous information to demonstrate effectiveness of controls.

Review of Noise Risk Assessment

Assessments should be continually reviewed and updated in accordance with changes to equipment used. Occupational noise surveys should be carried out periodically if new noisy equipment is installed or following the implementation of any noise control measures to assess effectiveness.

References

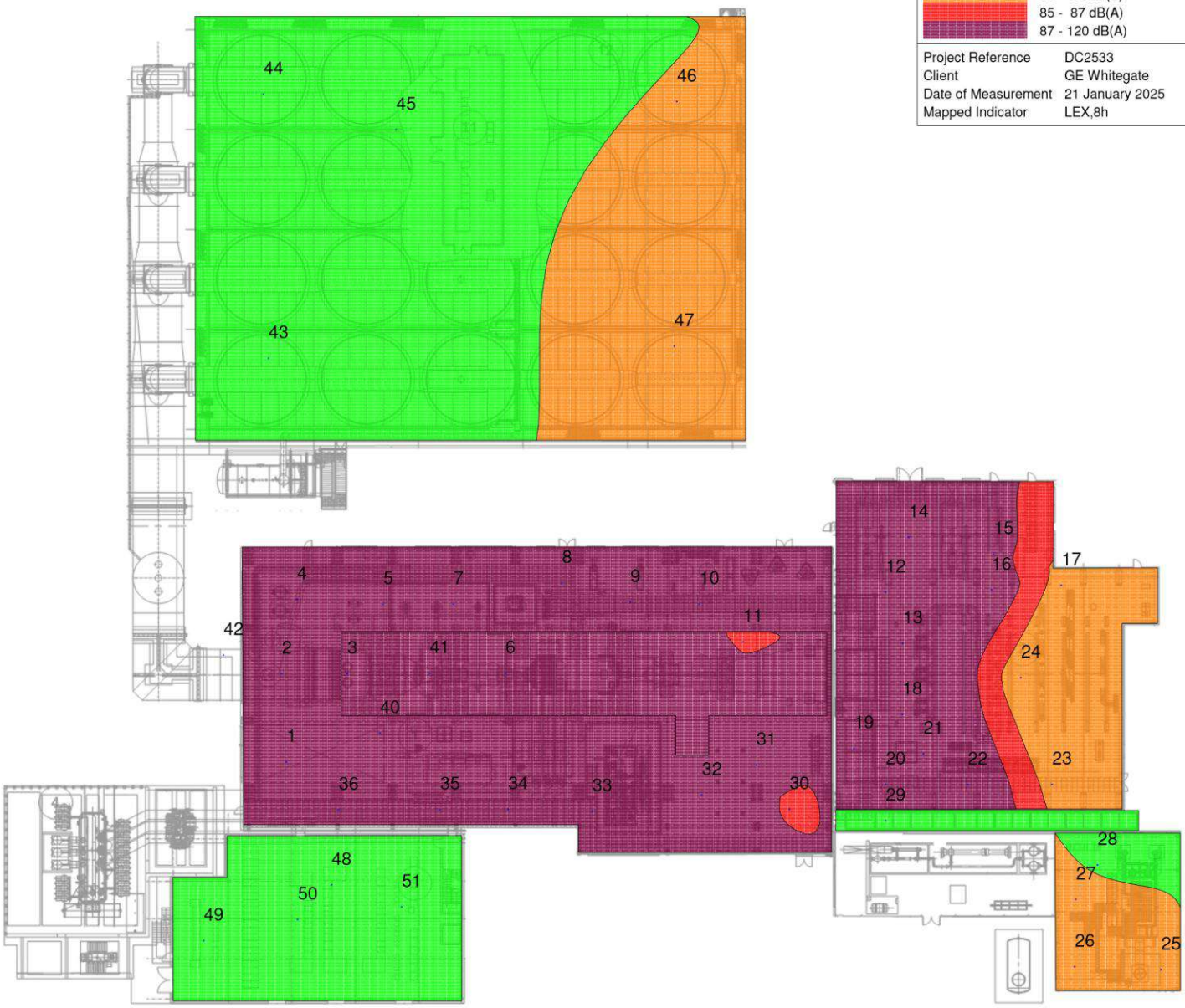
[1] Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 5: Control of Noise at Work
Health and Safety Authority (HSA 2007)

[2] Safety, Health and Welfare at Work (General Application) Regulations 2007
Chapter 1 of Part 5: Control of Noise at Work, S.I. No. 299 of 2007
Health and Welfare at Work (General Application) (Amendment) Regulations 2007

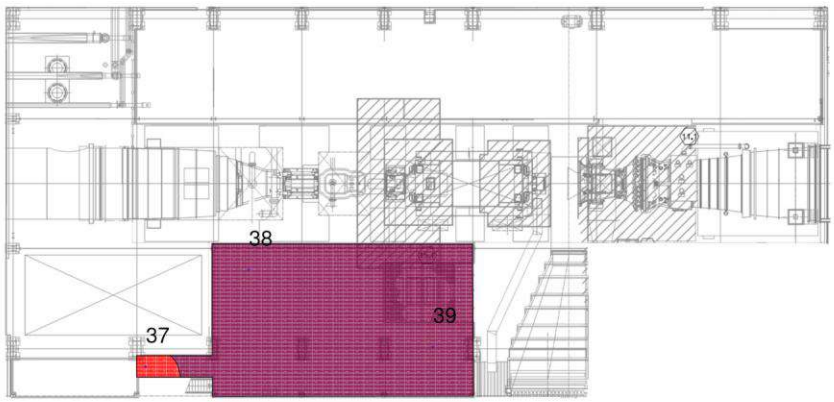
Appendix A

$L_{Ex,8h}$ Noise Map

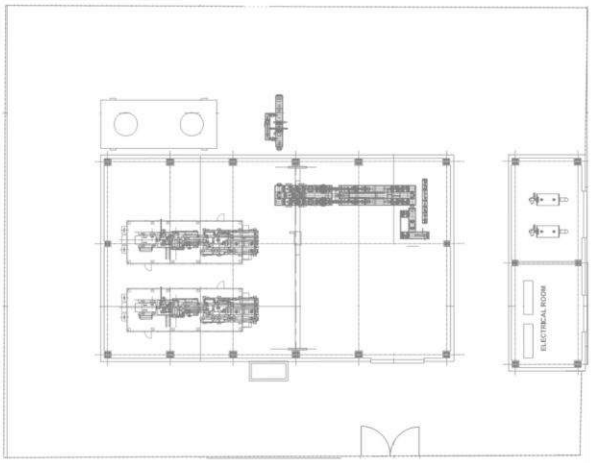
Ground Floor



First Floor



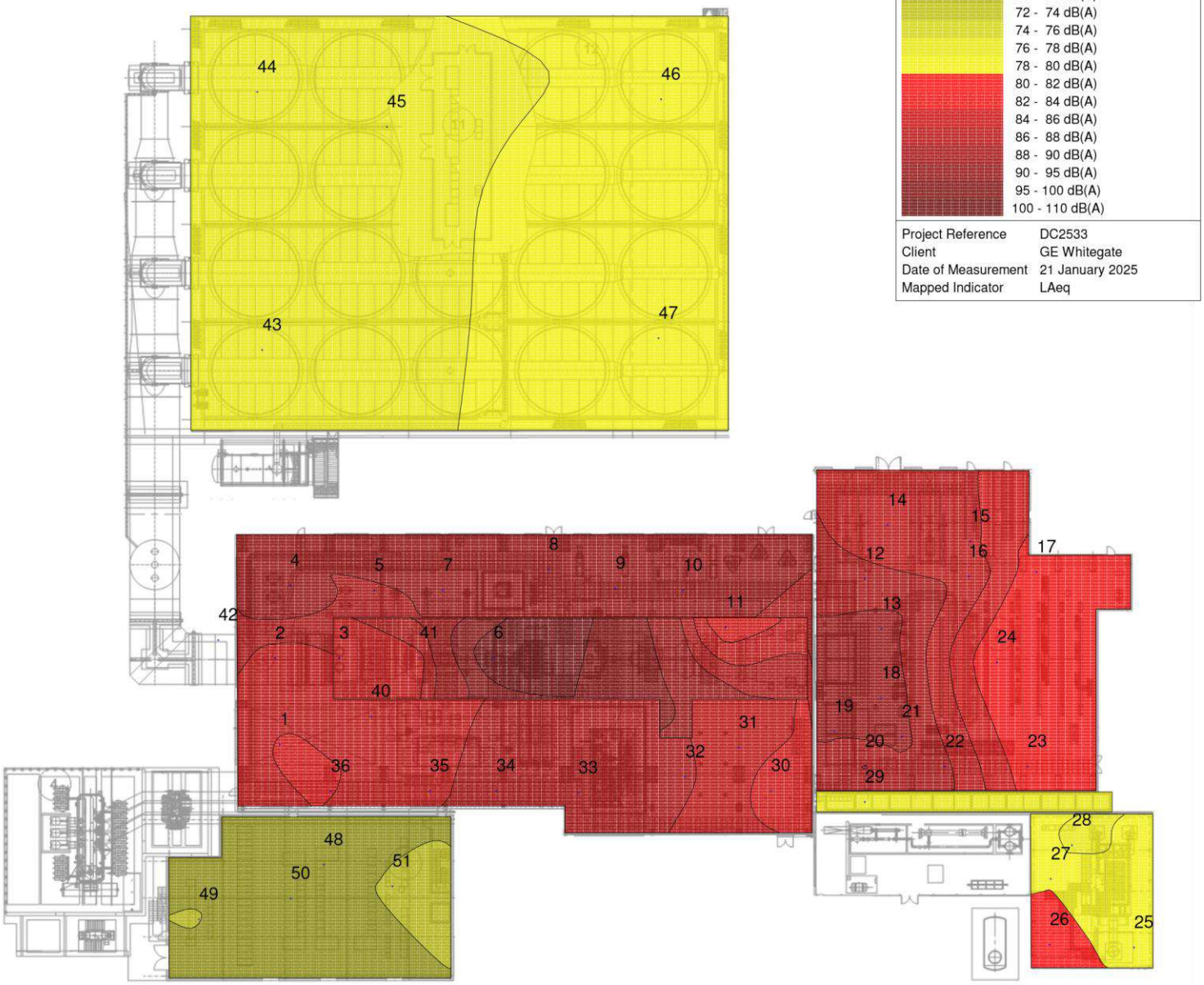
GCRS



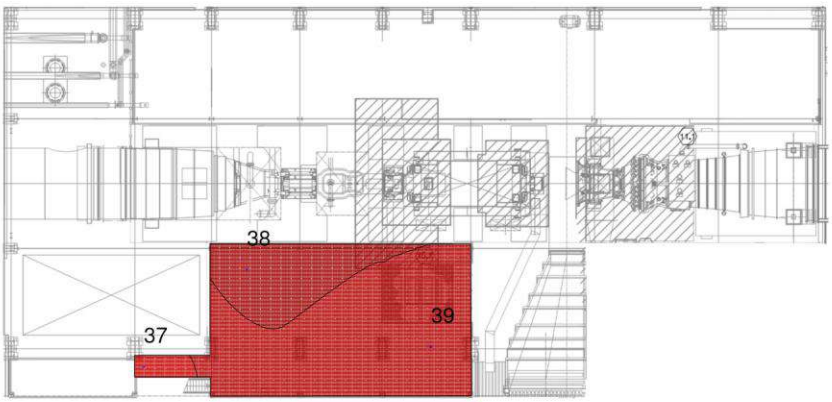
Appendix B

L_{Aeq} Noise Map

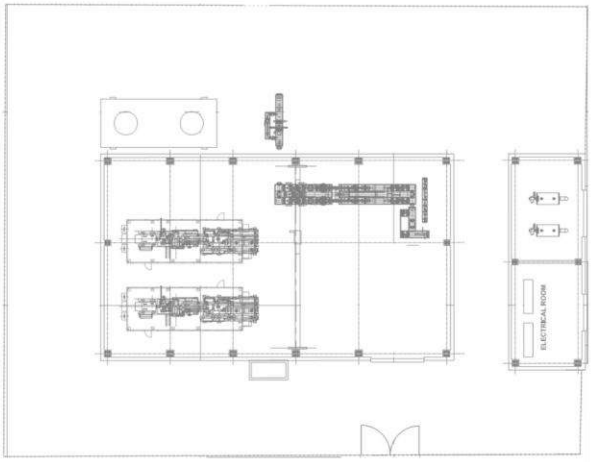
Ground Floor



First Floor



GCRS



Appendix C

Calculated Exposure Level Table

ALLEGRO ACOUSTICS

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h}$ Equip	$L_{EX,8h}$ Away from Primary Work Area	$L_{EX,8h}$ Total	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas001	Exit Door	Turbine Noise	4	85.9	105.8	8	70	82.9	70.0	83.1	2.1	6.5	10.3	
Meas002	Under Turbine	Turbine Noise	4	86.8	104.5	8	70	83.8	70.0	84.0	1.7	5.3	8.4	
Meas003	Condensate Extraction Pumps	Pump noise + Turbine Noise	4	87.4	104.2	8	70	84.4	70.0	84.5	1.5	4.6	7.3	
Meas004	Condensate extraction pumps	Pump noise + Turbine Noise	4	92.9	107.9	8	70	89.9	70.0	89.9	0.4	1.3	2.1	
Meas005	Bund	Pump noise + Turbine Noise	4	88.5	105.4	8	70	85.5	70.0	85.6	1.1	3.6	5.7	
Meas006	Extractor	High noise from extractor	4	104.8	121.4	8	70	101.8	70.0	101.8	0.0	0.1	0.1	
Meas007	Emergency shower area	Turbine Noise	4	91.2	107.2	8	70	88.2	70.0	88.3	0.6	1.9	3.0	

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas008	Sulzer cooler	Noise from Pipework and Turbine.	4	91.7	111.2	8	70	88.7	70.0	88.7	0.5	1.7	2.7	
Meas009	Lectrodryer BAC-50	Noise from Pipework and Turbine.	4	90.5	109.7	8	70	87.5	70.0	87.6	0.7	2.3	3.6	
Meas010	Air Compressor No.2	Noise from Pipework and Turbine.	4	90.1	119.3	8	70	87.1	70.0	87.2	0.8	2.5	3.9	
Meas011	Compressed air receiver	Noise from Pipework and Turbine.	4	84.5	104	8	70	81.5	70.0	81.8	2.8	9.0	14.2	
Meas012	Exit Door	Noise from Pipework and Turbine.	4	88.6	106.8	8	70	85.6	70.0	85.7	1.1	3.5	5.5	
Meas013	See noise map	Noise from pumps and ductwork	4	91.1	110.8	8	70	88.1	70.0	88.2	0.6	2.0	3.1	
Meas014	10LAC51AP001	Noise from nearby ductwork	4	86.4	105.7	8	70	83.4	70.0	83.6	1.8	5.8	9.2	

4 8 70 70.0

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas015	Sample Test Area	Noise from nearby ductwork	4	86.4	105.4	8	70	83.4	70.0	83.6	1.8	5.8	9.2	
Meas016	Degasser controller	Noise from nearby Pipework	4	87.6	105	8	70	84.6	70.0	84.7	1.4	4.4	7.0	
Meas017	Ductwork	Noise from nearby Pipework	4	82.7	101.8	8	70	79.7	70.0	80.1	4.3	13.6	21.5	
Meas018	Ductwork	Surrounding noise from ductwork	4	92.2	111.1	8	70	89.2	70.0	89.2	0.5	1.5	2.4	
Meas019	19	Surrounding noise from ductwork	4	90.2	109.4	8	70	87.2	70.0	87.3	0.8	2.4	3.8	
Meas020	Walkway	Surrounding noise from ductwork	4	87.9	106.8	8	70	84.9	70.0	85.0	1.3	4.1	6.5	
Meas021	Krefin	Inaudible noise from Krefin compared to 2024 survey, Surrounding noise sources such as ductwork are the primary noise source.	4	90.7	109.3	8	70	87.7	70.0	87.8	0.7	2.2	3.4	

4 8 70 70.0

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas022	Fuel Gas Pipes	Pipework noise	4	88.5	108.9	8	70	85.5	70.0	85.6	1.1	3.6	5.7	
Meas023	Fuel Gas Pipes	Pipework noise	4	82.8	102.8	8	70	79.8	70.0	80.2	4.2	13.3	21.0	
Meas024	Under pipework	Steam noise from pipework	4	82	104.5	8	70	79.0	70.0	79.5	5.0	16.0	25.3	
Meas025	GCRS	Noise from extraction + pipework	4	78.7	96.7	8	70	75.7	70.0	76.7	10.8	34.1	54.1	
Meas026	GCRS	Noise from extraction + pipework	4	81.5	97.7	8	70	78.5	70.0	79.1	5.7	17.9	28.4	
Meas027	GCRS	Noise from extraction + pipework	4	79.8	96	8	70	76.8	70.0	77.6	8.4	26.5	42.0	
Meas028	GCRS	Noise from extraction + pipework	4	77.5	94	8	70	74.5	70.0	75.8	14.2	45.0	71.3	

4 8 70 70.0

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas029	Walkway Outside	Noise from turbine hall and surrounding ductwork	4	77.3	100.4	8	70	74.3	70.0	75.7	14.9	47.1	74.7	
Meas030	Turbine Hall	Noise from Pipework and Turbine.	4	85.2	104.4	8	70	82.2	70.0	82.4	2.4	7.6	12.1	
Meas031	Turbine Hall	Noise from Pipework and Turbine.	4	86.6	104.4	8	70	83.6	70.0	83.8	1.8	5.5	8.8	
Meas032	Lube Oil Filter Cooler No.2	Noise from Pipework and Turbine.	4	88.4	105.9	8	70	85.4	70.0	85.5	1.2	3.7	5.8	
Meas033	Under Extractor	Noise from Pipework and Turbine.	4	89.7	110.5	8	70	86.7	70.0	86.8	0.9	2.7	4.3	
Meas034	B-20	Noise from Pipework and Turbine.	4	89.3	108	8	70	86.3	70.0	86.4	0.9	3.0	4.7	
Meas035	MCB Section	Noise from Pipework and Turbine.	4	87.4	108.6	8	70	84.4	70.0	84.5	1.5	4.6	7.3	

4 8 70 70.0

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas036	Walkway	Noise from Pipework and Turbine.	4	85.9	105.8	8	70	82.9	70.0	83.1	2.1	6.5	10.3	
Meas037	First Floor - See noise map	Noise from Pipework and Turbine.	4	84.9	104.4	8	70	81.9	70.0	82.2	2.6	8.2	13.0	
Meas038	First Floor - See noise map	Noise from Pipework and Turbine.	4	89.3	110.8	8	70	86.3	70.0	86.4	0.9	3.0	4.7	
Meas039	First Floor - See noise map	Noise from Pipework and Turbine.	4	87.2	107	8	70	84.2	70.0	84.4	1.5	4.8	7.6	
Meas040	Turbine Hall	Noise from Pipework and Turbine.	4	86.2	106.7	8	70	83.2	70.0	83.4	1.9	6.1	9.6	
Meas041	Turbine Hall	Noise from Pipework and Turbine.	4	87.2	105.5	8	70	84.2	70.0	84.4	1.5	4.8	7.6	
Meas042	Under Turbine Duct outside	Noise from duct	4	76.5	107.8	8	70	73.5	70.0	75.1	17.9	56.6	89.8	

4 8 70 70.0

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas043	Under Extraction fans outside	Aerodynamic noise from fans above	4	77.3	101.2	8	70	74.3	70.0	75.7	14.9	47.1	74.7	
Meas044	Under Extraction fans outside	Aerodynamic noise from fans above	4	77.4	102	8	70	74.4	70.0	75.7	14.8	46.0	73.0	
Meas045	Under Extraction fans outside	Aerodynamic noise from fans above	4	77.1	100.9	8	70	74.1	70.0	75.5	15.6	49.3	78.2	
Meas046	Under Extraction fans outside	Aerodynamic noise from fans above	4	78.9	102.3	8	70	75.9	70.0	76.9	10.3	32.6	51.7	
Meas047	Above Extraction fans	Aerodynamic noise from fans below	4	80	110.2	8	70	77.0	70.0	77.8	8.0	25.3	40.1	
Meas048	Electrical Room	Low 'Noise from transformers	4	61.9	87.2	8	70	58.9	70.0	70.3	516.5	1633.4	2588.7	
Meas049	Electrical Room	Noise from transformers	4	70.2	86.5	8	70	67.2	70.0	71.8	76.4	241.6	382.9	

4 8 70 70.0

Occupational Noise Calculations		Description	At Equipment			Lunch / Not at equipment		Exposure			Time to Exceed Exposure Levels (Hrs)			Picture
Meas	Location		Time (Hrs)	L_{Aeq}	L_{Cpeak}	Time (Hrs)	L_{Aeq}	$L_{EX,8h\ Equip}$	$L_{EX,8h\ Away\ from\ Primary\ Work\ Area}$	$L_{EX,8h\ Total}$	$L_{EX,8h}$ 80dB	$L_{EX,8h}$ 85dB	$L_{EX,8h}$ 87dB	
Meas050	Electrical room - Centre	Noise from transformers	4	65.1	84.4	8	70	62.1	70.0	70.7	247.2	781.8	1239.1	
Meas051	Electrical room - 10BLT10	Noise from transformers	4	71.7	90.4	8	70	68.7	70.0	72.4	54.1	171.0	271.1	

Appendix D

Calibration Certification

SONITUS SYSTEMS

Statement of Calibration

Issued to:

Allegro Acoustics
C1 South City Business Park
Tallaght
Dublin 24

Calibration Reference
SLM230216

Test Date: 13/09/2023
Procedure: TP-SLM-1

Equipment

Item Calibrated:	Sound Level Meter	**Model**	CR:171B
Make:	Cirrus Research	**Serial Number:**	G079553

Calibration Procedure

The sound level meter was allowed to stabilize for a suitable period, as described in the manufacturer's instruction manual, in laboratory conditions. The sound level meter was calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), Periodic tests, specification of sound level meters. Tolerances for verification procedures are specified in IEC 61672-1 (2003).

Calibration Standards

Description	Serial Number
National Instruments PXI-4461	20D2877
Stanford Research DS360	123803

The standards used in this calibration are traceable to NIST and/or other National Measurement Institutes (NMI's) that are signatories of the International Committee of Weights and Measures (CIPM) mutual recognition agreement (MRA).

Signed on behalf of Sonitus Systems:

Unit 2, Goldenbridge Industrial Estate, Inchicore, Dublin 8, D08 YY38
www.sonitussystems.com Email: info@sonitussystems.com

Appendix E

Glossary of Noise Terminology

General

dB(A): Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sound of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with human perception of loudness whereby a 10dB increase / decrease is generally perceived as a doubling / halving in loudness respectively.

L_{Aeq}, *Equivalent Continuous A-weighted Sound Level*: The continuous steady noise level, which would have the same total A-weighted acoustic energy as the real fluctuating noise measured over the same period of time. *Relationship between L_{Aeq} and NR: $L_{Aeq} \approx NR + 5$*

L_{Amax}, Maximum A-weighted instantaneous noise level that is measured throughout a noise measurement. In the case of road traffic for example, the L_{Amax} is representative of the noise level due to a passing vehicle at the closest / loudest point.

1/3rd Octave Band: For simplicity, the frequency spectrum is sub divided into bands of one third of an octave each. An octave is taken to be the frequency interval, the upper limit of which is twice the lower limit (in Hertz).

Ambient Noise: Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far.

Building Acoustics & Sound Insulation

$D_{nT,w}$, *Weighted Standardised Level Difference*: This is a measure of the level of airborne sound insulation provided by the built element between two rooms whereby higher values represent better airborne sound insulation. The $D_{nT,w}$ value is the single number quantity for the airborne sound insulation rating calculated according to ISO 717:1 [5]. The $D_{nT,w}$ performance is verified by carrying out airborne sound insulation testing as outlined in ISO 16283-1 [6].

