Inspector's Report

ABP-314474-22

Development	Construction of 6 x 2-storey data centre buildings, associated structures & all ancillary site works. EIAR & NIS submitted.
Location	Tooreen, Cahernalough & adjacent townlands, Tulla Road, Ennis, Co. Clare.
Planning Authority	Clare County Council
Planning Authority Reg. Ref.	21/757
Applicant(s)	Art Data Centres Ltd.
Type of Application	Permission
Planning Authority Decision	Grant permission
Type of Appeal	3rd Party x 7
Appellant(s)	An Taisce Futureproof Clare Friends of the Irish Environment Clare Green Party

	Christine Sharpe
	Martin Knox
	Colin Doyle
Observer(s)	Cllr. Johnny Flynn
	Bernadette Lyons
	John Conway & Louth Env. Group
	Martin Burke
	Amazon Data Services Ltd.
Date of Site Inspection	3rd September 2022
	13th October 2023
Inspector	Karla Mc Bride

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1.0 Site Location and Description

1.1. The appeal site is located within the townlands of Toureen and Cahernalough, c.4km to the NE of Ennis in County Clare. The rural site is located on the northside of the Tulla Road (R352) and the site and surrounding area is characterised by agricultural uses. There are several dispersed houses and farm buildings in the vicinity and the lands form part of a larger area that has been designated for future development.

1.2. The site is located to the E of the M18 motorway and the Junction 13 slip road, N of the R352 (Tulla Road) and S of the L4608 local road at Cahernalough and Ballymacahill. It is bound to the N and E by agricultural land, to the W and NW by the Spancelhill Stream, and to the S by the Tulla Road. There are several dwelling houses and farm buildings located within and to the N of the site, and to the S along the Tulla Road, and there is a small residential area located on the westside of the M18. The Ennis 110kV substation is located to the W of the site and the M18 slip road, the site is traversed by several overhead electrical cables and the lands in the E section of the site are traversed by a gas pipeline along a N-S axis. The main vehicular access to the site is off the R352 (Tulla Road) in the E section of the site.

1.3. The overall c.60 ha moderately elevated site (data centre & substation) mainly slopes up gently from SW to NE. The site and field boundaries are defined by mature hedgerows, trees and stone walls, and there are pockets of woodland around the perimeter of the site and within the W and SW sections. There are several ponds within and adjacent to the site, including Toureen Lough (SW) and Ardnamurry Lough (NE). The lands mainly drain in a SW direction via surface and groundwater towards the Ballymacahill / Spancelhill Stream, which flows between 2 x attenuation ponds associated with the M18 motorway, before joining the Gaurus River to discharge S to the River Fergus and ultimately the River Shannon.

1.4. There are many European and nationally designated natural heritage sites in the wider area which include rivers, lakes, bogs, caves and buildings, that have been designated for aquatic habitats and species, water birds, raptors and bats. There are 2 x Recorded Monuments (Ringforts) within and in the vicinity of the site at the NE section, and several other features of historical interest in the surrounding area.

1.5. The substation site, which is located to the E of the data centre site, slopes up steeply from W to E. The field boundaries are also defined by mature hedgerows and there is a Ringfort in the adjoining field to the NE.

1.6. Photographs and maps on the case file describe the site and surroundings in detail.

2.0 **Proposed Development**

2.1. A 10-year planning permission is being sought for the c.60ha site comprising: -

- Data storage buildings x 6, each of which would be:
    - c.19, 790sq.m, 2 to 3 storey & c.18m high, with
    - 11 x back-up (standby) generators & exhaust flues (c.8m high), and
    - Solar panels & rainwater harvesting.
- Gas powered energy centre & Above Ground Installation (AGI):
    - c.4, 674sq.m & 12m high, with
    - 18 x lean-burn natural gas engines exhaust flues (c.25m high), and
    - Office & welfare facilities.
- Vertical farm building:
    - c.2,430sq.m. & 2-storey, with
    - c.60% growing space & 40% office space.
- New 110kV substation (SID), 2 x drop down masts & underground grid connection.
- Undergrounding of existing overhead 110kV transmission cables.
- Permanent and emergency vehicular access off the R352 (E & W).
- On-site car parking.
- Associated site works (incl. internal roads & demolition of buildings).
- Landscaping, berms & boundary treatment.
- Retention of an ecological buffer zones (c.10ha)
- Connection to & upgrade of foul sewer & mains water supply along the R352.