R_w, *Sound Reduction Index*: This is a measure of sound insulation provided by an individual element (such as a specific wall partition, door or window) when the element is tested in an acoustic testing laboratory. The R_w must be determined by testing in accordance with ISO 10140-1 [7]. The depiction of "Ctr" after the R_w indicator is in reference to the Road Traffic Noise spectrum. The $R_{w\,(Ctr)}$ value is typically lower than the standalone R_w value due to the lower frequency nature of Road Traffic Noise.

C_{tr}, *Traffic Noise Adaptation Term*: this adaptation term accounts for the influence that the low frequency noise components associated with urban traffic have on the Sound Insulation performance of a structural component such as glazing or trickle vents.

$L_{n,w}$, *Weighted Normalized Impact Sound Pressure Level: This is a l*aboratory measurement of sound performance of a building element floor. There is no flanking (indirect) transmission loss, so only the element under test needs to be considered.

$L'_{nT,w}$ (or L_w), *Weighted Standardised Impact Sound Pressure Level*: This is a field measurement of the level of impact sound insulation provided by a floor structure whereby lower values represent better impact sound insulation. The L_w value is the single number quantity for the impact sound insulation rating, in decibels, of the reference curve at 500Hz after shifting it in accordance with the method specified in ISO 717:2 [8]. The $L'_{nT,w}$ performance is verified by carrying out impact sound insulation testing to ISO 140-7 [9].

$D_{n,e,w}$, *Element Normalised Level Difference:* This is a measure of the sound insulation provided by a building element and is typically used in reference to trickle vents. The depiction of "Ctr" after the $D_{n,e,w}$ indicator is in reference to the Road Traffic Noise spectrum. The $D_{n,e,w\,(Ctr)}$ value is typically lower than the standalone $D_{n,e,w}$ value due to the lower frequency nature of Road Traffic Noise.

NR, Noise *Rating*: This indicator refers to the noise level in a room. This is a dB value and is based on a set of ISO derived NR Curve values. This indicator is commonly used to set a limit

for or assess air management system noise in a building. The typical relationship between the measured L_{Aeq} and NR for typical building services noise is $L_{Aeq} \approx$ NR + 5dB.

RT, *Reverberation Time:* The Reverberation Time or RT is a measure of "echo" in a room and is defined as the length of time taken for a sound to drop by 60dB in a room. This is measured by generating a loud sound in a room and measuring the first 20dB or 30dB of decay across the relevant frequency range. Typically, rooms designed for speech exhibit shorter RT values to accommodate a sharpening of syllabic and phonetic sounds. Rooms designed for music tend to exhibit longer RT values to suit musical ambience.

Reverberation Time, T_{mf} (s): The T_{mf} parameter refers only to the mid frequency (typical speech frequency range) Reverberation Time values (RT) from 500Hz to 2k Hz. The single figure T_{mf} value is an average of measured Reverberation Time (RT) values at each frequency band from 500Hz to 2k Hz.

Environmental Noise

L_{A10}: The A-weighted noise level that is equaled or exceeded for 10% of the measurement period. This is typically used to indicate the noise level due to intermittent, frequent noise events such as the road traffic noise level at a location.

L_{A90}: The A-weighted noise level that is equaled or exceeded for 90% of the measurement period. This is typically used to indicate the background noise level at a location.

Noise Sensitive Receptor: A noise sensitive receptor is regarded as any dwelling house, hotel or hostel, health building, educational establishment, places of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.

Tone: A noise with a narrow frequency composition identified in ISO 1996 [10] as where the sound pressure level in any given third octave band is equal to or in excess of 5dB above the sound pressure levels in both adjacent one third octave bands.

$L_{Ar,T}$: *Rating level:* The specific noise level from a facility plus adjustment for the characteristic features of the noise (according to the definition as set out in NG4 [11].

Appendix 2

Example of Alternatives Considered chapter carried out to fit EIAR criteria more correctly than those presented in the BGE EIAR. Note scoring matrix still absent from this example.

3 ALTERNATIVES CONSIDERED

3.1 INTRODUCTION

This Chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the reasonable alternatives considered by the Developer in the design of the Proposed Development. Alternatives were assessed taking commercial, construction, operational and key environmental constraints into consideration.

3.2 STATEMENT OF AUTHORITY

This chapter has been prepared by Sarah Jones and David Kiely of Jennings O'Donovan & Partners Limited and Ben Stevenson of Black and Veatch Ltd.

Sarah Jones is an Environmental Scientist and Planner and holds a first-class MSc in Environmental Sustainability from University College Dublin and a Bachelor (Hons.) Degree in Geography from Manchester Metropolitan University. Sarah has recently developed a specialist knowledge of hydrogen production and her key capabilities include Environmental Impact Assessment (EIA) screenings, Appropriate Assessment (AA) screenings, Planning and Environmental reports and Applications, Environmental Impact Assessments, Feasibility Studies, Construction Environmental Management Plans, Stakeholder Engagement, Project Management.

David Kiely is a Director of JOD who holds a BE in Civil Engineering from University College Dublin and MSc in Environmental Protection from IT Sligo. He is a Fellow of Engineers Ireland, a Chartered Member of the Institution of Civil Engineers (UK) and has over 40 years' experience. He has extensive experience in the preparation of EIARs and EISs for environmental projects including Wind Farms, Solar Farms, Wastewater Projects, and various commercial developments. David has also been involved in the construction of over 60 wind farms since 1997.

Ben Stevenson is the hydrogen solution lead for the EMEA region at Black & Veatch. He has 4 years' experience in the renewable energy industry, with a particular focus on onshore wind and hydrogen. Ben began his career at Black & Veatch as an auditor of renewable energy installations. This involved the assessment of sites' compliance on both the Feed in Tariff and Renewable Obligation support schemes on behalf of the client, Ofgem. To date, Ben has completed c. 100 Ofgem audits and over 400MW of installed capacity, covering solar PV, wind, biomass, landfill gas and hydro technologies. After completing the graduate programme, Ben transferred to support the hydrogen energy team for the EMEA region and was involved with the UK businesses' first hydrogen energy projects for clients. This included feasibility, pre-

FEED and cost estimation studies. Ben is now the hydrogen solutions lead for the region, and oversees a variety of green and blue hydrogen projects through to FEED level. Ben has completed additional internal and external training, including a hydrogen safety credential accredited by American Institute of Chemical Engineers, and also frequently represents Black & Veatch at hydrogen specific conferences. Education: MSc, Renewable Energy Engineering, University of Aberdeen, 2019, United Kingdom. BSc, Environmental Science, University of Edinburgh, 2015, United Kingdom. Construction Skills Certificate Scheme (CSCS), 2022. Fundamental Hydrogen Safety Credential, Center for Hydrogen Safety (American Institute of Chemical Engineers), 2023.

3.3 METHODOLOGY

3.3.1 Approach to the Consideration of Alternatives under the EIA Directives

Article 5(1) of the Revised EIA Directive requires:

"Where an environmental impact assessment is required, the developer shall prepare and submit an environmental impact assessment report. The information to be provided by the developer shall include at least: ...

(d) a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment"

Annex IV of the Revised EIA Directive (Information Referred to in Article 5(1) (Information for the Environmental Impact Assessment Report) states that:

"*A description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant for the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of environmental effects*".

The Revised EIA Directive Consultation states that transposition of these provisions are mandatory, and that:

"*Guidance will be developed on the requirement to study reasonable alternatives, including reference to the fact that some alternatives may already have been studied in relevant*

SEAs. The guidance will also deal with relevant considerations, including 'do nothing' alternative(s), alternative site(s), alternative design(s)/layout(s), alternative processes(s), alternative mitigation measure(s). Reference will also be made to the requirement that

"reasonable alternatives ... relevant to the project and its specific characteristics" are required to be studied".

The subsequent EU Commission guidance, Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report (2017) (the "**Commission Guidance**"), emphasises that for an alternative to be reasonable it must be both relevant to the specific project and feasible:

"'Reasonable Alternatives' must be relevant to the proposed Project and its specific characteristics, and resources should only be spent assessing these Alternatives. In addition, the selection of Alternatives is limited in terms of feasibility…. Ultimately, Alternatives have to be able to accomplish the objectives of the Project in a satisfactory manner, and should also be feasible in terms of technical, economic, political and other relevant criteria." (emphasis added)

The Environmental Protection Agency, in its guidance document on EIAR preparation (2022)[83], stipulates the following:

"*The presentation and consideration of the various alternatives investigated by the applicant is an important requirement of the EIA process…. and the alternatives can include:*

- *Alternative locations;*
- *Alternative layouts;*
- *Alternative designs;*
- *Alternative processes; and*
- *Alternative mitigation measures".*

The scope of the assessment of the environmental effects of any such reasonable alternatives is not required to be exhaustive but must be sufficient to provide an *"indication of the main reasons for the option chosen, taking into account the effects of the project on the environment".* The Commission Guidance describes the obligation in the following terms:

[83] EPA. (2022). Guidelines on the information to be contained in Environmental Impact Statements.

"The method for assessing Alternatives will depend on the type of Alternatives; the only requirement in the EIA Directive is a comparison of the environmental effects (Annex IV to the EIA Directive)…. The level of detail concerning the description of the environmental effects of the Alternatives may be less than for the chosen option. Nevertheless, the aim of the exercise is to provide a transparent and well justified comparison."

The Guidelines on the information to be contained in Environmental Impact Assessment Reports, EPA, 2022, state that "*It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account is deciding on the selected option".*

The presentation and consideration of the various reasonable alternatives investigated by the developer is an important requirement of the EIA process. The objective is for the Developer to present a representative range of feasible alternatives considered which could achieve the project objectives. The alternatives should be described with *"an indication of the main reasons for selecting the chosen option, including a comparison of environmental effects"*. It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account in deciding on the selected option – an EIA for each alternative is not required.

In an effective EIA process, different types of alternatives may be considered at several key stages during the process. As environmental issues emerge during the preparation of the EIAR, alternative designs may need to be considered early in the process or alternative mitigation options may need to be considered towards the end of the process. Public consultations carried out as part of the wider project communication and consenting process can often be a useful source for identifying alternatives, leveraging local knowledge and highlighting wider local interests. The reasonable alternatives which emerged during this iterative design development process are set out in this section of this document.

Taking the legislative and guidance requirements into account, this chapter addresses alternatives under the following headings:

- 'Do Nothing' Option

- Strategic Site Selection
- Alternative Renewable Energy Technology
- Alternative Turbine Numbers and Model
- Alternative Layout and Design
- Alternative Transport Route and Site Access
- Alternative Hydrogen Production Processes and Technology
- Alternative Mitigation Measures

Given the intrinsic link between layout and design, the two will be considered together in this chapter.

3.4 'DO-NOTHING' ALTERNATIVE

Annex IV, Part 3 of the EIA Directive states that the description of reasonable alternatives studied by the Developer should include "*an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.*"

This is referred to as the "do nothing" alternative.

The Commission Guidance (EU, 2017) states that this should involve the assessment of

"an outline of what is likely to happen to the environment should the Project not be implemented – the so-called 'do-nothing' scenario."

The Commission Guidance (at section 1.5.3) goes on to acknowledge the do-nothing scenario may not be a reasonable alternative where there is a pressing need for the project supported by policy.

"*In some cases, however, the do-nothing scenario cannot be considered a feasible option, as a Project is very clearly needed: for example if another policy dictates an action, such as a waste management plan requires improved waste management, then the new plant must be built.*"

As outlined in **Section 1.6; Need for the Development**; Ireland has binding targets set by the EU. By 2030, Ireland is required to ensure that 32% of total energy consumed is generated from renewable resources. As of 2020 renewable energy

account for only 13%[84] of Ireland's primary energy. The Climate Action Plan 2023 has a target of 80% of electricity coming from renewable sources by 2030. It also sets a target of increasing onshore wind to 8.2 GW by 2030, as of May 2022 this was 4.3 GW, leaving a shortfall of 3.9 GW to be achieved in the next 8 years. To meet the required level of emissions reduction by 2030, the Climate Action Plan aims has targets of at least 2.1 TWh consumption of zero emission gas (which includes green hydrogen) for industrial heating and up to 0.7 TWh of renewable gas to aid in the decarbonisation of residential heating by 2030. In light of these policies and targets the do-nothing scenario is not a feasible option in this instance. Notwithstanding the overarching policy imperative for the project, a comparison of the potential environmental effects of the 'Do-Nothing' Alternative compared to the chosen option of developing a renewable energy project are presented in **Table 3.1** below.

Under a 'Do Nothing' alternative, the development of the renewable energy project would not proceed. The land upon which the Proposed Development would occur would remain unchanged as cutover bog. Consequently, the environmental impacts, identified in the EIAR, positive and negative, would not occur. Under this scenario, the prospect of generating additional renewable energy would not occur.

Table 3.1: Environmental effects of 'Do-Nothing' compared with the Firlough Wind Farm and Hydrogen Plant Development

Criteria	Do Nothing	Firlough Wind Farm and Hydrogen Plant
Population & Human Health (incl. Shadow Flicker)	No increase in local employment and no financial gains for the local community. No introduction of hydrogen skills and apprenticeships. No potential for shadow flicker to affect sensitive receptors.	Increase in local employment, financial gains for local community, County Mayo and County Sligo via rates paid and community benefit fund. Introduction of hydrogen skills and apprenticeships. Increased risk of negative impacts of shadow flicker. Addition of improved Wind Farm access roads which can be used for walking as a local amenity.

[84] SEAI. (2021). Energy in Ireland 2021. https://www.seai.ie/publications/Energy-in-Ireland-2021_Final.pdf

Terrestrial Ecology	The ecology of the Proposed Development (including birds) would be expected to remain similar to the present, though continued grazing pressures could be detrimental to the peatland habitats. Peat extraction will continue to degrade habitats and any further afforestation in the area on would be detrimental to habitats. Terrestrial ecology is likely to undergo some level of change because of climate change.	The Proposed Development will result in some cutover bog and improved grassland habitat loss and habitat disturbance resulting in a slight negative impact on species and habitat. Biodiversity enhancements proposed would have a positive impact on the baseline cut over bog habitat at the Wind Farm Site, potentially making habitats more resilient to future climate change.
Aquatic Ecology	If the Proposed Development does not proceed, lands at and in the vicinity of the Proposed Development will continue to be used for forestry, turbary and agricultural purposes. This would result in no significant change to aquatic ecology and habitats. However, it should be noted that these land use activities are having some negative effects on water quality within the catchment as	Increased risk of impacts to water quality during construction, mitigation will be required to reduce and avoid.

Criteria	Do Nothing	Firlough Wind Farm and Hydrogen Plant
	evidenced by the results of the surveys undertaken. If the current turbary peat harvesting continues this will continue to impact water quality and aquatic ecology.	
Soils & Geology	The existing land-use practices, including peat harvesting, forestry and grazing will continue along with the associated	Excavation of soils for turbine foundations, Hydrogen Plant Site and infrastructure has the potential to negatively impacts soils.

	modification of the existing soils.	
Hydrology & Hydrogeology	The existing land-use practice of commercial forestry, peat harvesting, and agricultural activities will continue with associated gradual alteration of the existing environment and associated pressures on water quality.	Site investigations and the conclusion of the Ground Water Supply Assessment found that the combination of ground water extraction from two boreholes and rainwater harvesting was sufficient to supply the expected water demand of the Hydrogen Plant Site without depleting the aquifer or impacting the wells nearby. A waste water treatment system and ongoing monitoring will minimise impacts of wastewater on the receiving environment. Increased run off is a potential impact with any development on a green field site, the drainage systems have been designed to mitigate impacts.
Air & Climate	No temporary localised dust emissions. There will be no increase in air quality or reduction of greenhouse gas emissions provided by the Proposed Development. The Proposed Development will not assist in achieving the renewable energy targets set out in the Climate Action Plan. County Mayo and County Sligo's potential renewable energy capacity will remain underutilised. Further fossil fuels in the transport and other industries will not be	Slight temporary localised negative impacts from dust emissions of construction works. Long term positive impact from displacing fossil fuels and reducing emissions. Positive contribution to Irelands renewable energy targets and mitigation of climate effects. Carbon offset estimation at 1.6 million – 2.5 million tonnes for the lifetime of the Proposed Development.

	displaced by the hydrogen fuel produced at Firlough.	

Criteria	Do Nothing	Firlough Wind Farm and Hydrogen Plant
Noise	No impacts will occur to sensitive noise receptors if the Proposed Development were not to go ahead.	Some temporary negative impacts to noise associated with construction to local noise receptors. Some operational noise impacts to closest receptors of the Proposed Development.
Landscape & Visual	No impact to Landscape and Visual.	Impact to Landscape and Visual from turbines and Hydrogen Plant Site.
Material Assets	No addition of the Wind Farm Substation and Grid Connection as an asset to EirGrid. No removal of commercial Forestry.	Positive impact of provision of electrical infrastructure. Removal of commercial forestry at the Wind Farm Substation location (Replanting lands mitigate).
Cultural Heritage	No impact.	Potential indirect visual impacts to monuments. Potential impact to undiscovered artifacts.
Traffic and Transport	No impact of increased traffic. No displacement of fossil fuel heavy vehicles with green hydrogen vehicles.	Short term negative impact of increased traffic during construction and decommissioning of windfarm. Displacement of fossil fuel heavy vehicles in the transport

		industry with green hydrogen vehicles.

Having regard to the significant positive impacts associated with the Project, including its impact on climate change mitigation, renewable energy targets, improved air quality and economic development and the availability of reasonable measures to mitigate the negative impacts associated with the project, it is considered that the do-nothing scenario would not be justifiable in this instance.

3.5 STRATEGIC DEVELOPMENT SITE SELECTION

3.5.1 Alternative Wind Farm Site Locations

The extant planning permission granted on the 01.08.2013 for the construction of 21 wind turbines (under An Bord Pleanála Reference PL16.241592) included an EIS with consideration of alternative Wind Farm Site locations.

Those assessed in detail were:

- Kilcummin, on the eastern side of Lacken Bay, Co. Mayo.
- Sheskin, to the east of Slieve Fyagh and to the west of the Oweniny River, Co. Mayo.

These can be seen in **Figure 3.1**.

These sites had positive features as potential wind farm locations, however there were concerns about the visual impact, proximity of inhabited houses and road access at the Kilcummin site, and concerns about peat depths and ecological impacts at the Sheskin site.

The inspectors report[85] from the original EIS notes that:

"The EIS subsequently states that both of these sites had positive attributes as potential wind farm locations, although they were eliminated from further consideration having regard to certain critical site selection criteria. For example, the Kilcummin site apparently raised concerns with regard to visual impact, the proximity of nearby dwellings and the adequacy of the road access arrangements, whilst there were also concerns about peat depth and potential ecological impacts

[85] I An Bord Pleanála. (2013). Inspectors Report. https://archive.pleanala.ie/en-ie/case/241592

at the Sheskin site. Accordingly, the case has been put forward that the subject site is the preferred location for the proposed development due to its larger site area, its location adjacent to another wind energy development, and its siting within an area of cutover bogland habitat which is served by an existing road structure. It has also been suggested that the application site was chosen in support of planning policy, presumably in reference to its location within an area identified as 'Tier 1 - Preferred (Large

Wind Farms)' in the Renewable Energy Strategy for Co. Mayo, 2011".

The Wind Farm Site is designated in the Mayo County Development Plan 2022-2028, which has been subject to Strategic Environmental Assessment, in a 'Preferred' area for wind farms.

The Wind Farm Site lies within a sub-category 'Tier 1 (Preferred Large Wind Farms)' indicating it is an area with the potential for large scale wind energy developments. The Wind Farm Site is located predominantly in an area of extensive peat extraction with access tracks already in place. It does not overlap with any environmental designations and is located in an area with a relatively low population density. It is adjacent to a neighbouring wind farm Carrowleagh, which allows the Wind Farm to take advantage of existing access tracks and turbine delivery route. It is within a viable proximity to the existing Glenree – Moy 110kV overhead line. The Wind Farm Site also has excellent wind resources. Taking these aspects in to consideration, the Wind Farm Site was identified as a suitable location for the provision of a wind farm of the scale proposed.

Due to the Existing Permission and suitability of the Wind Farm Site, alternative locations for the Wind Farm Site were not considered further.

3.5.2 Alternative Hydrogen Plant Site Locations

During the site selection process, the Hydrogen Plant Site's impact on the environment, local communities and the landscape was given careful consideration. Key factors identified included:

- Proximity to the Firlough Wind Farm
- Availability of water for production
- Proximity to the national road network to limit the impact on the local public road network and its users

- The relative landscape and topography of the Hydrogen Plant Site in relation to sensitive receptors (including inhabited houses) to reduce the visual impact of the Hydrogen Plant
- Location of landscape sensitivity designations, scenic routes and viewpoints as defined by the County Development Plans of Sligo and Mayo
- Ground conditions and soils to avoid areas of deep peat
- Biodiversity considerations; Ecology of the Hydrogen Plant Site, proximity to conservation or protected areas
- Hydrological considerations including a 50 m buffer to water courses, consideration of private water supplies and ground water dependent terrestrial systems

It was considered optimal from an operations point of view that suitable sites for the Hydrogen Plant in immediate proximity to the Wind Farm would be preferred. Initially several locations within the Wind Farm Site were considered for the location of the Hydrogen Plant Site. Two were considered, between T6 and T7 and near the location of the Wind Farm Substation. The location near the Wind Farm Substation was selected due to the alternative being impractical in terms of access and the public being in the vicinity for peat cutting.

In February 2022, a letter drop along the local roads that hydrogen tube trailers would take to reach the national road network (N59) resulted in considerable feedback from local residents with concerns about the number of hydrogen tube trailers using these local roads during the operational phase of the Proposed Development.

As an alternative, a hydrogen depot on the N59 with a pipeline was considered but due to the high pressures required over a short distance this solution was commercially unviable. There was also concern from local communities regarding the disruption from construction of a hydrogen gas pipeline and the perceived negative health and safety implications.

It was concluded that transporting the green hydrogen between the Wind Farm Site and the National Road network was not a viable option. Therefore, it was considered that the Hydrogen Plant Site needed to move to a location in closer vicinity to the national road network but within a viable distance to connect to the Wind Farm Site with an under-ground Interconnector to transport electricity for the green hydrogen production process.

In total 13 potential sites were identified for the Hydrogen Plant Site (including at the Wind Farm), these are shown on **Figure 3.2.**

Of these, six were disregarded as unsuitable at an early stage due to various technical and commercial issues, for example overhead wires in close proximity, distance from the wind farm site making cabling financially prohibitive, right of way for access and size of available land, that made the locations unviable.

Six were considered further as reasonable alternatives against the assessment criteria outlined above.

These alternatives along with the original Wind Farm Site location are described below:

1. The Hydrogen Plant Site

A site of 6.5 ha currently an agricultural field used for grazing horses. It is located in County

Sligo in the townland of Carraun, adjacent to the Co. Mayo border, 6 km west of the Wind Farm Site and 0.6 km from the N59 national road. Site elevations range from 53 m OD at the north-west corner to 45 m OD along the southern boundary. It is 5.3 km north-west of the village of Bunnyconnellan (Co. Mayo) and 2.9 km south of the village of Corballa (Co. Sligo). The nearest large settlement is the town of Ballina (Co. Mayo.) 5.5 km to the southwest. It is located in a rural setting, set back from the clusters of ribbon development along the N59. Population density is 19 persons per km^2, much lower than the national average in Ireland of 72 persons per km^2. The principal land uses in the surrounding area is agricultural lands, individual dwellings, the N59 national primary road and commercial conifer plantations.

There are no natural watercourses on the site, the closest is 70 m south. This has a '"Good' Status and flows into the Moy Estuary. According to the Catchment Report issued by the EPA, no significant pressures were identified during the 3rd Cycle Draft Assessment. Furthermore, the River Waterbodies Risk is currently under review during this cycle assessment. Land underlying the site is comprised of peat bogs and surrounded by pastoral land, underlying subsoils have been classified as '(Carboniferous) Limestone tills (diamictons)' along with 'Cutover peat. It is underlain by an area classified as 'Moderately

Productive Bedrock (Ll)' with a vulnerability rating of 'High' Vulnerability. RSK Group Ltd was commissioned by the Developer to carry out a groundwater supply assessment for the water supply for the Hydrogen Plant. The report assessed the capacity of the ground water and rainwater harvesting to supply the Proposed Development with the required volume and quality of water without impacting nearby water supplies or the aquifer. The conclusion of the Ground Water Supply Assessment, that can be found in **Appendix 9.8**, was that the two boreholes can supply the expected water demand of

the Hydrogen Plant Site without materially impacting the aquifer or impacting the wells nearby.

In terms of landscape, this site is located in a "Normal Rural Landscape" in the Sligo County Development Plan 2017-2023 and adjacent to an area of "Sensitive Rural Landscape". There are no known archaeological monuments on the site, the closest is 0.6 km east on the N59 and is an unclarified Barrow.

2. Hydrogen site at the Wind Farm

This is a relatively flat site, ranging from 117 m O.D. to 121 m O.D., of 8.5 ha within the Wind Farm Site located where the proposed Wind Farm Temporary Construction Compound materials storage area is located. It is adjacent to cutover peatland and commercial forestry in the townland of Carrowleagh (Kilbride), Co. Mayo, in the lower northwestern foothills of the Ox Mountains. Bunnyconnellan (Co. Mayo) is 4 km to the southwest, Corballa 6.5 km (Co. Sligo) to the north-west, Culleens 7.5 km (Co. Sligo) to the north, Enniscrone (Co. Sligo) 11 km to the north. The nearest large settlement is the town of Ballina (Co. Mayo.) 12 km to the west. Population density in the surrounding area is generally very low, with 4.97 persons per km^2, the closest dwelling is 440 m to the southwest. The principal land use in the general area is comprised of a mix of peat bogs, agricultural lands, commercial forestry and the Carrowleagh Wind Farm and extension adjacent to the east and north-east. There is one order one watercourse running through the site, this has a "good" status and is not at risk of meeting Water Framework Directive (WFD) objectives. The groundwater is classed as a "Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones", the aquifer has a "good" status and is not at risk of meeting WFD objectives.

In terms of landscape, according to the Mayo Landscape Appraisal of County Mayo from the Mayo CDO 2022-2028, this site falls in to a Sensitive Area classed as "Peat bogs". The CDP states:

"*These areas have a distinctive, homogenous character, dominated by natural processes. Development in these areas has the potential to create impacts on the appearance and character of an extensive part of the landscape. Applications for development in these areas must demonstrate an awareness of these inherent limitations by having a very high standard of site selection, siting layout, selection of materials and finishes. Applications in these areas may also be required to consider ecological, archaeological, water quality and noise factors insofar as it affects the preservation of the amenities of the area*."

And:

"*These areas are indicative and prone to localised change over time where vegetative cover or agriculture management practices are the principal determinants.*"

It is in policy area 3, where industrial/commercial development, in the Landscape Sensitivity Matrix is considered to have medium potential to create adverse impacts on the existing landscape character area. There are no known archaeological monuments on the site, the closest is 0.8 km north and is a Megalithic court tomb.

3. Culleens

This is a flat, brownfield site of 1.78 ha located adjacent to the existing Hilltop Service Station on the N59 in the townland of Culleens, Co. Sligo at 84 m O.D. The area is currently used for storage and is generally underutilised. The site has direct access on to the N59 and has an artificial, hard standing surface. There are no watercourses on, or in the vicinity of the site, the closest is 500 m west. The groundwater is a regionally important aquifer, with a good status, not at risk of failing to meet WFD objectives. The wider area is classed as Agricultural Areas; Pastures, in the Corine 2018 index. There are blanket bogs 0.8 km to the east. The closest designated sites are the Ox Mountains Bogs Special Areas of Conservation and the Ox Mountains Bogs Proposed Natural Heritage Area 4.6 km to the east. It is located approximately 15 km northwest of Ballina, 7 km north of the Wind Farm Site and 5 km east of Enniscrone. The population density in the surrounding area is 24.56 persons per km^2 and the closest dwellings are 40 m south and 60 m west.

In terms of landscape, according to the Sligo County Development Plan 2017-2023, this is in in a "Normal Rural Area". These are considered generally to have the capacity to absorb a wide range of new development forms. There are no known archaeological monuments on the site, the closest is 0.4 km north and is a Megalithic wedge tomb.

4. Carra

This is a flat site of 5.56 ha, in the townland of Carha, County Mayo, 0.39 km east of the County Sligo border and 7.26 km northeast of Ballina. It is currently used for agricultural grazing and has an area of cutover peat in the western corner of the site. Initial visits suggest there is deep peat present in areas. The subsoils are classed as "cutover peat". There are three watercourses across the site, these have "good" status and are not at risk of meeting objectives in the WFD. The groundwater, classed as a "Locally important gravel aquifer" has a mixture of both high and medium aquifer vulnerability with a "good" status and is "not at risk" of meeting WFD objectives. The River Moy Special Area of Conservation is 1.25 km to the southwest, the site drains towards the west where watercourses connect to the SAC

3.28 km downstream.

The site is located 4 km west of the Wind Farm Site and 3.34 km along local roads to the N59. There is ribbon residential development and an equestrian centre along these local roads.

The wider area is largely classed as Agricultural Areas: Pastures, in the Corine 2018 index, with an area of peatland 0.33 km to the southwest. The population density in the surrounding area is 24.56 persons per km^2 and the closest dwellings are located 120 m to the west, there are several one-off dwellings surrounding the site on the west and north. In terms of landscape, according to the Mayo Landscape Appraisal of County Mayo from the Mayo CDO 2022-2028, this site falls into a Sensitive Area classed as "agricultural lands with significant natural vegetation". The CDP states:

"*These areas have a distinctive, homogenous character, dominated by natural processes. Development in these areas has the potential to create impacts on the appearance and character of an extensive part of the landscape. Applications for development in these areas must demonstrate an awareness of these inherent limitations by having a very high standard of site selection, siting layout, selection of materials and finishes. Applications in these areas may also be required to consider ecological, archaeological, water quality and noise factors insofar as it affects the preservation of the amenities of the area*."

And:

"*These areas are indicative and prone to localised change over time where vegetative cover or agriculture management practices are the principal determinants*."

It is in policy area 4, where industrial/commercial development, in the Landscape Sensitivity Matrix is considered to have low potential to create adverse impacts on the existing landscape character. There are no known archaeological monuments or sites on the site, the closest is an enclosure 0.5 km to the southeast. There is an area of forestry 0.27 km to the southeast and some sparse hedgerows on the northwest and southeast boundaries.

5. Shanaghy

This site is in a flat, low lying (18 m O.D.) agricultural field of 5.62 ha in the townland of Ardnaree, 200 m south of Ballina Golf Course. It is adjacent to a dwelling and farm buildings and is currently used for grazing. The next closest dwellings are 170 m to the

north. It is 2.07 km southeast of Ballina, Co. Mayo, the main centre for this region, population 10,171 (CSO 2022). The population density at the site 55.35 persons per km^2. It is 700 m southwest from regional road R294 which leads to the national road N59 in Ballina town. It is 10 km southwest of the Wind Farm Site.

The wider area is largely classed as Agricultural Areas: Pastures, in the Corine 2018 index. The wider land uses include the Ballina golf course, the urban area of Ballina, commercial forestry, agriculture and an area of peatbog 1.5 km southeast. There are no watercourses on the site. The closest is adjacent to the southeast corner of the site, this flows in a northeast direction, towards the River Moy Special Area of Conservation, the closest protected area, 550 m northeast of the site. The watercourse has a "good" status and is not at risk of meeting the WFD objectives. The bedrock aquifer is categorised as a regionally important, karstified aquifer and groundwater status is classed as "good" not at risk of meeting WFD objectives.

In terms of landscape this site is close to a "Vulnerable Area" in the Mayo Landscape Appraisal of County Mayo from the Mayo CDO 2022-2028, which broadly follows the route of the River Moy SAC. It is in policy area 4, where industrial/commercial development, in the Landscape Sensitivity Matrix is considered to have low potential to create adverse impacts on the existing landscape character. There are no archaeological sites or monuments on the site, the closest, an enclosure, is 700 m southeast.

6. Bunnyconnellan East

This is a large site with 465 ha of potential space, 1.4 km south of the Wind Farm Site, in the townlands of Bunnyconnellan East and Drumsheen, County Mayo, adjacent to the Sligo County border. It has undulating topography generally and includes a ridge in the southwest which peaks at 389 m O.D. and is part of the Ox Mountains. This ridge has a high susceptibility to landslides, and there are three previous landslide events in this area, the majority of the rest of the site has a low, or moderately low susceptibility. There is bedrock at the surface along the ridge and this is classed as moors and heathland in the Corrine 2018 index. It is 2.18 km west of the village of Bunnyconnellan, 10 km east of Ballina and 18 km west of Tobercurry. The site is located in Kilgarvin bogs, a cutover bog and location of the operational Bunnyconnellan Wind Farm. The habitats on site appear to include, wet and dry heath and blanket bogs, though significant areas are degraded due to peat cutting. There is a marked walking trail through the bog, part of the Kilgarvin loop and the Western

Way walking route. The site is 500 m east of the Windy Gap, a scenic area. Lough Hoe Bog Special Area of Conservation and Lough Hoe Bog Proposed Natural Heritage Area are adjacent to the east and south. The site drains towards the northwest, away from the SAC and pNHA. There are six order one watercourses, two order two water courses, two order three watercourses and a small lake on the site. There are also a number of non-mapped manmade drains in the cut over bog areas. All watercourses have a "good" status, and are not at risk of meeting the WFD objectives apart from one

in the northeast corner of the site which has a high status, and is considered at risk of meeting the WFD objectives for this watercourse which include retaining this high status. The bedrock aquifer is classed as

"Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones", with a

"good" status and not at risk of meeting the WFD objectives. The majority of the site has low and medium aquifer vulnerability with some areas of high vulnerability.

Land uses in the wider area include forested areas, agricultural pastures, peat bogs, areas of scrubland, a quarry adjacent to the west and the village of Bunnyconnellan, with a population of 188 in the 2016 census and location of the Bunnyconnellan agricultural show which attracts upwards of 30,000 visitors annually. The wider area is sparsely populated with a population density of 4.97 persons per km^2. The closest dwelling is 400 m to the northwest. Ribbon development occurs along the regional road R294, and local roads to the west of the site. There are no dwellings to the south and east and sparse ribbon development to the north.

The national road N17 is 18 km east along regional road R294 which is adjacent to the site. In terms of landscape, according to the Mayo Landscape Appraisal of County Mayo from the Mayo CDO 2022-2028, this site is close to a "Vulnerable Feature - Skylines" along the ridge and a designated scenic route traverses the site. It falls into a sensitive area classed as Peat Bogs. It is in policy area 3, where industrial/commercial development, in the Landscape Sensitivity Matrix is considered to have medium potential to create adverse impacts on the existing landscape character area. There is one "unclassified" registered archaeological site on the sites and monuments record on this site.

A comparison of the environmental impacts of these 5 options along with the original Wind Farm adjacent option is shown in **Table 3.2.**

Table 3.2: The Environmental impacts of the alternative locations of the Hydrogen Plant

Criteria	Hydrogen Plant Site adjacent to Wind Farm Site	Hydrogen Plant Site adjacent to national road network	Culleens	Carra	Shanaghy	Bunnyconnellan East
Population & Human Health (incl. Shadow Flicker)	Higher impact from disturbance, nuisance and dust emissions from additional road transport on local roads in proximity to inhabited houses and other sensitive receptors. Transportation of hydrogen by underground pipeline was also considered. However, it was found that the pressure required for the pipeline was not feasible over a short distance. There was concern from local communities regarding the disruption and perceived health and safety implications of a pipeline. Distance to inhabited dwelling circa 440 m.	Reduced negative impacts from vehicles on local roads in relation to hydrogen transport. Increased temporary disturbance due to construction of Interconnector. Distance to inhabited dwellings circa 300 m. Potential, though distant hydrological link to the River Moy SAC, potentially higher impacts to water quality could effect salmon populations and the fishing and tourism industry during the construction phase. Use of construction best practice, mitigation and monitoring reduces this impact to imperceptible.	Hydrogen produced close to the national road network so lower disturbance, nuisance and dust emission impacts to sensitive receptors along local roads. Increased temporary disturbance due to construction of Interconnector. Higher potential impacts to two dwellings located within 60 m of the site.	Higher impact from disturbance, nuisance and dust emissions from additional road transport on local roads in proximity to inhabited houses and other sensitive receptors. Increased temporary disturbance due to construction of Interconnector. Distance to inhabited dwellings circa 120 m. Potential hydrological link to the River Moy SAC downstream, potentially higher impacts to water quality could effect salmon populations and the fishing and tourism industry during the construction phase. Use of construction best practice, mitigation and monitoring reduces this impact to imperceptible. Potential higher impacts to the equestrian centre which is along the hydrogen transport route to the national road network.	Significantly higher number of sensitive receptors in proximity to the development, increases potential impacts from disturbance, nuisance and dust emissions during construction. Location close to Ballina means hydrogen transport during operation is likely to need to travel through Ballina town centre to reach the national road network which would cause unacceptably high impacts to traffic, disruption, nuisance, noise etc. Adjacent to closest dwelling. Increased temporary disturbance due to construction of Interconnector which would be the longest route of the options. The River Moy SAC is relatively close at approximately 550 m away, this could cause potentially higher impacts to water quality which could effect salmon populations and the fishing and tourism industry. Potentially higher disturbance to the golf club and impacts to tourism.	Very low population density results in a small number of sensitive receptors in close proximity. Close proximity to regional road reduces impacts on local roads, however, distance to national road network is great, potentially increasing impacts along the regional roads. If hydrogen is required to travel west, vehicles would need to go through both Bunnyconnellan village and Ballina town, creating a high number of sensitive receptors on the transport route. Potential higher impacts to tourism due to proximity to Bunnyconnellan show, a scenic route and potential short term impacts to walking routes during construction phase. Closest dwelling is 400 m.

Terrestrial Ecology	Footprint confined to one location, reduction in negative disturbance impacts to habitats. Production plant located on cutover bog which has little ecological value.	Additional site location of Hydrogen Plant Site and additional underground cabling causes more habitat loss and disturbance during construction. Hydrogen Plant Site now located on agricultural lands which has little ecological value.	Brown field site so reduction in impacts of habitat destruction and disturbance. Slight increase due to length of underground cabling required.	Additional site location of Hydrogen Plant Site and additional underground cabling causes more habitat loss and disturbance during construction. Impacts caused by loss of some peatland habitat, though this has been subject to historic peat cutting.	Additional site location of Hydrogen Plant Site and additional underground cabling causes more habitat loss and disturbance during construction. Lower impacts from habitat loss due to low ecological value of agricultural grassland habitat.	Additional site location of Hydrogen Plant Site and additional underground cabling causes more habitat loss and disturbance during construction. Impacts caused by loss of peatland habitat, though areas have been subject to historic peat cutting so habitat is degraded. Potential loss of other important habitats including wet and dry heath. Close proximity to intact peatland habitat which

Criteria	Hydrogen Plant Site adjacent to Wind Farm Site	Hydrogen Plant Site adjacent to national road network	Culleens	Carra	Shanaghy	Bunnyconnellan East
						could have high disturbance impacts during construction.
Aquatic Ecology	Single location for whole Proposed Development reduces number of watercourses in proximity potentially reducing risk to water quality. Higher potential negative impacts to peatland aquatic ecology due to Hydrogen Plant Site being located in closer proximity to peatland habitats.	Proposed Development spread over two sites potentially increases number of sensitive receptors. Potential for disruption to hydrology network due to ground works needed for cable route. Hydrogen Plant Site moved to undeveloped agricultural land rather than cutover bog reducing the hydrological risks to peatland aquatic ecology.	Proposed Development spread over two sites potentially increases number of sensitive receptors. There are no watercourses on the site which already has an artificial surface and there is a lower risk to water quality. Potential for disruption to hydrology network due to ground works needed for cable route. Site moved brownfield site rather than cutover bog reducing the hydrological risks to peatland aquatic ecology.	Proposed Development spread over two sites potentially increases number of sensitive receptors. Higher potential negative impacts to peatland aquatic ecology due to Hydrogen Plant Site being located in closer proximity to peatland habitats. Higher potential impacts due to possible connectivity with the River Moy SAC, designated for species that depend on high water quality including Whiteclawed Crayfish, Sea Lamprey, Salmon and Otter.	Proposed Development spread over two sites potentially increases number of sensitive receptors. Lower impact to peatland hydrology due to distance to large areas of intact peatland. Some smaller areas of peat soil on the site could be avoided to reduce impacts. Higher potential impacts due to proximity to the River Moy SAC, designated for species that depend on high water quality including White-clawed Crayfish, Sea Lamprey, Salmon and Otter.	Proposed Development spread over two sites potentially increases number of sensitive receptors. Higher potential negative impacts to peatland aquatic ecology due to Hydrogen Plant Site being located in closer proximity to intact peatland habitats. Highest number of watercourses on the site increases potential sensitive receptors. The nearby SAC is designated for White clawed Crayfish which depend on high water quality. Potentially high impacts could effect this species especially during the construction phase.

Ornithology	Single location for whole Proposed Development reduces impacts in terms of disturbance.	Splitting the Proposed Development over two locations increases potential habitat disturbance.	Splitting the Proposed Development over two locations increases potential habitat disturbance. However, the brownfield, nature of the site and due to it being regularly frequented by people there is unlikely to be a significant increase in impacts to birds.	Splitting the Proposed Development over two locations increases potential habitat disturbance.	Splitting the Proposed Development over two locations increases potential habitat disturbance.	Splitting the Proposed Development over two locations increases potential habitat disturbance.
Soils & Geology	Single location with shared access road slightly reduced impact to soils. Hydrogen Plant on Wind Farm Site increases footprint and peatland soil disturbance.	Additional access road to second site causes a small increase in land take and soil impact. Reduction in impact on peatland soils as Hydrogen plant located on agricultural land. Cable connection increases soil disturbance and excavation.	Reduction on impact to peatland soils as site is brownfield and further away from peatland. Cable connection increases soil disturbance and excavation.	Additional access road to second site causes a small increase in land take and soil impact. Hydrogen plant on peatland soils, potentially increasing negative impacts to surrounding peatland soils. Cable connection increases soil disturbance and excavation.	Lower impact to peatland hydrology due to distance to large areas of intact peatland. Some smaller areas of peat soil on the site could be avoided to reduce impacts. Longest cable connection route, increases soil disturbance and excavation.	Hydrogen plant on peatland soils, potentially increasing negative impacts to surrounding peatland soils. Cable connection increases soil disturbance and excavation, though impact lower than other remote site due to proximity to Wind Farm.
Hydrology & Hydrogeology	Hydrogen Plant Site is close to large area of cutover and degraded peatland. The	Located further from the large area of peatland with lower related risks of water	Located further from peatlands with lower related risks of water input requirements of the	Site is close to an area of cutover and intact peatland. The electrolyser requires water	Located further from the large area of peatland with lower related risks of water input	Hydrogen Plant Site is close to large area of intact peatland. There is an increased risk of

Criteria	Hydrogen Plant Site adjacent to Wind Farm Site	Hydrogen Plant Site adjacent to national road network	Culleens	Carra	Shanaghy	Bunnyconnellan East

	electrolyser requires water input to produce green hydrogen. There is an increased risk of impacting the peatland hydrology by having the water input required coming from groundwater close to the peatland which could potentially cause further degradation and further reduction in the likelihood of peatland restoration to a carbon sink.	input requirements of the Hydrogen Plant Site impacting peat hydrology. Aquifer has been shown to be able to sustainably supply water for the hydrogen production process without materially depleting the aquifer or having a detrimental impact on surrounding groundwater and soils. Over pumping of the well can potentially reduce groundwater levels in excess of seasonal fluctuation, however with continuous monitoring and management, the risk of adversely impacting on groundwater levels in the locality will be easily mitigated. There is a small degraded peatland area to the south of the Hydrogen Plant Site, this has been avoided and results from hydrology and hydrogeology impact assessment find that water abstraction will not impact the hydrology of this area.	Hydrogen Plant Site impacting peat hydrology.	input to produce green hydrogen. There is an increased risk of impacting the peatland hydrology by having the water input required coming from groundwater close to the peatland which could potentially cause further degradation and further reduction in the likelihood of peatland restoration to a carbon sink.	requirements of the Hydrogen Plant Site impacting peat hydrology. Proximity to River Moy SAC potentially increases impacts due to water abstraction.	impacting the peatland hydrology by having the water input required coming from groundwater close to the peatland which could potentially cause degradation and impact the peatland functionality as a carbon sink. This site has the highest number of watercourses on the site, higher risk of impacts to hydrology and hydrogeology. Increased risk of impacting water quality due to presence of water course that must retain "good" status.
Air & Climate	Higher negative impact of dust emissions locally due to road transportation increase. Increase in carbon payback time due to being located on peat soils.	Reduction in transportation vehicles; lower dust impact locally. Slight increase in carbon payback time due to increased soil excavation for underground cable.	Reduction in transportation vehicles, site is located directly on to national road network; lower dust impact locally. Slight reduction in carbon payback due to reduction in soils excavation due to brown field nature of site.	Higher negative impact of dust emissions locally due to road transportation increase. Increase in carbon payback time due to being located on peat soils and soil excavation for underground cable.	Increase in carbon payback time due to soil excavation for underground cable. Higher negative impact of dust emissions locally, due to road transportation increase and proximity to higher number of sensitive receptors in Ballina town.	Higher negative impact of dust emissions locally due to road transportation increase. Increase in carbon payback time due to being located on peat soils. Slight increase in carbon payback time due to soil excavation for underground cable.

Noise	Equal distance to sensitive noise receptors from Hydrogen Plant Site and mitigation by design makes impact neutral.	Equal distance to sensitive noise receptors from Hydrogen Plant Site and mitigation by design makes impact neutral.	Site is within 60 m, of dwellings, this has potentially unacceptably high noise impact on these receptors during the construction and operational phases of the development.	Site is within 120 m, of dwellings, this could potentially cause a high noise impact on these receptors during the construction and operational phases of the development.	Site is adjacent to dwellings and in close proximity to a golf club this has potentially unacceptably high noise impact on these receptors during the construction and	Significant distance to any sensitive receptors reduces noise impacts. Traffic on local roads and through Ballina Town Centre and Bunnyconnellan increases noise

Criteria	Hydrogen Plant Site adjacent to Wind Farm Site	Hydrogen Plant Site adjacent to national road network	Culleens	Carra	Shanaghy	Bunnyconnellan East
	Traffic on local roads increases noise impact on sensitive receptors.	Reduction in noise impact from local road traffic and no impact from pipeline.			operational phases of the development. Traffic on local roads and through Ballina Town Centre increases noise impact on a high number of sensitive receptors.	impact on a high number of sensitive receptors.
Landscape & Visual	Single location of project reduces visual impacts and screening of nearby forestry on the Wind Farm Site further reduces visual impact.	Hydrogen Plant Site as a separate location increases the number of sensitive receptors to the project, however the location, topography, building design and natural screening reduces visual impacts.	The site already includes development, however there are houses in close proximity, as well as the national road and the site has very little natural screening so the development would be clearly visible. This site is not close to scenic routes and is not considered in a sensitive landscape area.	Site is in a sensitive landscape area. Potentially high impact to landscape and visual due to close proximity to dwellings on multiple sides with little natural screening from vegetation or topography.	Potential higher impact landscape due to sensitive landscape area.	Lower number of sensitive receptors in the vicinity. However there are higher potential impacts on landscape and visual due to the proximity of a "vulnerable feature", a designated scenic route and walking trails within the site.
Material Assets	Loss of cutover peatland.	Loss of agricultural land at Hydrogen Plant Site.	The Hydrogen Plant could potentially economically benefit the service station adjacent to the site. There would be minimal change of land use as the area identified is underutilised at present.	Small loss of agricultural land at Hydrogen Plant Site.	Small loss of agricultural land at Hydrogen Plant Site. Potential impact to sensitive and productive fisheries due to proximity to River Moy SAC.	Adjacent to existing wind farm, substation and over-head line cabling route needs to be carefully managed to ensure capacity in road and existing cabling is not impacted.
Cultural Heritage	Neutral	Neutral	Neutral	Neutral	Neutral	Potential higher impacts to archaeological site on the site.

Traffic and Transport	Higher negative impact on local roads during operational period. The Developer commissioned the route analysis report outlined in **Appendix 15.1**. The finding of this report was that transporting the green hydrogen by road from the Wind Farm Site Hydrogen Plant to the N59 road was not viable.	Significantly lower impact during operational phase of Proposed Development on local communities.	Significantly lower impact during operational phase of Proposed Development on local communities due to direct access to the national road network.	Higher negative impact on local roads during operational period.	Higher negative impact on local roads and high number of sensitive receptors in Ballina town during operational period.	Higher negative impact on regional roads and high number of sensitive receptors in Ballina town and Bunnyconnellan village during operational period.
Major Accidents and Natural Disasters	Hydrogen Plant Site remains at safe distance from inhabited houses, areas of high public use and outside of environmentally sensitive areas or areas of	Hydrogen Plant Site remains at safe distance from inhabited houses, areas of high public use and outside of environmentally sensitive areas or areas of geological	Potential increase in risks to people frequenting the service station and in adjacent dwellings due to proximity to the plant.	Potential increase in risks to dwellings due to proximity to the plant.	Potential increase in risks to dwellings due to proximity to the plant.	Hydrogen Plant Site remains at safe distance from inhabited houses, areas of high public use and outside of environmentally sensitive areas and flood risk,

Criteria	Hydrogen Plant Site adjacent to Wind Farm Site	Hydrogen Plant Site adjacent to national road network	Culleens	Carra	Shanaghy	Bunnyconnellan East
	geological instability and flood risk, neutral impact to Natural Disasters and Major Accidents.	instability and flood risk, neutral impact to Natural Disasters and Major Accidents.			Potential cumulative impacts with Upper Tier Seveso Site 1.6 km northwest.	neutral impact to Natural Disasters and Major Accidents. This site however has areas of high landslide susceptibility. Though these areas would be avoided, there still remains a potential risk to the development.

The Hydrogen Plant Site was selected based on its proximity to the national road network and the positive results of a road assessment report, feedback from the HSA and the site being a safe distance from inhabited houses, with appropriate setback distances to sensitive receptors and avoidance of densely populated areas and areas of high public use including amenities such as walking trails. The location avoids ecologically protected areas and high value habitats including peatland. It is outside of areas of geological instability and flood risk. It has a sustainable water source, and the location has lower impacts to water quality, hydrology and hydrogeology than the alternatives considered. It is a viable cabling distance to the Wind Farm Site and lower than some of the alternatives considered, which reduces the number of sensitive receptors along the route and soil disturbance during construction.

The location provides natural screening and avoids impacts to cultural heritage sites.

3.5.2.1 Suitability of the Hydrogen Plant Site

The Hydrogen Plant Site is located in County Sligo. The Sligo County Development Plan (CDP) 2017-2023 is the current, adopted plan. Stimulating the economy and generating employment are important aspects of the plan. Climate change is addressed, and the plan highlights the County Council's responsibility to implement measures to aid the transition to a low carbon economy and society, including increasing the use of renewable energy in line with regional and national policy. The Hydrogen Plant Site is designated as a "Normal Rural Landscape" in the Sligo CDP, which are defined as:

"Areas with natural features (e.g. topography, vegetation) which generally have the capacity to absorb a wide range of new development forms – these are largely farming areas and cover most of the County. At the same time, certain areas located within normal rural landscapes may have superior visual qualities, due to their specific topography, vegetation pattern, the presence of traditional farming or residential structures. These areas may have limited capacity for development or may be able to absorb new development only if it is designed to integrate seamlessly with the existing environment."

The Hydrogen Plant Site is adjacent to an area of "Sensitive Rural Landscape" designated in the Sligo CDP, this area has been avoided including a buffer zone to minimize negative impacts.

The Sligo CDP does not mention hydrogen specifically, however it does contain a section pertaining to the "Major Accidents Directive (Seveso III)" it states:
"This development plan does not designate sites or zones for uses that might be classified as Seveso establishments and no such establishments exist at present. However, such uses will not be permitted in the vicinity of houses, places of concentrated public use or in environmentally sensitive areas and designated conservation areas."

The Hydrogen Plant Site, under advice from the HSA (details located in **Chapter 1: Introduction, Section 1.10.2**), comes under the lower tier of SEVESO. It is not located in the vicinity of houses (closest inhabited house is 299 m to the north), areas of concentrated public use (Castleconnor community centre 2.2 km, to the north) or in any environmentally sensitive or designated areas (River Moy SAC, 2.5 km to the south).

The Hydrogen Plant Site is within connection distance to the Wind Farm Site using an underground cable (the Interconnector). There are no sensitive aquatic or terrestrial receptors in the vicinity of the Hydrogen Plant Site.

The Hydrogen Plant Site is located on agricultural lands currently used for horse grazing and has low ecological value. There is some natural screening from the topography and vegetation already in place and the set back of approximately 600 m from the main road.

Hydrological testing at the Hydrogen Plant Site found that water extraction using two boreholes is sufficient to supply the expected water demand of the Hydrogen Plant Site without materially depleting the aquifer or impacting the wells nearby.

The Hydrogen Plant Site is located in a rural setting, set back from the clusters of ribbon development along the N59. Population density is 19 persons per km^2, much lower than the national average in Ireland of 72 persons per km^2. There are 22 inhabited houses within one km of the Hydrogen Plant Site and the closest inhabited house is 299 m to the northeast.

3.6 ALTERNATIVE RENEWABLE ENERGY TECHNOLOGIES

An alternative source of renewable energy considered for the Wind Farm Site was solar energy. Commercial solar energy production is the harnessing and conversion of sunlight into electricity using photovoltaic arrays (panels). The capacity factor of solar energy is significantly lower than that of wind energy, requiring approximately three times the installed capacity of the Wind Farm (i.e., 3 x 78 MW = 234 MW) to produce the same amount of energy. Solar farms require one hectare per MW, the land area required would be in the region of 234 hectares. This compares to a footprint of circa 30 ha for the 13 no. proposed turbines and infrastructure.

Table 3.3 outlines the potential impact from the development of a solar photovoltaic array when compare against the Firlough Wind Farm.

Table 3.3: Environmental Effects from a Solar Photovoltaic Array compared to a Wind Farm Development

Criteria	Solar Alternative	Firlough Wind Farm

Population & Human Health (incl. Shadow Flicker)	No potential for shadow flicker to affect sensitive receptors. Potential for glint and glare impacts on local road users.	Potential for shadow flicker, though no glint and glare impacts.
Terrestrial Ecology	Larger footprint would result in greater habitat loss.	Lower footprint reduces habitat loss.
Aquatic Ecology	Larger footprint would result in greater impact to water quality and aquatic ecology with increased runoff.	Lower footprint reduces impact.
Ornithology	Potential for mimicry of sensory cues i.e., glint and glare similar to water. Decrease in the risk of bird collisions without moving turbine blades.	Reduced risk of glint and glare, increased collision risk to birds.
Soils & Geology	Larger footprint would result in wider spread impact to soils. Shallower excavations involved in solar PV array development would decrease the potential for peat instability.	Smaller footprint results in smaller areas of peat soils impacted. Deeper requirements for turbine foundations increases peat instability risk.
Hydrology & Hydrogeology	A solar PV array development would require a larger footprint therefore increasing the potential for silt laden runoff to enter receiving watercourses.	Lower footprint reduces impact.
Air & Climate	Solar energy requires less steel and less concrete than wind energy; Concrete c. 60 tonnes per MW (234 MW installed capacity=14,203 t).	Wind energy requires more steel and more concrete than solar energy; Concrete between 240 and 413 tonnes per MW (78 MW installed capacity= between 18,993 and 32,214 t).
Criteria	**Solar Alternative**	**Firlough Wind Farm**

	Steel c. 67.9 tonnes per MW[86] (234 MW installed capacity=15,888). These have a high embodied carbon value. Despite requiring a larger installed capacity to achieve the same output, the volume of steel and concrete required and related embodied carbon for solar panels would be lower. It therefore has a shorter carbon payback time.	Steel between 107 and 132 tonnes per MW[87] (78 MW installed capacity= between 8,346 and 10,296 t) These have a high embodied carbon content. Despite requiring a lower installed capacity to achieve the same output, the volume of steel and concrete required and the related embodied carbon for wind turbines would be higher. It therefore has a longer carbon payback time.
Noise	No potential for noise impacts on nearby sensitive receptors during operational phase.	Higher impact of noise impacts from turbines during operational phase.
Material Assets	The larger footprint will have a greater impact on the land use (peat harvesting, forestry and agriculture).	Lower footprint reduces impact.
Landscape & Visual	Potentially less visible from surrounding area due to screening from forestry and topography.	Higher visibility impact.
Cultural Heritage	Larger footprint would result in a bigger impact on undiscovered cultural artifacts.	Lower footprint reduces impact.
Traffic & Transport	Potential for greater traffic volumes during construction phase due to the number of solar panels required to achieve the same output.	Fewer deliveries will be made, however due to the size of turbine components potential for higher impacts to road widening requirements.

[86] EU. (2020). Raw materials demand for wind and solar PV technologies in the transition towards a decarbonised energy system. https://op.europa.eu/en/publication-detail/-/publication/19aae047-7f88-11ea-aea8-01aa75ed71a1/language-en
[87] EU. (2020). Raw materials demand for wind and solar PV technologies in the transition towards a decarbonised energy system. https://op.europa.eu/en/publication-detail/-/publication/19aae047-7f88-11ea-aea8-01aa75ed71a1/language-en

Major Accidents and Natural Disasters	Lower risks associated with poor weather and ground stability. Higher risk from fire and electrical faults.	Higher risks associated with the impacts of poor weather on turbines and ground stability due to foundation depths. However, these risks are well understood and turbine design, sensors and good practice reduce these risks.

In considering alternative renewable energy technologies, the plan area land requirement of 234 ha for the solar energy alternative for an equivalent output from a 78 MW wind farm was considered not sustainable when compared to the circa 30 ha plan area requirement for the Wind Farm.

3.7 HYDROGEN PLANT

The Existing Permission and originally designed project did not include a green hydrogen element. To harness the Proposed Development's full potential to generate renewable energy, a hydrogen element was included during the design process. The production of green hydrogen creates zero carbon emissions and enhances the output potential of the Wind Farm and its contribution to renewable energy and climate targets for Ireland. This hydrogen can be utilised as a fuel which can benefit Ireland's economy and energy security and can be used to displace fossil fuels in hard to abate sectors giving further climate benefits. The environmental impacts of an alternative development design without the hydrogen element compared to the development design with the hydrogen element is shown in **Table 3.4**.

Table 3.4: The environmental impacts of an alternative development design without the hydrogen element compared to the development design with the hydrogen element

Criteria	Alternative Process; No Hydrogen Plant	Firlough Wind Farm Co-location with Hydrogen Plant

Population & Human Health	No addition of hydrogen skills or employment to the region. No impetus for hydrogen-based enterprise to locate in the region. No growth of green hydrogen transport and industry sectors and no related improvements to air quality. No further increases to energy security. No water element to Proposed Development so no potential impact on aquifer or wells nearby.	Increased positive impacts; Addition of hydrogen skills and employment opportunities, transportation jobs and potential of attracting hydrogenbased enterprise to the region. Growth of zero emissions green hydrogen use in transport and industry sectors, reduction in emissions and related improvement of air quality. Green hydrogen improves energy security and reduces constraint and curtailment of the Wind Farm, maximising the renewable energy that can be produced. Hydrogen production requires a water supply with potential impacts to the local aquifer. However, analysis of data collected shows that water required can be sourced sustainably with no negative impacts to the

Criteria	Alternative Process; No Hydrogen Plant	Firlough Wind Farm Co-location with Hydrogen Plant

		aquifer and nearby wells. Rainwater harvesting will be utilised to reduce reliance on groundwater. Waste water from the water treatment processes is also produced by the Hydrogen Plant. The water treatment process, controlled discharge and assimilative capacity of the receiving waters will mitigate any risks of contamination which could impact human health. Chapter 9 Hydrology and Hydrogeology assesses the impacts of this. It is not anticipated that there will be any air pollution or hazardous emissions generated by the Hydrogen Plant Site which could impact human health. The only atmospheric emission to be emitted from the electrolysis process will be oxygen produced as a biproduct of the green hydrogen production. Oxygen is not considered a pollutant or dangerous to human health by either the Air Quality Standard Regulations 2011, WHO, EPA or the CAFE Directive (Directive 2008/50/EC). The noise assessment for the Hydrogen Plant found that the maximum predicted noise levels are well within the noise limits for areas of low background as recommended by the EPA's NG4 for day, evening and nigh-time, these are well below levels that could impact human health. In terms of Major Accidents and Natural Disasters, hydrogen has a proven safety track record as a fuel for more than 100 years worldwide. Producing hydrogen from water is a

		well-established and safe technology. As with all fuels, the production and handling of hydrogen has an inherent degree of risk. Whilst some properties of hydrogen make it safer than other fuels, there is still a requirement to adopt controls and best practice to ensure safety. Health

Criteria	Alternative Process; No Hydrogen Plant	Firlough Wind Farm Co-location with Hydrogen Plant
		and Safety has been a key consideration in the design of the Hydrogen Plant, and the approach has incorporated good practice principles such as inherently safer design, the hierarchy of controls and safety standards. Chapter 16 Major Accidents and Natural Disasters provides a full assessment.
Terrestrial Ecology	Smaller footprint has a lower impact to habitat loss and disturbance.	Larger footprint will result in greater habitat loss and disturbance.
Aquatic Ecology	Smaller footprint has a lower potential impact to water quality through run off. Zero requirement for water input or output so lower potential impact to aquatic ecology.	Larger footprint will result in greater potential impact to water quality through run off. Wastewater from hydrogen production potentially poses a risk to aquatic ecology. The water treatment process, controlled discharge and assimilative capacity of the receiving waters will mitigate risks to water quality which could aquatic biology. **Chapter 9: Hydrology and Hydrogeology** and **Chapter 6: Aquatic Ecology** assesses the impacts of this.
Ornithology	Smaller footprint, lower potential impact to bird habitat.	Larger footprint will result in greater habitat loss which could impact bird habitat.
Soils & Geology	Smaller footprint results in a lower potential impact to soils.	Larger footprint would result in greater volumes of peat and spoil to be excavated and stored, having a higher potential impact to soils.

Hydrology & Hydrogeology	Smaller footprint results in a lower potential impact to hydrology and hydrogeology. No requirement for water abstraction or discharge.	Larger footprint increases the potential for silt laden runoff to enter receiving watercourses. Site investigations and the conclusion of the Ground Water Supply Assessment found that the ground water extraction from two boreholes was sufficient to supply the expected water demand of the Hydrogen Plant Site without depleting the aquifer or impacting the wells nearby. Rainwater harvesting will be utilised to reduce the reliance

Criteria	Alternative Process; No Hydrogen Plant	Firlough Wind Farm Co-location with Hydrogen Plant
		on groundwater for the production of green hydrogen. A waste water treatment system and ongoing monitoring will minimise impacts of wastewater on the receiving environment. This process is in line with EPA guidelines. Displacement of fossil fuel transport and industry emissions improves water quality on a wider scale.

Air & Climate	Due to the continued use of fossil fuels in electricity production, the Wind Farm alone results in a faster carbon payback period and higher carbon displacement. The Wind Farm alone would displace between 2 and 2.5 million tonnes of CO_2 over the proposed 40 year lifetime of the Project. However, as fossil fuels are phased out of electricity production, the displacement of carbon of the Wind Farm Reduces. Wind energy produced when the grid is at capacity is wasted instead of being captured. No energy storage available at the Proposed Development. No production of zero emissions fuel for transportation sector, heating or industry. Loss off carbon offsetting in these hard to abate sectors.	Maximum production of 31 tonnes of zero emissions green hydrogen per day to displace fossil fuels to be used in transport, heating or industry. Over 40 years, the Hydrogen Plant and Wind Farm would displace between 1.7 and 2.4 million tonnes of CO_2. In addition, by displacing diesel vehicles the green hydrogen also displaces 835 to 30,759 kg of NOx and 84 to 669 kg of PM per year, further improving air quality. Contribution to hydrogen specific targets laid out in Ireland's Climate Action Plan 2023 and European Hydrogen Strategy. Improved energy security by addition of new type of locally produced renewable energy. Improved energy efficiency of wind farm, less of Co. Mayo's wind resources wasted and impacts of curtailment of wind energy reduced. Provision of energy storage.
Noise	Lower impact of noise impacts to sensitive receptors.	Increased number of potential sensitive receptors impacted by the presence of the Hydrogen Plant Site. However, the noise addition is low and the equipment will be housed in suitable structures and/or designed to minimise the impact.
Material Assets	Lower land take without Hydrogen element.	Higher impact of land take with addition of Hydrogen Plant Site.
Criteria	**Alternative Process; No Hydrogen Plant**	**Firlough Wind Farm Co-location with Hydrogen Plant**

Landscape & Visual	Reduced number of potential sensitive visual receptors without hydrogen production plant.	Additional potential sensitive receptors and increased landscape and visual impact. However, the Hydrogen Plant Site has been designed to look like a large agricultural shed, screening, landscaping, planting and the natural topography of the Hydrogen Plant Site reduces visual impacts.
Cultural Heritage	Reduced footprint means lower risk of impact to undiscovered cultural artifacts.	Larger footprint would result in a bigger impact on undiscovered cultural artifacts.
Traffic and Transport	No increase of hydrogen transportation trucks on national road network.	Higher impact from hydrogen transportation via tube-trailers. This is assessed in **Chapter 15: Traffic and Transport** which finds that during the operational phase of the Hydrogen Plant a maximum of 26 HGVs plus 10 light vehicles will access the Hydrogen Plant each day.
Major Accidents and Natural Disasters	Reduced risks from additional construction site. Reduce operational risks of Major Accidents and Natural Disasters.	Increased construction risk due to second construction site. Increased operational risk of Major Accidents and Natural Disasters. However, the Hydrogen Plant Site will adhere to all HSA requirements, including COMAH. In addition, the facility will be constructed and operated in accordance with applicable design standards and operational processes. To date, a Preliminary Hazard Analysis, Major Accidents Prevention Policy and Quantitative Risk Assessment have been completed and shared with the HSA. The Safety Management Plan outlines the tasks to be completed throughout the project lifecycle to help identify, avoid and mitigate hazards.

The pressing, urgent need to address climate change and reach renewable energy and emissions reductions targets, the grid constraints in the region, the need to address impacts to energy security from the Russian invasion of Ukraine and the proposed amendment to the Renewable Energy Directive to assume renewable energy is of overriding public interest means that the addition of the Hydrogen Plant Site offers the opportunity for an overall more positive impact. This is not withstanding the larger footprint and use of water as natural resource and production of waste water, the addition of the Hydrogen Plant Site will increase the indirect positive impacts that reducing emissions and displacing fossil fuels have on wider biodiversity, ecosystem resilience and climate change mitigation. During the EIAR process, as any adverse affects of the Hydrogen Plant have been identified, these have been eliminated or mitigated as part of the design process.

3.8 ALTERNATIVE TURBINE NUMBERS AND MODEL

The Existing Permission included 21 wind turbines with a tip height of 120.5 m and rotor diameter of 71 m. A comparison of the proposed Firlough Wind Farm and the Existing Permission is outlined in **Table 3.5.**

Table 3.5: Comparative Table of Existing Permssion and Proposed Wind Farm

	Existing Permission	Proposed Firlough Wind Farm
No. of WTGs	21	13
Turbine	c. 2.3 MW	c.5-6 MW
Rotor Ø	71 m	149 m to 155 m
Tip Height	120.5 m	177 m to 185 m
Capacity	c.48 MW	c. 65 - 78 MW

It was considered at an early stage to retain the originally permitted wind turbine density. However, developments in wind turbine design and efficiency enabled consideration of a redesign which uses fewer, taller wind turbines. This improves energy efficiency, increasing the output to the grid per wind turbine and reducing the cost of energy to the consumer. A higher number of smaller wind turbines would require a larger footprint and larger land take, potentially leading to additional environmental impacts. It was considered that the smaller number of taller wind turbines would have a lower visual impact compared to the impact of a higher number of smaller wind turbines. Utilising fewer, taller wind turbines with a greater output is in line with industry trends. An outline of recent examples of consented wind farms which include taller wind turbines can be found in **Table 3.6.**

Table 3.6: Recently Permitted Wind Farms with Tall Turbines

Name	Location	No of Turbines	Tip height	Planning reference
Coole Wind Farm	Co. Westmeath	13	175 m	ABP ref. PL25M.300686
Ardderroo Wind Farm	Co. Galway	25	178.5 m	ABP ref. PL07.303086
Derryadd Wind Farm	Co. Armagh	24	185 m	ABP ref. PA14.303592
Derrinlough Wind Farm	Co. Offaly	21	185 m	ABP ref. PA19.306706
Oweninny Wind Farm	Co. Mayo	61	176 m	ABP ref. PA16.PA0029

A comparison of the potential environmental impacts of the installation of a larger number of smaller wind turbines compared to the option of installing a smaller number of larger wind turbines is presented in **Table 3.7**.

Table 3.7: Comparative table of the Environmental impacts of the Existing Permission and the proposed Firlough Wind Farm.

Criteria	Permitted Development; 21 smaller turbines	Proposed Firlough Wind Farm; 13 larger turbines
Population & Human Health (incl. Shadow Flicker)	Greater potential for shadow flicker impact on nearby sensitive receptors.	Lower potential for shadow flicker with fewer turbines.
Terrestrial Ecology	Larger footprint would result in greater habitat loss and bigger impact to biodiversity. The number of turbines is the main factor in relation to the impact to bat mortality[88]. A	Lower footprint reduces impact. A smaller number of turbines reduces the impact to bats.

[88] DEFRA. (2016). Understand the Risks to Bat Populations Posed By Wind Turbines. https://randd.defra.gov.uk/ProjectDetails?ProjectID=16734&FromSearch=Y&Status=3&Publisher=1&SearchText=wc0753&SortString=ProjectCode&SortOrder=Asc&Paging=10%20-%20Description

	higher number of turbines increases impact on bats.	
Aquatic Ecology	Larger footprint would result in greater impact to water quality and aquatic ecology.	Lower footprint reduces impact.

Criteria	Permitted Development; 21 smaller turbines	Proposed Firlough Wind Farm; 13 larger turbines
Ornithology	The presence of more turbines would increase the potential collision risk for birds.	Fewer wind turbines reduce potential collision risk for birds. Larger wind turbines spin more slowly reducing impact to birds.
Soils & Geology	Larger footprint would result in greater volumes of peat and spoil to be excavated and managed.	Lower footprint reduces impact.
Hydrology & Hydrogeology	Larger footprint increases the potential for silt laden runoff to enter receiving watercourses.	Lower footprint reduces impact.
Air & Climate	Increased potential for vehicle emissions and dust emissions due to an increased volume of construction material and turbine component deliveries to the Wind Farm Site. Lower output increases carbon payback period and lowers contribution to climate targets.	Lower impact from delivery vehicles due to reduced number of turbines. Higher output means faster carbon payback period and higher contribution to climate targets.
Noise	Potential for increased noise impacts on nearby sensitive receptors.	Reduced noise impacts to nearby sensitive receptors.

Material Assets	Potential for increased impact on existing telecommunication links traversing the Wind Farm Site.	Reduced impact.
Landscape & Visual	It was considered that the higher number of smaller wind turbines would have a higher visual impact compared to the lower number of larger wind turbines.	It was considered that the smaller number of higher wind turbines would have a lower visual impact compared to the impact of a higher number of smaller wind turbines.
Cultural Heritage	Larger footprint would increase the potential for impacts on unrecorded, subsurface archaeology.	Lower footprint reduces impact.
Traffic and Transport	Potential for greater traffic volumes during construction phase due to larger footprint and requirement for more construction materials and wind turbine components.	Lower footprint reduces impact. Larger wind turbine components have a higher potential for disruption along haul route.
Criteria	**Permitted Development; 21 smaller turbines**	**Proposed Firlough Wind Farm; 13 larger turbines**
Major Accidents and Natural Disasters	Extended construction period increases construction accident risks.	Shorter construction period reduces construction risks.

Fewer, but taller turbines were selected for the final design due to the lower overall footprint and associated reduced environmental impacts to biodiversity, hydrology and hydrogeology, soils and geology, the reduced visual and shadow flicker impacts and better energy efficiency leading to more positive impacts in terms of climate change mitigation and energy security than with a higher number of smaller turbines.

3.9 ALTERNATIVE LAYOUT DESIGNS

The layout and design of the Wind Farm Site and the Hydrogen Plant Site were an iterative process which followed the constraints-led design approach. The constraints-led design approach consists of the identification of environmental sensitivities within the Proposed Development by the design team with a view to identifying suitable areas in which wind turbines may be located. The resulting area is known as the 'Developable Area'. The wind turbine layout is discussed in **Section 3.9.1** and Hydrogen Plant Site layout in **Section**

3.9.4.

The design and layout of the Wind Farm Site follows the recommendations and industry guidelines set out in the 'Wind Energy Development Guidelines' (Department of the Environment, Heritage and Local Government, 2006), 'Best Practice Guidelines for the Irish Wind Energy Industry' (Irish Wind Energy Association, 2012) and the Draft Revised Wind Energy Development Guidelines, December 2019.

The constraints identification process included the gathering of information through detailed desk-based assessments, field surveys and consultation. Sensitive receptors were mapped and the design constraints were applied. Setback buffers were placed around different types of constraints to clearly identify the areas within which no development works will take place. The size of the buffer zone for each constraint for the Wind Farm Site and Hydrogen Plant Site has been assigned using guidance presented in the Department of the Environment, Heritage and Local Government Wind Energy Guidelines (DoEHLG, 2006) and other relevant Best Practice standards, which are identified in each chapter of this EIAR. The proposed set-backs comply with the Draft Wind Energy Guidelines 2019 requirements.

The constraints map for the Wind Farm Site, as shown in **Figure 3.3** encompasses the following constraints and associated buffers:

- 740 m buffer of residential inhabited houses (exceeding the requirement for a four times tip height separation distance from the curtilage of properties in line with the new draft guidelines). There is one inhabited house located within 740 m of the turbines (4 x maximum tip height), which is located 710 m from T3. The owner and occupier of this house is financially involved in the project and has provided written agreement accepting the reduced setback distance and has no objection to the proposed wind energy development.
- Operator specific buffer of Telecommunication Links
- 50 m buffer of Watercourses (25 m to manmade drains)
- 100 m buffer of Archaeological Sites or Monuments
- Peat and slope stability were also taken into account and areas with steep gradients or with potential for peat slippage were discounted from the Developable Area • The use of cutaway areas rather than intact peatland

This demonstrates the avoidance of significant impacts on the receiving environment through mitigation by design.

The Wind Farm Site and the Hydrogen Plant Site layout designs build on the existing site characteristics and include the following:

- Available lands for development

- Distance from designated sites
- Avoidance of environmental constraints identified from desk studies • Use of existing roads where possible to reduce footprint

In addition, the Wind Farm Site layout builds on the following:

- Separation distance from landowners not involved in the Firlough Wind Farm
- Good wind resource
- Distance to neighbouring wind turbines
- Existing access points and general accessibility of all areas of the Wind Farm Site due to existing road infrastructure

In addition, the Hydrogen Plant Site layout builds on the following:

- Avoidance of Sensitive Rural Landscape to the south of the site
- Separation distance from dwellings

The inclusion of the constraints for the Wind Farm Site on a map of the study area allowed for a viable developable area for the Firlough Wind Farm to be identified. An initial turbine layout was then developed to take account of all the constraints mentioned above and their associated buffer zones and the separation distance required between the turbines.

Following the mapping of all known constraints for the Wind Farm Site and the Hydrogen Plant Site, detailed site investigations were carried out by the project team. The ecological assessments encompassed habitat mapping and extensive surveying of birds and other fauna.

Similarly, the hydrological and geotechnical investigations informed the proposed locations for wind turbines, roads, the Hydrogen Plant and other components of the Proposed Development, such as the Wind Farm Substation and the Wind Farm Site Temporary Construction Compound and Hydrogen Plant Site Temporary Construction Compound. This included peat depth and peat stability analysis and the identification of watercourses, groundwater constraints, flood risk and wells.

Existing access points and general accessibility of all areas of the Proposed Development due to existing road infrastructure were considered in Hydrogen Plant layout and the placing of wind turbines to avoid locating elements on uncut areas of bog.

In relation to the Wind Farm Site, where specific areas were deemed as being unsuitable (e.g., unstable peat) for the siting of wind turbines or roads, etc., alternative locations were proposed and assessed, taking into account the areas that were already ruled out of consideration. The wind turbine layout for the Firlough Wind Farm has also been informed by

wind data which has been collected from an on-site meteorological mast and the results of noise assessments as they became available.

3.9.1 Wind Turbine Layout

Alternative wind turbine layouts were considered, and the final turbine layout of the Wind Farm takes account of all site constraints and the distances to be maintained between wind turbines and from houses, roads, etc. The layout is based on the results of all site investigations that have been carried out during the EIAR process.

The selection of wind turbine numbers and layout has had regard to wind-take by siting the wind turbines to achieve optimal performance (three times the rotor diameter (3d) in the crosswind direction and seven times the rotor diameter (7d) in the prevailing downwind direction), noise by ensuring no wind turbines are constructed in a location that would lead to noise impacts, shadow flicker by maintaining a 740 m buffer from sensitive receptors and when the control system detects that the sunlight is strong enough to cast a shadow, and the shadow falls on a property or properties, then the turbine will automatically shut down.) The EIAR and wind farm design process was an iterative process. As information regarding the Wind Farm Site was compiled and assessed, the number of wind turbines and the proposed layouts have been revised and amended to take account of the physical constraints of the Wind Farm Site. The requirement for buffer zones and other areas in which no wind turbines could be located was also compiled and assessed. Findings at each stage of the assessment were used to further refine the design, always with the intention of minimising the potential for environmental impacts.

The resulting final wind farm layout has been achieved following feedback from the various studies and assessments carried out as well as ongoing negotiations and discussions with landowners and the local community. The specific locations of the various wind turbines were reviewed during the optimisation of the Wind Farm layout. This was achieved by strictly adhering to the developable area for the location of the wind turbines and avoiding known constraints for the Firlough Wind Farm infrastructure.

Preliminary Layouts

The initial constraints study identified a significant viable area within the overall study area, suitable for approximately 15 no. wind turbines.

The initial wind turbine layout, shown in **Figure 3.4** occupied the viable area within the wider study area.

The proposed wind turbine layout was refined following feedback from the project team and the Developer and to take account of the environmental and technical constraints set out above. The number of wind turbines was reduced, and turbines were moved further from the

eastern boundary of the Wind Farm Site and to the south due to the adjoining, Carrowleagh Wind Farm in line with the draft wind development guidelines. Turbines were also moved further from residential inhabited houses to the west and moved to increase the set back distance to the megalithic tomb in the southwest of the Wind Farm Site. The second iteration of the wind turbine layout, shown in **Figure 3.5**, considered a 12 no. wind turbine layout taking these constraints in to account.

The third and final iteration is the proposed layout and involved repositioning all wind turbine locations to achieve greater separation distances between wind turbines and to increase inter wind turbine spacing. It also included the addition of a wind turbine to bring the total to 13 no. wind turbines. Due to the proximity of the Ox Mountains Bogs SAC and the higher quality of the bog habitat in the south of the Wind Farm Site, wind turbines were moved out of this area.

The chosen wind turbine layout is considered optimal as it lessens the potential for environmental effects. This layout is clear and simple incorporating a degree of symmetry and order. The layout thus represents the most visually sympathetic arrangement possible for a viable wind energy development. This layout takes account of all Wind Farm Site constraints (e.g. ecology, ornithology, hydrology, peat depths etc.) and design constraints (e.g. setback distances from houses and third party lands/infrastructure and distances between turbines on-site etc.). The layout as presented in **Figure 3.6** also takes account of the results of all site investigations and baseline assessments that have been carried out during the EIAR process.

A comparison of the potential environmental effects of the layout as presented in the initial, first and second iterations when compared against the final layout, (Iteration Three), are presented in **Table 3.8.**

Table 3.8: Environmental effects from first and second layout iteration compared to the final layout (Iteration Three).

Criteria	Design iteration One; 15 no. wind turbines	Design Iteration Two; 12 no. wind turbines, relocated to reduce impact to neighbouring windfarm and avoiding deep peat	Design Iteration Three; 13 no. wind turbines, greater separation distance between wind turbines, improved symmetry, further from inhabited houses to the west
Population & Human Health (incl. Shadow Flicker)	Higher impact to inhabited houses on west of Wind Farm Site.	Increased set back distance to inhabited houses to the west of the Wind Farm Site reduces potential impacts.	Increased set back distance to inhabited houses to the west of the Wind Farm Site reduces potential impacts.

Terrestrial Ecology	Higher impact due to larger footprint. Larger deep peat habitat loss. Larger impact to higher quality bog habitat in	Reduction in peat disturbance impact due to lower footprint and removal of turbines from areas of deeper peat.	Medium impact due to Proposed Development area size, but also avoiding deep peat.

Criteria	Design iteration One; 15 no. wind turbines	Design Iteration Two; 12 no. wind turbines, relocated to reduce impact to neighbouring windfarm and avoiding deep peat	Design Iteration Three; 13 no. wind turbines, greater separation distance between wind turbines, improved symmetry, further from inhabited houses to the west
	the south of the Wind Farm Site due to proximity of turbine.	Larger impact to higher quality bog habitat in the south of the Wind Farm Site due to proximity of turbine.	Reduced impact to higher quality bog habitat in the south of the Wind Farm Site.
Aquatic Ecology	Higher impact due to higher number of turbines and larger footprint causing a higher potential for run off and water quality impact.	Slight reduction due to lower no of turbines and smaller footprint.	Medium impact with addition of one turbine to footprint. Minimum distances to all watercourses remain in place to mitigate potential impacts.
Ornithology	Greater potential impact due to proximity of turbines to peatland habitat.	Greater potential impact due to proximity of turbines to peatland habitat.	Lower impact due to larger separation distance between peatland habitat and turbines.

Soils & Geology	Some turbines located in area of deeper peat, greater potential for stability issues. Slight increase in the volume of peat and spoil to be managed.	Reduced no of turbines has a lower footprint and so less impact on soils. Layout was amended following initial geotechnical investigations to reduce areas of deep peat and reduce the volume of peat and spoil to be managed, removing turbines from deep peat also reduces impacts to stability. Greater potential impact due to proximity of turbines to higher quality peatland soils in the south of the Wind Farm Site	Slightly larger footprint with addition of one turbine. Deep peat avoided, lower impact to stability issues. Lower impact to higher quality peatland soils in the south of the Wind Farm Site due to increased separation distance to turbines.
Hydrology & Hydrogeology	An increase in the volume of peat and spoil to be managed on the Wind Farm Site would increase the	Reduced volume of peat to be impacted	Reduced volume of peat to be impacted

Criteria	**Design iteration One; 15 no. wind turbines**	**Design Iteration Two; 12 no. wind turbines, relocated to reduce impact to neighbouring windfarm and avoiding deep peat**	**Design Iteration Three; 13 no. wind turbines, greater separation distance between wind turbines, improved symmetry, further from inhabited houses to the west**
	potential for silt laden runoff to enter receiving watercourses.		

Air & Climate	Lowest carbon payback time due to higher output of 15 turbines. However increased impact to deep peat which sequesters carbon.	Slight increase in carbon payback time due to reduction in turbine numbers.	Medium carbon payback time with 13 turbines. Lower impact on deep peat, which reduces carbon losses and improves carbon payback time.
Noise	Potential for impact to inhabited houses on west of Wind Farm Site.	Reduced impact to inhabited houses on West of Wind Farm Site.	Reduced impact to inhabited houses on West of Wind Farm Site.
Material Assets	Potential for impact to exiting adjacent wind farm.	Reduced impact to adjoining wind farm.	Reduced impact to adjoining wind farm.
Landscape & Visual	Higher potential impacts to inhabited houses to the west of the Wind Farm Site. Highest number of turbines slightly increase visual impact.	Slightly lower overall visual impact due to lower number of turbines.	Medium impact compared to alternative in terms of visual effects of number of turbines.
Cultural Heritage	higher potential impacts due to proximity to megalithic tomb.	Reduced potential impacts due to increased set back from megalithic tomb.	Reduced potential impacts due to increased set back from megalithic tomb.
Traffic and Transport	Slight increase to short term impacts on local road network due to higher amount of construction required and higher amount of turbine components to be delivered to the Wind Farm Site.	Lower impact to traffic due to smallest construction required and lowest number of components requiring delivery.	Medium impact compared to alternatives of volume of construction and delivery traffic.

Criteria	Design iteration One; 15 no. wind turbines	Design Iteration Two; 12 no. wind turbines, relocated to reduce impact to neighbouring windfarm and avoiding deep peat	Design Iteration Three; 13 no. wind turbines, greater separation distance between wind turbines, improved symmetry, further from inhabited houses to the west
Major Accidents and Natural Disasters	slightly higher potential impact to peat stability due to deeper peat.	Avoidance of deep peat reduces risks of peat instability.	Avoidance of deep peat reduces risks of peat instability.

The final layout was chosen due to its avoidance of deep peat, which improved the ground stability risk and reduced impacts to hydrology and hydrogeology, the increased distances to higher quality habitats, its reduced impact on nearby dwellings and increased setbacks to the neighbouring wind farm which has enabled optimal performance of all turbines.

3.9.2 Wind Farm Site Access Roads

Wind Farm Site access roads are required on the Wind Farm Site to enable transport of infrastructure and construction materials within the Wind Farm Site. Roads must be of a gradient and width sufficient to allow safe movement of equipment and vehicles. It was decided during the initial design of the Proposed Development, that existing roads would be utilised where possible to minimise the potential for impacts by constructing new roads as an alternative.

As the overall Wind Farm Site layout was finalised, the most suitable routes between each component of the Proposed Development were identified, taking into account the existing roads and the physical constraints of the Wind Farm Site. Locations were identified where upgrading of the existing road would be required. This included where sections of new roads would need to be constructed, to ensure suitable access to and linkages between the various project elements, and efficient movement around the Wind Farm Site.

An alternative option to utilising the existing road network within the Wind Farm Site would be to construct a new road network, having no regard to existing roads. This approach was considered unfavourable, as it would require unnecessary disturbance to the Wind Farm Site and create the potential for additional environmental impacts to occur. It would also result in an unnecessary requirement for additional cut and fill material to be used in the construction of these new roads. A comparison of the potential environmental effects of constructing an entirely new road network when compared against maximising the use of the existing road network in the Wind Farm Site is presented in **Table 3.9**.

Table 3.9: Environmental effects from utilising existing access tracks and creating new access roads where required compared to constructing a new Wind Farm access road network.

Criteria	Creating new access roads	Utilising existing access tracks
Population & Human Health (incl. Shadow Flicker)	Neutral	Neutral
Terrestrial Ecology	Larger footprint will result in greater habitat loss.	Lower footprint reduces impact.
Aquatic Ecology	Larger footprint will result in greater impact to water quality	Lower footprint reduces impact.
Ornithology	Larger footprint will result in greater habitat loss which could impact birds.	Lower footprint reduces impact.
Soils & Geology	Larger footprint would result in greater volumes of peat and spoil to be excavated and stored. Larger volume of stone required from on-site borrow pit for road construction.	Lower footprint reduces impact.
Hydrology & Hydrogeology	Larger footprint and increased number of new watercourse crossings, therefore, increasing the potential for silt laden runoff to enter receiving watercourses.	Lower footprint reduces impact.
Air & Climate	Potential for greater vehicular emissions due to increased volume of construction traffic.	Lower footprint reduces requirement of stone and reduces impact.
Noise	Potential for increased noise impacts on nearby sensitive receptors during the construction of the new roads.	Lower footprint reduces impact.
Material Assets	Larger footprint will result in greater land-take and a change in land use.	Lower footprint reduces impact.
Landscape & Visual	Potential for greater visual and landscape impacts due to the construction of new roads.	Lower footprint reduces impact.

Cultural Heritage	Larger footprint would increase the potential for impacts on unrecorded, subsurface archaeology.	Lower footprint reduces impact.
Criteria	**Creating new access roads**	**Utilising existing access tracks**
Traffic and Transport	Potential for greater traffic volumes during construction phase due to larger Footprint and requirement for more construction materials.	Lower footprint reduces impact.
Major Accidents and Natural Disasters	Neutral	Neutral

Using the existing access was selected as the preferred design as it maximised the use of the materials already on site, reducing the overall materials needed for the project. It also reduces habitat disturbance, soil excavation and impacts to hydrology.

3.9.3 Hydrogen Plant Site Access Road Layout

An alternative Hydrogen Plant Site access roads layout was initially considered (see **Figure 3.7**). However, this included land take to the north of the existing road and the potential loss of up to 10 mature trees due to sight line requirements on the roads. Upon analysis it was also thought that this initial road layout could potentially cause HGVs to have to queue at a right turn to enter the Hydrogen Plant Site, which could cause a queue of entering HGVs to backup on to the N59.

The preferred design was developed to include a roundabout off the L-6612-1, **Figure 3.8**. This preferred design removed the necessity to acquire land to the north of the existing road, meant that mature trees could be left in-situ. Having a roundabout means that HGVs entering the Hydrogen Plant Site have right of way, reducing the risk of queues forming.

More detail on this can be found in **Chapter 15: Traffic and Transportation**.

Table 3.10: Environmental effects of the initial Hydrogen Plant Site access road layout compared to the access road with roundabout

Criteria	Initial Road Layout	Access road with roundabout

Population & Human Health (incl. Shadow Flicker)	Neutral	Neutral
Terrestrial Ecology	Loss of mature trees increases impact of habitat loss.	Lower impact due to retention of mature trees.
Aquatic Ecology	Neutral	Neutral
Criteria	**Initial Road Layout**	**Access road with roundabout**
Ornithology	Loss of mature trees increases impact of habitat loss.	Lower impact due to retention of mature trees.
Soils & Geology	Neutral	Neutral
Hydrology & Hydrogeology	Neutral	Neutral
Air & Climate	Neutral	Neutral
Noise	Slightly lower noise impact.	Slightly increased construction noise due to roundabout, potential higher impact to sensitive receptors.
Material Assets	Neutral	Positive impact with addition of roundabout and new layout
Landscape & Visual	Removal of mature trees results in a higher visual impact of the Proposed Development.	Lower visual impacts associated with removal of mature trees.
Cultural Heritage	Neutral	Neutral
Traffic and Transport	Higher potential impact of traffic due to potential for queuing on national road	Resolves issue of queuing on national road – reduced impact.
Major Accidents and Natural Disasters	Neutral	Neutral

The proposed layout was selected due to the improved safe access on to the national road and reduction in impacts to biodiversity and landscape and visual.

3.9.4 Hydrogen Plant Layout

The Hydrogen Plant will comprise of a number of components including an electrolyser package (incorporating electrolyser stacks and gas processing equipment), the Hydrogen Plant Substation, water treatment, compressors, buffer storage cylinders, a dispensing station and cooling units. The electrolyser package will be contained within a specially designed building that resembles a large agricultural shed for security and to reduce noise and negative visual impact. The hydrogen will be stored in tube trailers prior to transport.

The layout of the Hydrogen Plant has had two iterations. The initial layout, shown in **Figure 3.9**, was a broadly north/south aligned layout of 51,400 m^2, with the tube trailer parking area to the south in a natural dip in the topography, the water treatment in the centre of the site and the electrolyser building in the north. However, it was identified that there was a

"Sensitive Rural Landscape" in the southern section of the site as per the Sligo County Development Plan 2017-2023. This area is a mixture of cutover and semi degraded bog and rough grassland. The layout was redesigned to a broadly east/west aligned arrangement of 47,650 m^3 as shown in **Figure 3.10**. The amended layout extended the Hydrogen Plant Site further west but reduced the area to the south. The amended layout also moved the location of the fire water tanks closer to the site access on guidance from the Sligo Fire Department regarding accessibility.

The environmental Impacts of the first and final layout are shown in **Table 3.11.**

Table 3.11: Environmental effects of the initial Hydrogen Plant Site layout compared to final layout

Criteria	Initial Hydrogen Plant Site layout	Final Hydrogen Plant Layout
Population & Human Health (incl. Shadow Flicker)	Footprint of development is closer to a watercourse to the south of the site which is potentially hydrologically linked at a distance downstream to the River Moy SAC which has important fisheries habitat. This could potentially cause higher water quality impacts during the construction phase to fisheries and the tourism industry. Use of construction best practice, mitigation and monitoring reduces this impact to imperceptible.	Increased distance to watercourse to the south of the site during construction reduces potential impacts to water quality further downstream and so reduces negative potential impacts to fisheries and tourism.

Terrestrial Ecology	Higher impact to biodiversity by habitat destruction and disturbance due to infrastructure location in cutover peatland. Larger footprint will result in greater habitat loss and disturbance.	Reduced impact due to location of site within agricultural field. Smaller footprint has a lower impact to habitat loss and disturbance.
Aquatic Ecology	Potentially higher impact on water quality during construction due to proximity to watercourse to the south of the Hydrogen Plant site. Larger footprint will result in greater potential impact to water quality through run off.	Potentially lower impact on water quality during construction due to increased distance to watercourse to the south of the Hydrogen Plant site. Smaller footprint has a lower potential impact to water quality through run off.

Criteria	Initial Hydrogen Plant Site layout	Final Hydrogen Plant Layout
Ornithology	Slightly higher potential impact due to loss of small area of cutover peatland habitat. Larger footprint will result in greater habitat loss which could impact bird habitat.	Slightly lower impact due to reduction in cutover peatland habitat loss. Smaller footprint, lower potential impact to bird habitat.
Soils & Geology	Higher potential impacts to peat soils. Larger footprint would result in greater volumes of peat and spoil to be excavated and stored, having a higher potential impact to soils.	Layout change moves infrastructure out of cutover peatland and reduces the volume of peat soils impacted. Smaller footprint results in a lower potential impact to soils.
Hydrology & Hydrogeology	Hydrogen Plant layout closer to watercourse to the south of the site, potentially higher construction phase impacts to hydrology and hydrogeology. Larger footprint increases the potential for silt laden runoff to enter receiving watercourses.	Layout change increases distance to watercourse to the south of the site which reduces the construction phase potential impacts to water quality. Smaller footprint results in a lower potential impact to hydrology and hydrogeology.

Air & Climate	Increased peat soil removal slightly increases the carbon payback time of the Proposed Development, slightly reducing the positive climate change mitigation impacts.	Reduced peat soil excavation slightly improves carbon payback time.
Noise	Slightly lower noise impacts due to marginally higher distance between compressors and closest sensitive receptor to the northwest.	Slightly increased potential noise impacts as compressors moved marginally closer to dwellings to the northwest however mitigation by design makes impact neutral.
Material Assets	Lower impacts as less agricultural land required for Hydrogen Plant.	Higher land take as additional agricultural field required to the west, however this is currently generally underutilised.
Landscape & Visual	Hydrogen Plant Site in area identified as a "Sensitive Rural Area", higher potential impacts.	Reduced impacts due to location in "Normal Rural Landscape"
Cultural Heritage	Neutral	Neutral
Traffic and Transport	Neutral	Neutral
Criteria	**Initial Hydrogen Plant Site layout**	**Final Hydrogen Plant Layout**
Major Accidents and Natural Disasters	Slightly higher impact due to location of fire water tanks in the east of the Hydrogen Plant Site, which is further from the access road.	Slightly reduced impact due to change in location of fire water tanks to closer to the access road providing better accessibility in the event of a major accident or natural disaster.

The final layout was selected based on the reduced impacts to a designated sensitive rural landscape, reduced impacts to hydrology, hydrogeology and aquatic ecology during the construction phase due to the increased distance to the watercourse at the south of the site and distance from peatland soils and improved health and safety due to the easier access of the fire water tanks. The second iteration also has a smaller footprint, which reduces environmental impacts.

3.9.5 Location of Ancillary Structures

The ancillary infrastructure required for the Proposed Development includes temporary construction compounds, Wind Farm Substation, Hydrogen Plant Substation, Grid Connection, Interconnector and borrow pits.

3.9.5.1 Wind Farm Substation and Control Building

While the operational lifespan of the proposed turbines is expected to be 40 years (following which they may be replaced or decommissioned). The Wind Farm Substation and accompanying Control Building and associated infrastructure will become an ESB asset. They will then be permanent features as they will form part of the electrical infrastructure of the area. There were two potential locations identified for the Wind Farm Substation:

- Alternative location; A site of 4.8 ha adjacent to the southwest of the Wind Farm Site, 0.88 km south of the proposed location of the Wind Farm Substation, as shown in **Figure 3.11**. It is located in a cut over peatland area, 1.12 km northwest of the Ox Mountains Bogs SAC and Ox Mountains Bogs pNHA. There is an order 1 watercourse adjacent to the south, this has "good" status, but is at risk of not meeting the WFD objectives. The groundwater is a "Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones" with moderate vulnerability and not at risk of meeting WFD objectives. The subsoil is peat. The landcover is classed as peat in the Corine 2018 index.
- Proposed Wind Farm Substation location; A site of 5.57 ha, to the north of the Wind Farm Site entrance in an area currently used for commercial forestry. It is 2.07 km northwest of the Ox Mountains Bogs SAC and Ox Mountains Bogs pNHA. There is an order 2 watercourse, approximately 50 m to the north, this has a "good" status and is not at risk of meeting the WFD objectives. The groundwater is a "Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones" with moderate vulnerability the groundwater and is not at risk of meeting WFD objectives. The subsoil is peat. The landcover is classed as Coniferous Forest in the Corine 2018 index.

The environmental impacts of these two options are considered in **Table 3.12.**

Table 3.12: The environmental impacts of initial location and final location of the Wind Farm Substation.

Criteria	Alternative location	Proposed location
Population & Human Health (incl. Shadow Flicker)	Neutral	Neutral

Terrestrial Ecology	Location on cutaway bog of low ecological value so impacts low. No removal of commercial forestry habitat. Higher impacts of habitat disturbance due to closer proximity to SAC and pNHA	Location in Sitka Spruce Forestry. Removal of Conifer Forestry area has potential for some impact to terrestrial ecology, however this habitat is of low value as commercial species and will be replanted. Increased separation distance to SAC and pNHA reduces impacts of habitat disturbance.
Aquatic Ecology	Closer to watercourse higher potential of impacts to water quality and aquatic ecology.	Further from water courses, lower potential for impacts.
Ornithology	Neutral	Neutral
Soils & Geology	Neutral	Neutral
Hydrology & Hydrogeology	Closer to water course higher potential of impacts.	Further from water courses, lower potential for impacts.
Air & Climate	Neutral	Neutral
Noise	Neutral	Neutral
Criteria	**Alternative location**	**Proposed location**
Material Assets	Proximity of turbines poses risk to Wind Farm Substation. There is an existing grid connection for the Carrowleagh Wind Farm in the road leading to the Wind Farm Site. This location has the potential to impact this underground grid cabling.	Reduced impact of risk to Wind Farm Substation at approved distance from turbines. Existing wind farm grid connection not impacted.
Landscape & Visual	Both sites have screening due to commercial forestry so impacts are neutral.	Both sites have screening due to commercial forestry so impacts are neutral.

Cultural Heritage	Slightly higher potential impacts due to closer proximity to registered Megalithic court tomb thought outside zone of notification so impacts minimal.	Slightly lower impacts due to increased distance to registered archaeological site.
Traffic and Transport	Neutral	Neutral
Major Accidents and Natural Disasters	Higher risk to Wind Farm Substation from turbines.	Larger separation distance between Wind Farm Substation and turbines reduces risk of major accidents.

The location of the Wind Farm Substation in an area of commercial forestry north of the Wind Farm Site entrance was selected due to the increased separation distances between the Wind Turbines and the substation buildings which reduces impacts to major accidents and material assets and improves health and safety. This location also avoids impacts to the existing underground grid connection for the neighbouring Carrowleagh Wind Farm. It has a lower impact on water quality, aquatic ecology and hydrology and hydrogeology due to the increased distance to water courses in the vicinity and due to the larger separation distance to nearby protected areas, it has lower impacts on ecology.

3.9.5.2 Grid Connection

A key consideration in determining the Grid Connection method for a proposed wind energy development is whether cabling is Under Ground Cabling (UGC) or run as an Over Head Line (OHL). While OHLs are less expensive and allow for easier repairs, UGC will have no visual impact.

For this reason, it was considered that UGC would be the preferable alternative. The draft Wind Energy Guidelines 2019 also indicate that UGC is the preferred option for connection of a wind energy development to the national grid.

The existing Glenree – Moy 110 kV OHL was identified as the closest Grid Connection point. The selected Grid Connection method will, as much as possible be UGC, with a minor section of above ground works in the vicinity of the Glenree - Moy 110 kV OHL Tie In towers. An Alternative of connecting in to Glenree Substation was considered, however this substation does not have the capacity to accommodate the required connection and would require an extension. Glenree substation is surrounded by third party lands and neither the Developer, ESB nor EirGrid has a right to extend into these land or lay cables across those lands. It was therefore not considered a reasonable alternative.

The design process for the Proposed Development identified three alternative grid connection routes to the Glenree – Moy 110 kV OHL outlined in **Figure 3.12.** A fourth potential alternative route heading south along the Stockane rd (L-5137-9), was identified, however the presence of the Blacklough Wind Farm grid connection cable in the road meant that this route was not considered a reasonable alternative.

The four grid route reasonable alternatives are as follows:

1. Grid route 1; Proposed Grid Connection. The proposed 110 kV underground grid connection which extends over a length of 6.65 km, from the Wind Farm Substation to the Glenree – Moy 110 kV over-head line. Leaving the Wind Farm Substation, the Grid Connection route follows the access road for 250 m and turns north on to the L5137-9 for 60 m. The route turns west to converge on to the L-5136-0 where the UG cables will be required to cross beneath existing ESBN cables and existing water utilities. It continues on the L-5136-0 for 2.66 km. It then turns south on the L-1102-30 for 610 m where it crosses underneath the Loughnagore stream by Horizontal Directional Drill (HDD). It re-joins the roadway, now the L1102-0 for 585 m where it crosses the Glenree river by HDD. It continues south for 575 km crossing beneath the Fiddaun Stream by HDD then back into the roadway of the L-1102-0. It then continues south for a further 1.14 km before crossing the Srafaungal River by HDD then back into the roadway of the L-1102-0 for 385 m. The route then turns in an easterly direction along a permanent access track for 355 m to the tie in towers beneath the existing Moy to Glenree OHL in the townland of Rathreedane. The route passes through the zone of notification of two Ringforts on the Sites and Monuments Record.
2. Grid route option 2 (blue). Underground grid route of 6.62 km which travels from the Wind Farm Substation in private lands through an area of cutover bog in a southwest direction for 1.56 km crossing an order 1 stream in the vicinity of the Wind Farm Site. It then crosses local road Stockane rd (L-5137-9) and continues in private lands through commercial forestry and agricultural fields before crossing the Glenree River. It then joins a local road that roughly travels parallel to the Glenree River. This section passes through the zone of notification of a Ringfort on the Sites and Monuments Record. It then joins the L-1102-0 heading south for 1.84 km, passing into the zone of notification for a second registered ringfort. It then turns east into private lands where it connects to the OHL.

3. Grid route option 3 (pink); Underground grid route of 5.34 km which travels from the Wind Farm Substation in private lands through an area of cutover bog in a southwest direction

crossing an order 1 stream in the vicinity of the Wind Farm Site. It then joins local road the Stockane road (L-5137-9) where it crosses the Glenree River via a bridge. It then turns left and heads southeast along the L87022 for 3.58 km, crossing the Sligo County boundary and joining the OHL 0.83 km north of the Lough Hoe Bog Special Area of Conservation. Towards the eastern end, the elevation of the route rises towards the Ox Mountains, this area has sections of high vulnerability to landslides and past landslide events, there are also areas where the bedrock is at or near the surface with extremely high groundwater vulnerability. The location of the tie in towers is in a Geological Heritage Site; The Gap (northwest of Lough Talt). This area in the Mayo Landscape Appraisal of County Mayo from the Mayo CDO 2022-2028, close to a

"Vulnerable Feature - Skylines" along the ridge and there is a designated scenic route along the R294, approximately 60 m from the location of the tie in towers.

4. Grid route option 4 (green) Underground grid route of 8.17 km which travels from the Wind Farm Substation south, within the Wind Farm Site leaving the site at the southwest corner and passing through private lands in an area of peat bog 0.25 km west of the Lough Hoe Bog Special Area of Conservation, for 0.94 km to the L87022 where it crossed the Glenree River by bridge. It then joins a local road that roughly travels parallel to the Glenree River. This section passes through the zone of notification of a Ringfort on the Sites and Monuments Record. It then joins the L-11020 heading south for 1.84 km. This section of the route passes within the zone of notification of a Ringfort on the Sites and Monuments Record. It then turns east into private lands where it connects to the OHL.

A comparison of the four reasonable alternatives are outlined in **Table 3.13**.

Table 3.13: The environmental effects of the four alternative Grid Route Options.

Criteria	Grid route 1; Proposed Grid Connection	Grid route option 2	Grid route option 3	Grid route option 4
Population & Human Health (incl. Shadow Flicker)	Potentially slightly higher disruption and nuisance caused by a larger proportion of works located along roads. Grid connection point 0.47 km of the village of Bunnyconnellan, which has a higher housing density that the surrounding areas, potentially higher disruption due to higher number of sensitive receptors.	Slightly lower disruption to roadways due to partial location in private lands, slightly lower impact to people. Grid connection point 0.47 km of the village of Bunnyconnellan, which has a higher housing density that the surrounding areas, potentially higher disruption due to higher number of sensitive receptors.	Slightly lower disruption to roadways due to partial location in private lands, slightly lower impact to people. Lower impact due to lower number of sensitive receptors along route due to lower housing density.	Slightly lower disruption to roadways due to partial location in private lands, slightly lower impact to people. Grid connection point 0.47 km of the village of Bunnyconnellan, which has a higher housing density that the surrounding areas, potentially higher disruption due to higher number of sensitive receptors.

Terrestrial Ecology	Route travels along public roads, resulting in less habitat loss and disturbance and so has a lower impact.	Higher short term construction phase impacts due to habitat loss and disturbance in cutover bog, commercial	Higher short term construction phase impacts due to habitat loss and disturbance in bog. Higher potential impact to SAC due to close proximity.	Higher short term construction phase impacts due to habitat loss and disturbance in bog. Higher potential impact to SAC due to close proximity.

Criteria	Grid route 1; Proposed Grid Connection	Grid route option 2	Grid route option 3	Grid route option 4
		forestry and agricultural grassland.		
Aquatic Ecology	Lower impact due to route along existing roadways	Higher potential impact due to two no. off road watercourse crossings. Higher risk of runoff from excavations entering watercourses and impacting water quality.	Higher potential impact due to one no. off road watercourse crossing. Higher risk of runoff from excavations entering watercourses and impacting water quality. Higher impact due to proximity of SAC which has White-clawed Crayfish as a qualifying interest which depend on high water quality.	Higher impact to water quality due to excavations of peatland for the cable trench which has a higher potential impact to aquatic ecology. Higher impact due to proximity of SAC which has Whiteclawed Crayfish as a qualifying interest which depend on high water quality.

Ornithology	Lower impact due to the majority of works being in roadway and greatest distance from intact peatland habitat in SAC.	Higher potential habitat disturbance and loss due to cutover peatland, commercial forestry and agricultural lands being used for route.	Higher potential habitat disturbance and loss due to cutover peatland lands being used for route. Higher impact of habitat disturbance due to proximity of intact peatland habitat to the east.	Higher potential habitat disturbance and loss due to cutover peatland, commercial forestry and agricultural lands being used for route. Higher impact of habitat disturbance due to proximity of intact peatland habitat to the east.

Criteria	Grid route 1; Proposed Grid Connection	Grid route option 2	Grid route option 3	Grid route option 4

Soils & Geology	Lower impact to soils and geology due to less disturbance because most of the route is located in the roadway.	Higher impact due to disturbance of more soils including peat soils.	Higher impact due to disturbance of more soils including peat soils. Higher risk of ground instability during construction due to proximity of areas of high landslide susceptibility. Trench excavations could potentially require removal of bedrock as bedrock is at or close to the surface in areas, this could cause higher impacts to geology. Location of the tie in towers in in a Geological Heritage Site, which could result in higher impacts to soils and geology.	Higher impact due to disturbance of more soils including peat soils.

Hydrology & Hydrogeology	Preferred route avoids water crossings apart from those already crossed by bridges along the road, lower impact.	Higher impact to water quality due to excavations of peatland for the cable trench. Higher potential impact to hydrology and	Higher impact to water quality due to excavations of peatland for the cable trench. Higher potential impact due to one no. off road watercourse crossing.	Higher impact to water quality due to excavations of peatland for the cable trench.

Criteria	Grid route 1; Proposed Grid Connection	Grid route option 2	Grid route option 3	Grid route option 4
		hydrogeology due to two no. off road watercourse crossings. Higher risk of runoff from excavations entering watercourses and impacting water quality.	Higher potential risk to groundwater due to area of extremely high groundwater vulnerability.	
Air & Climate	Slightly lower impact due to reduction in peatland soil disturbance.	Slightly higher carbon payback due to excavations of peat soils.	Slightly higher carbon payback due to excavations of peat soils.	Slightly higher carbon payback due to excavations of peat soils.

Noise	Neutral	Neutral	Potentially higher noise impacts due to requirement to remove bedrock, though this is in a sparsely populated area with few sensitive receptors.	Neutral
Material Assets	Less disturbance to local landowner's agricultural land.	Larger land take required in private lands.	Larger land take required in private lands.	Larger land take required in private lands.
Landscape & Visual	Neutral	Neutral	Higher impact of tie in towers due to sensitivity of the landscape in	Neutral

Criteria	Grid route 1; Proposed Grid Connection	Grid route option 2	Grid route option 3	Grid route option 4
			the area and proximity to a scenic route.	

Cultural Heritage	Lower impact as roads already developed. Route passes within the zone of notification of two no. registered monuments, however due to the excavations being confined to the roads, impacts are expected to be minimal.	Higher impact to undiscovered artifacts as more undeveloped area needs to be excavated along route in private lands. Route passes within the zone of notification of two no. registered monuments, however due to the excavations being confined to the roads, impacts are expected to be minimal.	Higher impact to undiscovered artifacts as more undeveloped area needs to be excavated along route in private lands. No zones of notification for registers monuments along route, lower impacts.	Higher impact to undiscovered artifacts as more undeveloped area needs to be excavated along route in private lands. Route passes within the zone of notification of one no. registered monuments, however due to the excavations being confined to the roads, impacts are expected to be minimal.
Traffic and Transport	Potentially slightly higher traffic disturbance due to location of majority of the route in roadways. Potentially higher impacts due to route proximity to	Slightly lower impact as less roadways used. Potentially higher impacts due to route proximity to	Slightly lower impact as less roadways used. Potentially higher impacts due to requirement to remove bedrock from the site requiring more vehicles.	Longest route, higher impacts to traffic disruption. Potentially higher impacts due to route proximity to Bunnyconnellan village 0.47 km south.
Criteria	**Grid route 1; Proposed Grid Connection**	**Grid route option 2**	**Grid route option 3**	**Grid route option 4**

	Bunnyconnellan village 0.47 km south.	Bunnyconnellan village 0.47 km south.	Lower impacts due to sparsely populated area for the majority of the route and avoidance of coming in close proximity to any settlements.	
Major Accidents and Natural Disasters	Neutral	Neutral	Higher risk of ground instability during construction due to proximity of areas of high landslide susceptibility.	Neutral

The preferred route was selected due to its location within the roadway for the majority of its length, this reduces impacts to peatland soils, habitat loss and disturbance and potential impacts to water quality and aquatic ecology. It avoids coming in close proximity to ecological and geoheritage protected areas, reducing potential impacts to these. It avoids areas of high ground instability reducing risks of major accidents and natural disasters and improves the health and safety of the construction phase. The proposed tie in towers are not in a sensitive landscape area or in close proximity to scenic routes which reduces the operational landscape impacts compared to alternative options.

3.9.5.3 Borrow Pits

Fill material required for the construction of Wind Farm Site access roads and Turbine Foundations and Hardstands will be obtained from local authorised quarries. An alternative option of sourcing materials from on-site borrow pits at the Wind Farm Site was considered. There are three small borrow pits already on the Wind Farm Site, used in the creation of the turbary tracks, however after investigations, these were considered to be unsuitable as a source of stone due to limited useable material remaining. New borrow pit creation was considered. However, the environmental impacts were considered to be unacceptably high when compared to sourcing material from off-site quarries. It was therefore decided to source stone from local suppliers rather than from on-site borrow pits.

A comparison of the potential environmental effects of using on-site borrow pits in comparison to using an offsite quarry is presented in **Table 3.14**.

Table 3.14: The environmental impacts from utilising local quarries compared to onsite borrow pits

Criteria	Use of on-site borrow pits for stone materials	Use of local quarries to supply stone materials
Population & Human Health (incl. Shadow Flicker)	Utilising on-site borrow pits would reduce vehicular and dust emissions from transporting material from offsite quarry locations.	Higher potential dust emissions due to increased haulage of stone needed.
Terrestrial Ecology	Creation of on-site borrow pits creates a larger developed area and more habitat disturbance and loss.	Lower impact of disturbance and habitat loss on Wind Farm Site.

Criteria	Use of on-site borrow pits for stone materials	Use of local quarries to supply stone materials
Aquatic Ecology	Creation of on-site borrow pits creates a larger developed area and higher potential for run off into water courses, impacting water quality.	Lower impact due to smaller Footprint
Ornithology	Creation of on-site borrow pits creates a larger developed area and more habitat disturbance and loss.	Lower impact of disturbance and habitat loss on Wind Farm Site
Soils & Geology	On-site borrow pits could damage peatland soils and result in greater volumes of peat and spoil to be excavated and stored.	Lower impact due to smaller Footprint.
Hydrology & Hydrogeology	Creation of on-site borrow pits creates a larger developed area and higher potential for run off into water courses, impacting water quality.	Lower impact due to smaller Footprint.
Air & Climate	Utilising on-site borrow pits would reduce dust and vehicle emissions associated with offsite vehicle movements. However, dust emissions from excavations could also potentially cause issues.	Higher dust and vehicle emissions associated with offsite vehicle movements.
Noise	On-site borrow pits could generate more noise on the Wind Farm Site however there is a potential that transportation of materials from offsite quarry	Deliveries and activities at quarries could potentially increase noise, but potentially a reduction in noise associated with removing rock

Criteria	Use of on-site borrow pits for stone materials	Use of local quarries to supply stone materials
	locations could increase noise emissions.	from borrow pits would reduce noise on the Wind Farm Site.
Material Assets	Neutral	Neutral
Landscape & Visual	Increased visual impact on Wind Farm Site due to presence of borrow pits.	No borrow pits on-site leaves the landscape more intact and reduces visual impact of the Proposed Development.
Cultural Heritage	Creation of on-site borrow pits creates a larger developed area increasing the potential for impacts on unrecorded, subsurface archaeology.	Lower impact due to smaller Footprint.
Traffic and Transport	Lower traffic impact as material sourced on Wind Farm Site.	Potential for increased vehicular movement on local roads.
Major Accidents and Natural Disasters	Neutral	Neutral

Using rock sourced from quarries was selected rather than on site borrow pits due to the reduction in the footprint of the Proposed Development and the reduced excavations on peat soil, resulting in lower long-term impacts to habitat disturbance and loss, hydrology and hydrogeology (including water quality) and soils and geology. This option also has lower potential impacts to undiscovered cultural heritage. It was considered these reduced longterm impacts were preferable to the higher potential short-term impacts to traffic and transport and potential construction haul route disruptions to population and human health.

3.10 ALTERNATIVE WIND FARM SITE ACCESS

In assessing the most suitable route for transport of construction materials to the Wind Farm Site, cognisance was taken of the haul route used for the neighbouring Carrowleagh Wind Farm, which involved widening works to the access road to the Wind Farm Site from the public roadway. The inspectors report for the Existing Permission EIS for Firlough Wind Farm stated:

"Given the presence of a number of wind energy developments in the wider area, with particular reference to the neighbouring scheme at Carrowleagh, it would appear that the surrounding road network is capable of accommodating the likely traffic movements associated with the construction of the proposed development. Indeed, it would be prudent for delivery traffic associated with the subject proposal to utilise the same haul route as that utilised during the construction of the Carrowleagh Wind Farm, however, I would suggest that the selection of the final haul route can be best addressed by way of condition in order to permit the review of same closer to the time of construction in conjunction with Mayo and

Sligo County Councils thereby providing for the least amount of disruption as possible."

The access route for all deliveries for the extant permission is shown in **Figure 3.13.**

When assessing the options for haul routes for the Proposed Development, the route for the consented project was largely followed, however after analysis it was considered that a separate construction haulage route to and from the Wind Farm Site would cause less disruption to traffic and transport and a part one-way system would be a safer alternative to construction traffic using a single route to and from the Wind Farm Site, and so reducing the risk of a major accident. These chosen routes are shown in **Figure 2.6**.

3.11 ALTERNATVIE TECHNOLOGIES TO HYDROGEN

The primary driver for the Developer considering a hydrogen plant at or near the Wind Farm was to address the issue of constraint in the North Mayo and Sligo region of the national electricity network. Constraint is a geographic phenomenon where the full renewable energy generation potential in an area cannot be realised due to physical shortcomings or restrictions in the electricity network in an area. In EirGrid's Shaping our Electricity Future report[89] constraint is defined as "a change to any generator's output from the planned *"market schedule"* due to transmission network limitations or operating reserve requirements". EirGrid is developing a new piece of electrical infrastructure in the region known as the North Connacht 110 kV Project which will connect the Moy substation near Ballina, Co. Mayo to the Tonroe substation in Ballaghaderreen, Co. Roscommon. Even once the North Connacht 110 kV Project is commissioned, EirGrid expects constraint in the North-West to be 11% - 20%[90]. These levels of constraint are a distinct economic disadvantage for new wind electricity generation in North Mayo compared to new wind electricity generation in parts of the electricity network where constraint is estimated to be

[89] https://www.eirgridgroup.com/site-files/library/EirGrid/Shaping_Our_Electricity_Future_Roadmap.pdf
[90] https://www.eirgridgroup.com/site-files/library/EirGrid/ECP-1-Solar-and-Wind-Constraints-Ireland-Summary.pdf

between 0% - 1%. This makes it challenging to compete in securing offtake arrangements in price sensitive processes such as RESS auctions or bilaterally negotiated corporate power purchase agreements.

In order to alleviate the constraint forecast for the Wind Farm, the Developer considered the following alternatives:

1. Green hydrogen produced by electrolysis

Electrolysis is the process of splitting water (H_2O) into its basic components, hydrogen (H_2) and oxygen (O_2), using an electric current in an electrolyser. Through this process, electrical energy can be stored as chemical energy in the resulting hydrogen. The newly formed chemical energy can be utilised as a fuel or converted back to electricity when required. Water is an ideal source for producing hydrogen because it only releases oxygen as a by-product. The hydrogen produced by electrolysis using a renewable energy source is called green hydrogen.

2. Battery Energy Storage System

A Battery Energy Storage System ("BESS") located on the site of the Wind Farm was considered to consume all constrained power that could not be exported onto the national electricity network. In determining the required size of BESS, the Developer estimated that of the approximate annual average generation of 240,000M Wh[9], if 11% was constrained, the minimum BESS would need to be 26,400 MWh. Based on prevailing BESS technology with discharge rates of 1MW / MWh, this would imply an installed capacity BESS of 26,400 MW. Each MW of battery energy storage requires approximately 0.1 ha, therefore 1,320 ha would be required to accommodate 26,400 MW of BESS.

Furthermore, the above BESS sizing methodology assumed the charged batteries could be immediately discharged once full. Which may not be possible during periods of consistently high wind. The Developer had already collected wind data demonstrating days of consistently high wind measurements during winter months where the BESS system would be fully charged, but may be unable to fully discharge to the electricity network due to the continuing wind generation in the area. By comparison, hydrogen at the proposed Hydrogen Plant can be produced whenever there is sufficient water and renewable energy available. The hydrogen produced at the

[9] $78MW\ x\ 35\%\ Utilization\ Rate\ x\ 8760hrs/yr = 240{,}000MWh$

Hydrogen Plant is intended to be used in transport and other industries and is not competing for capacity on the national electricity network.

3. Electric Vehicle Fleet Charging

Due to the excessively large BESS requirement, the Developer considered the possibility of supplementing the BESS with a local fleet of public service vehicles, busses, taxis, food trucks and mobile shops, etc. The isolated location of the Wind Farm combined with the poor local grid network and relatively small size of a potential EV fleet meant this did not address the forecast constraint issues facing the Wind Farm and was not progressed beyond concept stage.

4. Liquid Air Storage

Liquid Air Storage is a nascent form of long duration energy storage. During periods of high renewable energy generation, air is compressed and cooled to liquid form using excess power. The liquid air is stored in cryogenic chambers and when renewable energy generation is low can be reconverted to gas form, releasing the stored energy through expansion, driving a turbine to generate electricity that can be distributed back to the electricity network. The technology is still awaiting commercial demonstration at utility scale.

A comparison of the environmental impacts of green hydrogen, BESS, BESS and electric vehicle charging, and liquid air storage are show in **Table 3.15.**

Table 3.15: Comparison of the environmental impacts of green hydrogen, BESS, BESS and electric vehicle charging and liquid air storage

Criteria	Green hydrogen	Battery Energy Storage System	Battery Energy Storage System combined with Electric Vehicle Fleet Charging	Liquid Air Storage

Population & Human Health (incl. Shadow Flicker)	Increased positive impacts; Addition of hydrogen skills and employment opportunities, transportation jobs and potential of attracting hydrogen-based enterprise to the region. Growth of zero emissions green hydrogen use in transport and industry sectors, reduction in emissions and related improvement of air quality. Production of a second renewable energy type; green hydrogen. This improves energy security by diversifying supply and reduces constraint and curtailment of the Wind Farm, maximising the renewable energy that can be produced. Hydrogen production requires a water supply, potential impacts to local aquifer. However, analysis of data collected shows that water required can be sourced sustainably with no negative impacts to the aquifer and nearby wells. Rainwater harvesting will be utilised to reduce reliance on groundwater.	No positive impacts of a second renewable energy type produced by the project. No further increases to energy security and air quality improvement beyond additional renewable electricity. No addition of hydrogen skills, employment, enterprise or growth of transport and industry market to the region. No water element to Proposed Development so no potential impact on aquifer or wells nearby.	Potentially higher positive impacts to the local economy of the availability of electric vehicle charging facilities to households and businesses. No positive impacts of a second renewable energy type produced by the project. No further increases to energy security and air quality improvement beyond additional renewable electricity. No addition of hydrogen skills, employment, enterprise or growth of transport and industry market to the region. Higher potential negative impacts of additional vehicles on local roads. No water element to Proposed Development so no potential impact on aquifer or wells nearby.	No positive impacts of a second renewable energy type produced by the project. No further increases to energy security and air quality improvement beyond additional renewable electricity. No addition of hydrogen skills, employment, enterprise or growth of transport and industry market to the region. No water element to Proposed Development so no potential impact on aquifer or wells nearby.

Terrestrial Ecology	Smaller footprint has a lower impact to habitat loss and disturbance.	Larger footprint will result in greater habitat loss and disturbance.	Larger footprint will result in greater habitat loss and disturbance.	Smaller footprint has a lower impact to habitat loss and disturbance.

Criteria	Green hydrogen	Battery Energy Storage System	Battery Energy Storage System combined with Electric Vehicle Fleet Charging	Liquid Air Storage
Aquatic Ecology	Smaller footprint has a lower potential impact to water quality through run off. Wastewater from hydrogen production potentially poses a risk to aquatic ecology. The water treatment process, controlled discharge and assimilative capacity of the receiving waters will mitigate risks to water quality which could aquatic biology.	Larger footprint will result in greater potential impact to water quality through run off. No requirement for water abstraction or discharge lower impacts to water quality and aquatic ecology during operation.	Larger footprint will result in greater potential impact to water quality through run off. No requirement for water abstraction or discharge lower impacts to water quality and aquatic ecology during operation.	No requirement for water abstraction or discharge lower impacts to water quality and aquatic ecology during operation.
Ornithology	Smaller footprint, lower potential impact to bird habitat.	Larger footprint will result in greater habitat loss and disturbance which could impact bird habitat.	Larger footprint will result in greater habitat loss and disturbance which could impact bird habitat.	Smaller footprint, lower potential impact to bird habitat.
Soils & Geology	Smaller footprint results in a lower potential impact to soils.	Larger footprint would result in greater volumes of peat and spoil to be excavated and stored, having a higher potential impact to soils.	Larger footprint would result in greater volumes of peat and spoil to be excavated and stored,	Smaller footprint results in a lower potential impact to soils.

			having a higher potential impact to soils.	
Hydrology & Hydrogeology	Smaller footprint results in a lower potential impact to hydrology and hydrogeology. Site investigations and the conclusion of the Ground Water Supply Assessment found that the ground water extraction from two boreholes was sufficient to supply the expected water demand of the Hydrogen Plant Site without depleting the aquifer or impacting the wells nearby. Rainwater harvesting will be utilised to reduce	No requirement for water abstraction or discharge. Larger footprint increases the potential for silt laden runoff to enter receiving watercourses.	No requirement for water abstraction or discharge. Larger footprint increases the potential for silt laden runoff to enter receiving watercourses.	Smaller footprint results in a lower potential impact to hydrology and hydrogeology. No requirement for water abstraction or discharge lower impacts to hydrology and hydrogeology.

Criteria	Green hydrogen	Battery Energy Storage System	Battery Energy Storage System combined with Electric Vehicle Fleet Charging	Liquid Air Storage

	the reliance on groundwater for the production of green hydrogen. A waste water treatment system and ongoing monitoring will minimise impacts of wastewater on the receiving environment. This process will be in line with EPA guidelines. Displacement of fossil fuel transport and industry emissions improves water quality on a wider scale.			
Air & Climate	Maximum production of 31.2 tonnes of zero emissions green hydrogen per day to displace fossil fuels to be used in transport, heating or industry, which are all traditionally hard to abate sectors. If used to displace diesel HGVs, green hydrogen also reduces NOx and Sox and improves air quality. Reduced carbon payback period. Higher contribution to climate change mitigation strategies and targets. Higher contribution to renewable energy targets including renewable gas/hydrogen targets laid out in Ireland's Climate Action Plan 2023.	Lower positive impacts due to no continued discharge of stored energy and a lower output of renewable energy available to displace fossil fuels. No colocation of second type of renewable energy; green hydrogen. Production only of renewable electricity. No benefits of displacing fossil fuels in hard to abate sectors such as heavy transport and industry.	BESS and Electric vehicle fleet would not address constraint issues and would result loss of renewable energy generation. This would reduce the benefits of the Proposed Development including displacing fossil fuels and the related positive impacts to air quality and climate change mitigation. No colocation of second type of renewable energy; green hydrogen. Production only of renewable electricity. No	Longer term, intra-day storage available compared to batteries so less energy is wasted when the grid is constrained. No colocation of second type of renewable energy; green hydrogen. Production only of renewable electricity. No benefits of displacing fossil fuels in hard to abate sectors such as heavy transport and industry.

	Improved energy security by addition of new type of locally produced renewable energy.		benefits of displacing fossil fuels in hard to abate sectors such as heavy transport and industry.	

Criteria	Green hydrogen	Battery Energy Storage System	Battery Energy Storage System combined with Electric Vehicle Fleet Charging	Liquid Air Storage
			Increased positive benefits of providing charging for electric personal and light duty commercial vehicles which could displace traditional fossil fuel vehicles.	

Noise	Potentially higher impacts due to presence of compressors, though the facility would be designed to minimise noise and adhere to noise restrictions.	Potentially lower noise impacts due to low noise creation by batteries.	Potentially slightly higher impact of additional vehicles on local roads, though these vehicles would be electric and so have a lower noise impact than traditional fossil fuel vehicles.	Potentially higher impacts due to presence of compressors, though the facility would be designed to minimise noise and adhere to noise restrictions.
Material Assets	Lower impacts to land take due to smaller footprint required.	Larger land take required, higher impacts to agriculture, forestry and/or other land uses due to development footprint.	Larger land take required, higher impacts to agriculture, forestry and/or other land uses due to development footprint.	Lower impacts to land take due to smaller footprint required.
Landscape & Visual	Potentially higher visual impacts due to height of Hydrogen Plant buildings. However, the Hydrogen Plant has been designed to look like a large agricultural shed, screening, landscaping, planting and the natural topography of the Hydrogen Plant Site reduces visual impacts.	Potentially higher impacts due to larger footprint of development. However, batteries have a lower profile than the hydrogen plant buildings and therefore could potentially be better screened from view.	Potentially higher impacts due to larger footprint of development. However, batteries have a lower profile than the hydrogen plant buildings and therefore could potentially be better screened from view.	Potentially higher visual impact due to construction of building to house equipment. However this would be design to look like a large agricultural shed screening, landscaping, planting would reduce visual impacts. Potentially higher visual impacts from large storage tanks required.
Criteria	**Green hydrogen**	**Battery Energy Storage System**	**Battery Energy Storage System combined with Electric Vehicle Fleet**	**Liquid Air Storage**

			Charging	
Cultural Heritage	Smaller footprint means lower risk of impact to undiscovered cultural artifacts.	Larger footprint would result in a bigger impact on undiscovered cultural artifacts.	Larger footprint would result in a bigger impact on undiscovered cultural artifacts.	Smaller footprint means lower risk of impact to undiscovered cultural artifacts.
Traffic and Transport	Higher impact from hydrogen transportation via tube-trailers.	No increase of hydrogen transportation trucks on road network, lower impacts to traffic and transport.	Higher impact from high volume of additional vehicle fleets on local roads.	Lower impacts to traffic and transport as less vehicles on roads.

Major Accidents and Natural Disasters	Increased operational risk of Major Accidents and Natural Disasters. However, the Hydrogen Plant Site will adhere to all HSA requirements, including COMAH. In addition, the facility will be constructed and operated in accordance with applicable design standards and operational processes. To date, a Preliminary Hazard Analysis, Safety Management Plan and Quantitative Risk Assessment have been completed and shared with the HSA. The Safety Management Plan outlines the tasks to be completed throughout the project lifecycle to help identify, avoid and mitigate hazards.	BESS facility would adhere to all safety design standards and operating requirements. Potential risks of batteries include fire and electrical faults, though these would be minimised through use of safe design, monitoring and fire suppression systems.	BESS facility and charging equipment would adhere to all safety design standards and operating requirements. Potential risks of batteries include fire and electrical faults, though these would be minimised through use of safe design, monitoring and fire suppression systems.	The Liquid Air Storage facility would adhere to all safety design standards and operating requirements. Handling liquid air which contains liquid oxygen, can pose safety risks as pure oxygen pose fire and explosion risks. This can be managed by using well insulated systems, monitoring the oxygen content in the liquid air and by keeping organic material away from where oxygen enrichment occurs. The very low operating temperatures required for the process can be hazardous to both people and materials.

Hydrogen production by electrolysis was selected as the preferred energy storage technology, this was due to it being a 100 year old, well understood and proven technology with numerous OEMs building manufacturing facilities to supply electrolyser demand. Despite its potentially smaller footprint and associated lowered environmental impacts, Liquid Air Storage is still awaiting commercial demonstration at utility scale which was deemed too great a risk to proceed and therefore not technically viable. Hydrogen is referred to in the Irish Government's Climate Action Plan 2023, indicating that it is being considered as a key technology to achieve Ireland's Net Zero targets. The Hydrogen Plant would have a significantly smaller footprint than a BESS, resulting in lower negative impacts to habitat loss and disturbance, as well as lower impacts to hydrology and hydrogeology and soils and geology due to reduced run off and excavations. The lower footprint also decreases the land use take and impacts to material assets such as agriculture and forestry. Even with the addition of charging electric vehicles, reducing the area required for the BESS, grid constraint issues remain and the footprint is still unacceptably large. Electric vehicles also increase the number of additional vehicles on local roads in the vicinity of the project which was considered undesirable.

3.12 ALTERNATIVE HYDROGEN PLANT PROCESSES

3.12.1 Electrolyser technology

Electrolysis is the process of splitting water into hydrogen and oxygen using electricity in an electrochemical cell. Electrolysers come in a variety of capacities and chemistries, but the fundamental concept remains the same. Electrolysers, like fuel cells, have electrodes (anodes and cathodes) separated by an electrolyte. The combination of electrodes and electrolyte vary by the type of chemical reactions taking place. Unlike steam methane reforming for hydrogen production from fossil fuels, electrolysers are considered "green" sources of hydrogen when the electricity consumed is provided by a renewable energy resource. Instead of using carbon as an energy carrier, electrolysis-derived hydrogen uses the splitting and combining of water.

Early in the design phase a feasibility study was carried out by Black and Veatch, into the suitability of the alternatives of Proton Exchange Membrane (PEM) and Alkaline Water (AWE) electrolysers.

In a PEM electrolyser, water is split into oxygen and hydrogen, with the proton (H+) travelling from the anode to the cathode, through a solid polymer membrane, and exiting out the cathode side. Oxygen, in turn, exits out of the anode side without passing through the membrane. The membrane allows for the separation of the two gases, hydrogen and oxygen, and makes them easy to collect without mixing of the gases. Catalysts at the anode and cathode help lower the activation energy required for the splitting of water. The capital investment costs for PEM are approximately 1.6 times that of AWE. Recent research and development (R&D) initiatives are focussed on optimising the catalytic activity of the cell while minimizing the amount of expensive electrocatalysts, thereby lowering the cost.

Alkaline water electrolysers fundamentally function similarly to PEM electrolysers; however, the ion transported in the electrolyte is OH- and travels from the cathode to the anode through an aqueous solution (typically Potassium Hydroxide). The hydrogen then exits out the cathode side and the oxygen exits at the anode. AWE technology typically uses nonnoble metal catalyst electrodes which are less expensive than the catalysts used in PEMs. AWEs also have a lower current density compared to PEM, and as such require a larger footprint.

It should be noted that PEMs typically have a fast response ramp-up and ramp-down capability and a wide operating range (0-100%). As such, they are well suited to a variable input electricity such as wind.

The impacts of the two technologies are outlined in **Table 3.16.**

Table 3.16: Impacts of the Two Technologies

Criteria	PEM	AWE
Population & Human Health (incl. Shadow Flicker)	PEM shorter life cycle of equipment, equipment will need to be replaced sooner so higher nuisance impacts of replacement delivery and wastes. Less maintenance required so slightly lower positive impact to employment.	Longer lifecycle of equipment means it doesn't need to be replaced as often so lower impact from delivery of new replacement and lower waste produced. More complex maintenance means slightly higher employment opportunity, though slightly higher related traffic. Potassium hydroxide (KOH), also known as lye, has been selected as the electrolyte for the electrolyser stacks. There are potential human health impacts of this should it enter drinking water or the air in large quantities. However, the relatively small volume required, design standards and operational health and safety procedure reduce this risk.
Terrestrial Ecology	Smaller footprint, lower impact to habitat loss.	Larger footprint of electrolyser, which is a small part of the Hydrogen Plant Site increases the developed footprint slightly, resulting in a higher impact to habitat loss.

Criteria	PEM	AWE

Aquatic Ecology	Smaller footprint means lower impact to run off and water quality.	Larger footprint of electrolyser, makes the developed footprint slightly larger resulting in a higher impact to run off and potential impact to water quality. Potassium hydroxide (KOH), also known as lye, has been selected as the electrolyte for the electrolyser stacks. However, the relatively small volume required, design standards and operational health and safety procedure reduce this risk.
Ornithology	Smaller footprint, lower impact to habitat loss.	Larger footprint resulting in a higher impact to habitat loss.
Soils & Geology	Smaller footprint, lower impact to soils and geology.	Larger footprint resulting in a higher impact soils and geology. There is a potential risk of soil contamination with the presence of Potassium hydroxide required as an electrolyte. However, the relatively small volume required, design standards and operational health and safety procedure reduce this risk.
Hydrology & Hydrogeology	Smaller footprint, lower impact to hydrology and hydrogeology.	Larger footprint resulting in a higher impact hydrology and hydrogeology through increased run-off. Potassium hydroxide (KOH), also known as lye, has been selected as the electrolyte for the electrolyser stacks. There is a potential for this to impact water quality should it enter the local hydrology or hydrogeology. Potassium hydroxide is used only in the closed-loop electrolysis process and will not enter the waste water stream. The water treatment system, monitoring and regulated discharge with the ability to stop discharge should contamination occur reduces this risk.

Air & Climate	Shorter lifecycle so higher impact of waste production. Higher energy efficiency (80-90%) so less energy wasted in production. Lower operational temperature so lower cooling demand. Faster response to input power changes, stronger adaptability to renewable energy with load fluctuation, and is more suitable for renewable energy power generation and hydrogen generation.	Longer lifecycle so less waste and associated emissions. Slightly lower energy efficiency (70-80%) so more energy wasted in production. Higher operational temperature so higher demand for cooling. Longer start up time, potential loss of production. Tried and tested at commercial production volume, lower risk of failure and requirement to replace equipment.
Criteria	**PEM**	**AWE**
Noise	Neutral	Neutral
Material Assets	Smaller developed area, slightly smaller impact to land use change.	Larger developed area, slightly higher impact to land use change.
Landscape & Visual	Neutral	Neutral
Cultural Heritage	Smaller Proposed Development area, potential smaller impact to undiscovered cultural artifacts.	Larger Proposed Development area, potential higher impact to undiscovered cultural artifacts.
Traffic and Transport	Will need to be maintained/replaced more often, higher impact to traffic during delivery.	Longer life cycle, will need to be replaced less often and lower impacts to traffic and transport.
Major Accidents and Natural Disasters	Slightly lower impact due to no electrolyte required.	Slightly higher impact due to presence of Potassium hydroxide (KOH).

Both alternative electrolysis technologies were found to be potentially viable options, however PEM is a newer technology at this stage in the design process and less commercially proven. It was decided that despite its larger footprint and the addition of lye as the electrolyte solution used, AWE technology was selected as the preferred alternative as it is the most reliable and viable option due to maturity of the technology and lower production costs.

3.12.2 Hydrogen Storage and Transport Options

Due to wind farms generally being located in upland areas due to wind resources, and remote areas due to required setback distances, green hydrogen produced from wind energy is likely to be generated at a distance from demand areas, such as industrial or urban centres. Therefore, hydrogen needs to be stored and transported.

Three alternatives were considered to store and transport the green hydrogen to end users:

- **Compressed storage**; Compressed hydrogen storage is the most established hydrogen storage technology; it involves the physical storage of compressed hydrogen gas in high-pressure vessels which can be transported via road by tube trailers.
- **Liquified storage**; Hydrogen stored as a liquid. The hydrogen has to be cooled to 253°C and stored in insulated tanks to maintain this low temperature and minimize evaporation and can then be transported by road. This requires complex equipment and is expensive. Complexity and cost have limited the use of liquified hydrogen to date. Some of the biggest users include the semiconductor chip industry.
- **Pipeline Hydrogen Storage;** Gaseous hydrogen can be transported through pipelines much the way natural gas is today. This is a low-cost option for delivering large volumes of hydrogen but with high capital costs. There is a potential that the existing gas pipeline in Ireland can be adapted to carry a blend of natural gas and hydrogen.

The environmental impacts of the three storage and transportation alternatives are considered in **Table 3.17**.

Table 3.17: Alternative Hydrogen Storage and Transport Option

Criteria	Liquefied storage	Pipeline Hydrogen Storage	Compressed storage

Population & Human Health (incl. Shadow Flicker)	More potential uses of hydrogen in industry and transport. More flexibility in where hydrogen can be transported to due to use of the road network rather than a pipeline. More positive benefits to local community by availability of hydrogen locally.	Higher short term disturbance due to pipeline construction. Lower local positive benefits as pipeline transports hydrogen to fixed locations.	More potential uses of hydrogen in industry, home heating and transport. More flexibility in where hydrogen can be transported to due to use of the road network rather than a pipeline. More positive benefits to local community by availability of hydrogen locally.
Terrestrial Ecology	Higher impacts due to larger footprint and more habitat disturbance and loss. Higher impacts due to liquid nitrogen refrigeration system which could pose a hazard if leaks occur.	Higher impact to habitat loss due to pipeline excavations.	Lower impact due to smaller Footprint.
Aquatic Ecology	Larger developed area and higher potential for run off into water courses, impacting	Higher impact to water quality during construction of pipeline.	Lower impact due to smaller footprint.

Criteria	Liquefied storage	Pipeline Hydrogen Storage	Compressed storage
	water quality and aquatic ecology. Higher impacts due to liquid nitrogen refrigeration system which could pose a hazard if leaks occur.		

Ornithology	Higher impacts due to larger footprint and more habitat disturbance and loss. Higher impacts due to liquid nitrogen refrigeration system which could pose a hazard if leaks occur.	Higher impact of habitat disturbance along pipeline route.	Lower impacts due to smaller footprint and less habitat disturbance and loss.
Soils & Geology	Higher impacts due to larger footprint and higher volume of materials to be excavated. Presence of liquid nitrogen on Hydrogen Plant Site increases risk of contamination.	Higher impact due to soil excavations for pipeline.	Lower impact due to smaller footprint.
Hydrology & Hydrogeology	Larger developed area and higher potential for run off into water courses, impacting water quality. Presence of liquid nitrogen on Hydrogen Plant Site increases risk of contamination.	Higher impacts to hydrology from excavations for pipeline.	Lower impact due to smaller footprint.
Air & Climate	Higher energy requirement so loss of some renewable energy produced. More equipment is needed and equipment lasts less time and so produces more waste.	Increased pay back time due to increased soil excavations for pipeline.	Longer lifecycle of equipment, reduction in waste.
Noise	Higher noise impact due to high demand cooling requirements and additional auxiliary equipment required.	Lower impact due to less compressors required.	Noise impacts from compressors, however the equipment will be housed in suitable structures and/or designed to

			minimise the impact.
Criteria	**Liquefied storage**	**Pipeline Hydrogen Storage**	**Compressed storage**
Material Assets	Larger footprint, more land take required, higher impacts to material assets, including agriculture and forestry.	Negative impacts to land take for pipeline	Smaller footprint, less land take required.
Landscape & Visual	Liquefied gas is stored in large tower, potential for higher negative visual impacts due to visibility.	Lower impacts, during operational phase as pipeline under ground.	Compressors and filling equipment have a low profile so are less visible and have a lower impact.
Cultural Heritage	Slightly higher risk to undiscovered cultural heritage due to larger footprint.	Higher potential for impacts to undiscovered cultural heritage along pipeline route.	Slightly lower risk to undiscovered cultural heritage due to smaller footprint.
Traffic and Transport	Higher density so less tube trailers on roads.	Disruption during construction works for pipeline. Lower operational impacts and no additional vehicles on road network.	Less dense than liquid hydrogen so more tube trailers required, higher impacts to traffic and transport.
Major Accidents and Natural Disasters	Higher impacts due to liquid nitrogen refrigeration system. Hydrogen stored in volume limited by the size of the tube trailers, lowers impacts.	Potential risk of under ground leak in pipeline. Volume of stored hydrogen in the pipeline increases risks of major accidents.	Hydrogen stored in volume limited by the size of the tube trailers, lowers impacts.

Compressed hydrogen storage was selected due to it being the most commonly used and best understood method of storage and transport for the green hydrogen produced.

Compressed gas storage is currently used to transport a number of compressed gas products on Ireland's roads including natural gas, compressed air, nitrogen and oxygen. It is the most economical for shorter transport distances and allows for scaling of the project as storage cylinders and tube-trailers can be added as the project reaches maximum capacity. Liquified storage and transport was considered due to its higher density and thus lower storage volume, requiring fewer transportation vehicles. However, it requires a higher energy input and a cooling system such as vapor-compression cycle which introduces additional hazards such as liquid nitrogen, an increased facility footprint, greater visual impact and greater noise implications. Pipeline transport is economical over large distances and volumes however it was not considered a viable alternative due to the distance to the gas network in Ireland (5.9 km southwest in Ballina) and the current regulatory restrictions regarding injecting hydrogen into the gas network in Ireland. Compressed storage offers the flexibility of delivering the green hydrogen anywhere with road access and the reduced footprint reduces impacts to ecology, hydrology and hydrogeology and soils and geology. The lower height of compressed storage has a lower visual impact than liquefied storage and the reduction in cooling requirements makes the process more efficient and the process is quieter, reducing noise impacts on sensitive receptors.

3.12.3 Cooling system

Electrolysers require cooling systems, a fin fan cooling system was selected as the preferred technology at the Hydrogen Plant Site. During the design process an alternative process was considered which utilized a water-based cooling system. This system required a higher demand of water in addition to the water required for electrolysis The environmental impacts of fin fan cooling and water based cooling systems are considered in **Table 3.18**.

Table 3.18: Environmental Impacts of Fin Fan Cooling And Water Based Cooling

Criteria	Fin Fan Cooling System	Water based cooling system
Population & Human Health (incl. Shadow Flicker)	No additional water requirements, lower impacts to downstream fisheries.	Water inputs and outputs have a potential to impact nearby watercourses and habitat for salmon fisheries which is an important part of the local tourism industry.
Terrestrial Ecology	No additional water requirements, lower impacts to terrestrial ecology.	Water inputs and outputs have a potential to impact nearby habitat including degraded peatland.

Aquatic Ecology	No additional water requirements, lower impacts to aquatic ecology.	Additional water input needed, potentially higher impacts to water dependent habitats. Additional potential impact of water discharge from cooling system, higher impacts to water quality and change in temperature.
Ornithology	No additional water requirements, lower impacts to ornithology.	Potentially higher impacts to bird habitat due to water inputs.
Soils & Geology	No additional water requirements, lower impacts to peat soils.	Potentially higher impacts to peat soils due to water inputs and outputs.
Hydrology & Hydrogeology	No additional water requirements, lower impacts to hydrology and hydrogeology.	Additional water input needed, potentially higher impacts to nearby water courses due to abstraction. Additional potential impact of water discharge from cooling system, higher impacts to water quality and change in temperature.
Air & Climate	Neutral	Neutral
Criteria	**Fin Fan Cooling System**	**Water based cooling system**
Noise	Slightly higher impacts due to fin fan noise.	Slightly lower impacts due no fan noise.
Material Assets	Neutral	Neutral
Landscape & Visual	Neutral	Neutral
Cultural Heritage	Neutral	Neutral
Traffic and Transport	Neutral	Neutral
Major Accidents and Natural Disasters	Reduced risk of leaks damaging electrical equipment.	Increased risk of leaks potentially damaging electrical equipment.

A fin fan cooling system was selected due to the reduced water requirement and the related reduction in potential impacts to ecology, hydrology, hydrogeology and soils compared to a water-based cooling system.

3.12.4 Water for hydrogen production

A number of potential sources of water for the hydrogen production process were considered:

- Abstracting groundwater by drilling boreholes and combining with a rainwater harvesting system
- Abstracting water from a nearby watercourse (e.g. Glenree River)
- Desalination and transporting water in from the sea, for example near Enniscrone
- Connection to watermain from local group water scheme

The Environmental impacts of obtaining water from Glenree River, Transporting Desalinated Water in, Connecting to Irish Water and using groundwater complemented by rainwater harvesting is compared in **Table 3.19.**

Table 3.19: The environmental impacts from obtaining water from Glenree River, Transporting Desalinated Water in, Connecting to Uisce Éireann and using groundwater complemented by rainwater harvesting.

Criteria	Water from Glenree river	Transporting desalinated water in	Connection to Uisce Éireann	Groundwater complimented by rainwater harvesting
Population & Human Health (incl. Shadow Flicker)	Higher potential impacts downstream by reducing water flow in local watercourse could include impacts to water supply for agriculture and fishing. This could also potentially negatively impact the tourism industry.	Higher volume of traffic to Hydrogen Plant Site. Slightly higher positive impact to employment through water transportation.	Neutral	The conclusion of the Ground Water Supply Assessment was that the combination of the two boreholes was sufficient to supply the expected water demand of the Hydrogen Plant Site without depleting the aquifer or impacting the wells nearby. Impact on the aquifer can be further reduced by harvesting rainwater and management of onsite storage volumes to reduce the need to abstract groundwater at peak flow rates.
Terrestrial Ecology	Potentially higher impacts downstream to terrestrial habitats due to reduce flow in local rivers.	Neutral	Neutral	Neutral

Aquatic Ecology	Potentially higher impact to aquatic ecology by reducing watercourse flow and higher risks to integrity of aquatic habitats in the water course.	Neutral	Neutral	Neutral
Ornithology	Potential impacts to wetland bird species down stream due to reduced flow.	Neutral	Neutral	Neutral

Criteria	Water from Glenree river	Transporting desalinated water in	Connection to Uisce Éireann	Groundwater complimented by rainwater harvesting
Soils & Geology	Potential impact to downstream soils.	Neutral	Neutral	Minor soils and geology impact due to drilling boreholes.
Hydrology & Hydrogeology	Reduction in flow of local water course could potentially have negative impacts to local hydrology.	Neutral	Neutral	The conclusion of the Ground Water Supply Assessment was that the combination of the two boreholes and the rainwater harvesting was sufficient to supply the expected water demand of the Hydrogen Plant Site without depleting the aquifer or impacting the wells nearby.

Air & Climate	Neutral	Emissions from transportation vehicles increase negative impacts to air quality and climate.	Neutral	Neutral
Noise	Neutral	Higher noise impacts from transportation vehicles.	Neutral	Water abstraction equipment slightly increases noise impact and will be assessed along with all other equipment.
Material Assets	Neutral	Neutral	Neutral	Neutral
Landscape & Visual	Neutral	Higher potential visual impact from transportation vehicles.	Neutral	Neutral
Cultural Heritage	Neutral	Neutral	Neutral	Neutral
Criteria	**Water from Glenree river**	**Transporting desalinated water in**	**Connection to Uisce Éireann**	**Groundwater complimented by rainwater harvesting**
Traffic and Transport	Neutral	Negative traffic and transport impacts from higher volume of vehicles on the roads.	Neutral	Neutral
Major Accidents and Natural Disasters	Neutral	Neutral	Neutral	Neutral

The connection to Uisce Éireann (Irish water), while having minimal environmental impacts would be a metered connection and the costs would be prohibitive if the Hydrogen Plant were to entirely rely on this for the long term. It was also considered that any faults, leaks or issues with the water network in the local area could potentially impact the production of hydrogen, so the Uisce Éireann connection alone was not considered adequately resilient. It was considered that taking water from nearby watercourses could potentially impact aquatic ecology and downstream hydrology, aquatic ecosystems and fishing. Transporting water in would have negative impacts to traffic and transport and introduce higher emissions from vehicles.

Groundwater abstraction was deemed to be the most suitable and reliable method of obtaining water for the plant. The conclusion of the Ground Water Supply Assessment, that can be found in **Appendix 9.8**, was that the two boreholes can supply the expected water demand of the Hydrogen Plant without materially depleting the aquifer or impacting the wells nearby. Hydrochemical testing on the groundwater was carried out during site investigations, the results show that the water quality is suitable for the electrolysis process following water treatment. The addition of rainwater harvesting reduces the volume that needs to be pumped from underground.

It was decided that a metered connection to the watermain from Uisce Éireann will be used as backup in the event that monitoring indicates that the aquifer is being impacted due to groundwater abstraction for the Hydrogen Plant.

Therefore, it was considered that abstracting groundwater from boreholes, supplemented with harvested rainwater and with a backup supply to Uisce Éireann was the most favourable option. This method does not require additional vehicles on the road, reducing impacts to traffic and transport. It also avoids impacts to aquatic habitats and hydrology by not abstracting water from the nearby watercourse. The impacts to hydrogeology and local water sources (wells) and agricultural lands of ground water abstraction were considered, and site investigations have shown the groundwater to have the capacity to sustainably supply enough water for the Hydrogen Plant without materially depleting the aquifer and impacting lands or water sources in the locality.

3.12.5 Water storage alternative options

Consideration was given to storing water on at the Hydrogen Plant for the electrolysis process. The alternative options considered were:

- Pumping abstracted water directly from groundwater into the water treatment system

- Using an above ground tank providing 636 m^3 volume of stored water adjacent to the water treatment building to store water prior to treatment.
- Using large, underground storage tanks consisting of two cylindrical underground precast concrete storage tanks with a diameter of 46.65 m and a depth of 5 m, giving a total usable storage volume of 12,816 m^3 volume of water (providing for 1 in 100 year attenuation void). These will be located under the tube trailer parking area. Water will be transferred to the water treatment building as and when needed.

The environmental impacts of the three water storage alternatives are considered in **Table 3.20**.

Table 3.20: Environmental Impacts of the three water storage alternatives.

Criteria	Below ground water storage	Above ground water storage	Water pumped directly to water treatment system
Population & Human Health (incl. Shadow Flicker)	Neutral	Neutral	Neutral
Terrestrial Ecology	Tanks are underground so above ground footprint is reduced, resulting in smaller habitat loss and disturbance impacts.	Larger footprint will result in greater habitat loss and disturbance.	Smaller footprint has a lower impact to habitat loss and disturbance.
Aquatic Ecology	Smaller footprint has a lower potential impact to water quality through run off.	Larger footprint will result in greater potential impact to water quality through run off.	Smaller footprint has a lower potential impact to water quality through run off.
Ornithology	Smaller footprint has a lower impact to habitat loss and disturbance.	Larger footprint will result in greater habitat loss and disturbance.	Smaller footprint has a lower impact to habitat loss and disturbance.
Soils & Geology	Higher impact due to more excavations required for underground tanks.	Lower impact due to smaller excavations required.	Lower impact due to no excavations required for tanks.

Hydrology & Hydrogeology	Smaller footprint results in a lower potential impact to hydrology and hydrogeology.	Larger footprint increases the potential for silt laden runoff to enter receiving watercourses.	Smaller footprint results in a lower potential impact to hydrology and hydrogeology.
Air & Climate	Storing large a volume of water significantly improves the resilient of the project and reduces the risk of hydrogen production being impacted by water	Storing water improves the resilient of the project and reduces the risk of hydrogen production being impacted by water fluctuations and equipment breakdown	Any disruptions to water supply could potentially result in reduced output or stopping operations leading to reduced positive impacts of green hydrogen supply to
Criteria	**Below ground water storage**	**Above ground water storage**	**Water pumped directly to water treatment system**
	fluctuations and equipment breakdown. This increases the output of renewable energy, improving the contribution of the project to improving air quality, renewable energy targets and climate change mitigation.	somewhat. This increases the output of renewable energy, improving the contribution of the project to improving air quality, renewable energy targets and climate change mitigation.	displace fossil fuels. This reduces the contribution of the project to improving air quality, renewable energy targets and climate change mitigation.
Noise	Higher short term noise impacts during the construction phase due to excavations for the water tank.	Lower short term noise impacts during construction phase.	Lower noise impacts during construction phase.
Material Assets	Underground storage reduces the footprint and the land take. The large volume of water storages reduces the risk that the backup water connection to	Larger footprint results in a slightly larger land take.	Smaller footprint results in a lower land take.

	Irish Water will be required.		
Landscape & Visual	Low impact due to storage tank being underground.	Higher impact due to water tanks being above ground.	Low visual impact.
Cultural Heritage	Larger area of excavation required results in a bigger potential impact on undiscovered cultural artifacts.	Larger footprint would result in a bigger impact on undiscovered cultural artifacts.	Reduced footprint means lower risk of impact to undiscovered cultural artifacts.
Traffic and Transport	Higher impact to traffic and transport due to larger volume of spoil required to be removed from site due to excavations for underground tank and increased number of delivery vehicles required for precast concrete tank sections.	Lower volume of spoil excavated and removed from site, lower impact to traffic and transport.	Lower volume of spoil excavated and removed from site, lower impact to traffic and transport.
Major Accidents and Natural Disasters	Neutral	Neutral	Neutral

It was considered that without a large volume of stored water, the electrolysis process was potentially vulnerable to fluctuations in water supply. The preferred alternative of utilizing underground water storage was selected due to its potential of providing a larger amount of water storage and increasing the resilience of the project to fluctuations in supply and mitigating against equipment breakdown. This is despite its higher impacts to soils and geology due to the increased excavations required, and the related increases in traffic during construction. By moving the storage underground, the footprint of the Hydrogen Plant is reduced, this reduces the impacts to habitat loss and disturbance and slightly reduces the visual impact.

3.12.6 Waste water discharge

Wastewater is generated from the Hydrogen Plant water treatment process. This wastewater will be treated by means of a septic tank (welfare waste) and series of constructed wetland and regulated discharge (combined welfare and processes wastewater). Apart from the discharge of the trade effluent from the Hydrogen Plant and effluent from welfare facilities on site, there are additional risks to aquatic environment from the accidental spillage or release of chemicals or other pollutants. A range of chemicals will be used within the Hydrogen Plant which include:

- Potassium Hydroxide (KOH) for the electrolysis process (lye).
- Sodium bisulphite for de-chlorination of mains water, should it be used for process.
- Antiscalant used to prevent/reduce scaling of water treatment equipment (i.e. from build-up of salts and calcite).
- Glycol for coolant.
- Oils used by hydraulic systems, compressors and transformers and diesel,
- Facility cleaning chemicals.

The wastewater arising from the Hydrogen Plant will be treated through constructed wetlands and regulated discharge rates before being discharged to the Dooyeaghny River to the south of the Hydrogen Plant. Unmitigated discharging to surface waters will potentially impact adversely on the receiving surface water quality and potentially human health and the aquatic environment if these enter drinking water supplies or surface/ground water. The water treatment process, controls to avoid risks of accidental spillage or release of chemicals, controlled discharge and assimilative capacity of the receiving waters will mitigate this risk.

Alternative methods of discharging this wastewater considered were :

- Removal offsite for treatment and disposal by licenced contractor.
- Wastewater treatment on site by watering down with harvested rainwater to dilute mineral content and recharge to groundwater.
- Wastewater treatment on site by constructed wetland and discharge into local watercourse.

A comparison of the environmental impacts of the three options is shown in **Table 3.21.**

Table 3.21: The environmental impacts of removing wastewater off-site to a treatment facility, recharging wastewater to groundwater and using a constructed wetland wastewater treatment process and discharging to local watercourse.

Criteria	Discharge to offsite treatment	Recharge to Groundwater	Constructed Wetland and Discharge to local watercourse.
Population & Human Health (incl. Shadow Flicker)	Increased volume of traffic during operational phase of Hydrogen Plant higher impacts to traffic and potential nuisance to people.	Potentially higher risk of aquifer and therefore water supply contamination.	Potentially higher impact to aquatic habitats which could impact fishing and tourism downstream. However water treatment systems and emissions regulations reduce these impacts to imperceptible. Reduced risks of groundwater contamination due to no discharge to the aquifer, this reduces potential impacts to local wells used for drinking supplies and agricultural uses.
Terrestrial Ecology	Without a water treatment system on site, the Hydrogen Plant has a smaller footprint, which results in a lower impact to habitat loss and disturbance.	Groundwater discharge after dilution results in a smaller footprint with a lower impact to habitat loss and disturbance.	Constructed wetlands have a larger surface area and increase the Hydrogen Plant footprint which results in a higher impact to habitat loss and disturbance.
Aquatic Ecology	Lower risk to water quality as wastewater transported off the Hydrogen Plant Site.	Potentially higher risk of aquifer contamination and therefore water quality and higher impacts to aquatic ecology.	Potentially higher impact to aquatic habitats downstream. However water treatment systems, compliance with discharge licence and monitoring reduce

			these impacts to imperceptible.
Ornithology	Smaller footprint results in lower impacts to habitat loss and disturbance.	Smaller footprint results in lower impacts to habitat loss and disturbance.	Larger footprint results in higher impacts to habitat loss and disturbance.

Criteria	Discharge to offsite treatment	Recharge to Groundwater	Constructed Wetland and Discharge to local watercourse.
Soils & Geology	Smaller footprint requires less excavations and soil disturbance, lower impact to soils and geology.	Minor increased impact to soils and geology due to drilling additional boreholes to allow discharge to groundwater.	Larger footprint increases soil disturbance, higher impact to soils and geology. No additional boreholes required, slight reduction in impacts to soils and geology.

Hydrology & Hydrogeology	No discharge of wastewater on site reduces the impacts to local hydrology and hydrogeology.	Potentially higher risk of aquifer contamination and higher potential impacts to groundwater quality.	Creation of constructed wetlands provides naturebased water attenuation on the Hydrogen Plant Site, reducing the potential for rapid run off and the release of suspended soils reducing the impacts to hydrology and hydrogeology and flood risk. Potentially higher impacts to water quality downstream. However, water treatment systems, compliance with discharge licence and monitoring reduce these impacts to imperceptible. Lower impacts to hydrogeology as no wastewater is recharged to the aquifer, this reduces the impacts to groundwater quality and reduces the risks of contamination of water sources.
Air & Climate	Increased vehicle requirement increases the dust and vehicle emissions and increases impacts to air quality and climate.	No additional vehicles, reduced effects of dust and emissions and reduced impacts to air quality and climate	No additional vehicles, reduced effects of dust and emissions and reduced impacts to air quality and climate.

Noise	Increased operational phase traffic increases long term noise impacts on nearby sensitive receptors.	Slightly increased noise impacts during construction of additional boreholes. Potentially slightly increased noise impacts on nearby sensitive receptors.	Increased construction phase noise impacts due to creation of constructed wetlands. Potentially increased noise impacts on nearby sensitive receptors.
Criteria	**Discharge to offsite treatment**	**Recharge to Groundwater**	**Constructed Wetland and Discharge to local watercourse.**
Material Assets	Higher impact to licenced wastewater treatment facilities by increasing volumes to be treated.	Dealing with the wastewater onsite reduces the wastes that are required to be processed elsewhere.	Dealing with the wastewater onsite reduces the wastes that are required to be processed elsewhere. Larger land take requirement for increased footprint.
Landscape & Visual	Reduced footprint slightly reduces the visual impacts.	Reduced footprint slightly reduces the visual impacts.	On site water treatment slightly increases the visual impacts of the Hydrogen Plant Site by increasing the footprint, however the constructed wetlands are low profile, screened from view and will be designed to assimilated in to the surrounding landscape.
Cultural Heritage	Reduced footprint means lower risk of impact to undiscovered cultural artifacts.	Reduced footprint means lower risk of impact to undiscovered cultural artifacts.	Larger footprint would result in a bigger impact on undiscovered cultural artifacts.

Traffic and Transport	Higher impact from increased vehicles on roads long term during the operational phase of the development.	No additional road vehicles required, reduced impact to traffic and transport.	Slight increase in construction phase vehicles required for constructed wetlands, however no additional operational phase vehicles required.
Major Accidents and Natural Disasters	Neutral	Neutral	Neutral

The volume of wastewater requiring transportation and the associated impacts to traffic and transport, noise and disturbance impacts to local residents deemed the transportation of wastewater off site unacceptable. Transporting wastewater offsite also increased longer term operational costs and impacts to local wastewater facilities. Recharging to groundwater was found to have high potential water quality, hydrology and hydrogeology impacts. It was therefore decided that using constructed wetlands and discharge to the Dooyeaghny River was the preferred option, this is despite its increased footprint and the related impacts to habitat loss and land take.

3.13 SUMMARY AND CONCLUSIONS

This chapter has described the reasonable alternatives considered as part of the iterative design process for Wind Farm and Hydrogen Plant.

There is an existing planning permission on the Wind Farm Site for 21 wind turbines. The proposal is to upgrade these to larger and more efficient wind turbines and reduce the number, to 13 no. wind turbines, increasing the capacity from 48 MW to between 65 MW and 78 MW and introducing a Hydrogen Plant. The Wind Farm Site has been shown to be a suitable location given consideration of the main criteria of distances from inhabited houses, wind speeds and available Grid Connection. The chosen layout and design take into consideration constraints to minimize habitat disruption and loss and maximize wind resource. Alternative wind turbine numbers and layouts were considered through a process of mitigation by design. The Grid Connection route was amended following guidance from EirGrid.

Following extensive consultation with local communities and several design iterations, the Hydrogen Plant Site was located adjacent to the National primary road N59, five reasonable alternatives for the location of the Hydrogen Plant were considered including adjacent to the Wind Farm Site. The selected location avoids high volumes of

traffic on local roads, ecologically sensitive areas, proximity to sensitive receptors and has a sustainable water source.

Alternative technologies were considered for the hydrogen production, storage and cooling and the most favourable options selected. Options for processes to obtain the required volume of water were considered as were disposal methods for discharging wastewater. Alternatives were considered for other individual elements of the project including location of the Wind Farm Substation and sourcing of materials.

The final layout and components of the Wind Farm and Hydrogen Plant assessed through this EIAR are considered to represent the optimal design which maximises the potential benefits of producing renewable energy while minimizing the potential environmental impacts.

Appendix 3

Email from Chief Fire Officer Tipperary CoCo.

From: [redacted] <[redacted]@tipperarycoco.ie>
Date: Mon, Feb 16, 2026 at 4:58 PM
Subject: Request for Fire & Emergency Response Considerations – Proposed Industrial Anaerobic Digestion Facility, [redacted]
To: [redacted]

[redacted]

I refer to your enquiry below regarding the "Fire & Emergency Response Considerations" re. proposed Anaerobic Digestion facilities in Ballymackey. There are predominantly two primary pieces of legislation that this Fire Authority operate under to regulate fire safety within the built environment;

- Building Control Act 1990 (as amended) - applies to new works to buildings to which the Building Regulations apply such as fire safety (Part B of the regulations),
- Fire Services Acts 1981 & 2003 - applies to buildings regardless of their age and Section 18(2) mandates for "reasonable" fire safety measures and procedures to ensure the safety of persons on a premises should a fire occur.

Fire safety provisions under both those pieces of legislation relate to life safety and do not extend to property protection or environmental protection should a fire occur.

Under Section 13 of the Fire Services Acts 1981 & 2003, the Fire Authority may offer advice and guidance to the Planning Authority in relation to planning applications. As such, we are notified by the Planning Authority where developments are submitted for planning permission that may require our input.

However, I wish to highlight that anaerobic digesters are not considered buildings and as such do not fall under either piece of legislation quoted above. Any buildings associated with an Anaerobic Digestion facility such as intake buildings, storage buildings, admin buildings etc, would be the subject of the Fire Safety Certificate process to demonstrate compliance with fire safety aspects of building regulations including storage of any high fire hazard materials.

With regards to your enquiry on the resources required for a major incident, this is dependent on the nature and type of emergency encountered - resources are mobilised by Munster Regional

Control Centre (MRCC) based on the information received from the 999 / 112 caller. Tipperary Fire and Rescue Service operate 12 fire stations throughout the County with a number of specialist equipment such as water tankers and hydraulic platforms also available. Furthermore, where resources require, local arrangements are in place with neighbouring counties to provide additional fire service assistance and resources.

In general, these facilities are regulated by the Environmental Protection Agency (EPA), who may request a fire risk assessment to mitigate for environmental risks should a fire occur. As per above, environmental risks from a fire are not covered by the legislation that the Fire Authority operate under.

Regards,

[redacted]

Acting Chief Fire Officer,

Tipperary Fire & Rescue Service

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