2.2. The following documentation was submitted with the ***Planning Application***: -

- Planning Report
- Planning Drawings & Photomontages
- Engineering Planning Report
- Flood Risk Assessment
- Design & Access Statement
- Landscape Design Strategy
- Landscape & Biodiversity Management Plan
- Arboricultural Impact Assessment Report
- CEMP & Building Demolition Report
- Road Safety Audit
- Energy & Sustainability Statement
- Engineering Solutions & High-Level Costs Report
- AA Screening Report & Natura Impact Statement (NIS)
- Environmental Impact Assessment Report (EIAR)

The EIAR was supported by ***Technical Appendices*** which included: -

- Appendix 7: Ecological surveys (incl. Bats)
- Appendix 9: Noise surveys & modelling
- Appendix 10: Photomontages & LVIA
- Appendix 11: Cultural heritage surveys
- Appendix 12: Traffic surveys & modelling
- Appendix 14: Construction & Demolition Waste Management Plan.

2.3. The following documentation was submitted as ***Further Information***: -

- Landscape & Visual Impact Assessment Figures
- Technical Note (Ground & Surface Water) - *Awn Consulting*
- Technical Note (Cooling Water Demand) - *Hurley Palmer Flatt*
- Technical Note (Emergency Report) - *Jensen Hughes*
- Sight Lighting Analysis
- Design, Layout & Visual Amenity (incl. Berm Cross Sections)
- Amended reports (incl. CEMP, Engineering & Arboricultural)

- Amended FRA & Clarification Note (incl. river modelling & flood maps)
- Amended EIAR, AA Screening & NIS reports.

This information did not result in any substantive changes to the nature, scale or layout of the proposed development as described above. The relevant sections of the EIAR and NIS were amended in response to the additional survey work and modelling exercises, with no substantive change to their conclusions.

2.4. The following documentation was submitted as ***Clarification of Further Information***: -

- Technical Note (incl. river modelling & updated maps)
  - Revised Drawing no.1240
  - Revised Appendix D (Micro Drainage Report)
  - Slope stability report (Attenuation Pond)
- Updated & consolidated EIAR, AA Screening, NIS & CEMP reports.

This information did not result in any substantive changes to the nature, scale or layout of the proposed development as described above. The relevant sections of the EIAR and NIS were amended in response to the additional survey work and modelling exercises, with no substantive change to their conclusions.

2.5. An IE Licence is required under the First Schedule of the EPA Act (as amended) for 50MW or more (Activity 2.1 Combustion of fuels in installations with a total rated thermal input or more).

2.6. There is a concurrent SID application for a 110kV (GIS) substation which would connect the data centre to the national grid via 2 x underground transmission lines (Ennis 110kV substation to the W).

3.0 Planning Authority Decision

3.1. Pre-planning meetings

A total of 4 x pre-planning meetings were held between planning authority and the applicant.

3.2. Further Information

The Planning Authority requested and received FI in respect of the following: -

1. ***Internet connections***: Assess any network extensions & associated ground works – *details of the 3 x existing connections are assessed in the EIAR, mapped details of fibre entry routes provided, no or negligible ground works required as providers have their infrastructure either in place or nearby.*
2. ***Drainage, water & flood risk***: Submit further details in relation to drainage (incl. attenuation pond seepage, borehole water quality tests, groundwater levels & flows, ground - surface water interactions, flood risks, rainwater harvesting, hydrogeology & pile-driving); water supply (incl. sources, IW connections & cooling water demand); flood risks & water quality protection: - *technical reports provided.*
3. ***Watermain***: Submit a survey on the effects of new water main along R352 & the ability of bridge to convey the flow of the Gaurus river during storm events – *IW confirmed capacity in WWTP but recommend some technical changes which have been adopted; details of existing service along bridge provided with sufficient space for new watermain with no additional flood risk predicted.*
4. ***Biodiversity***: Submit details of:- bat roost to be removed; impacts on mammal mobility; seasonal hedgerow removal; impact on fen & flush habitats (NW); examples of successful relocation of Calcareous grassland habitats; details of any habitat removal outside of project footprint that could affect other species (incl. Lesser horseshoe bat); & assess impacts of ash dieback on wooded areas – *no loss of confirmed bat roosts, 30m buffer provided, Derogation Licence sought if required; no mammals recorded within footprint & ample surrounding support habitat; no hedgerow removal during bird*

breeding season; no effect on wetland features, and water quality will be protected; details provided for grassland habitat translocation; no habitat loss outside of project footprint; and adequate compensatory tree planting.

5. ***Residential & commercial amenity***: In relation to air dispersion modelling, address "worst case" scenario in the event of a disruption to gas supplies and the use of diesel to power the engines; submit revised noise level analysis to consider overall disturbance to habitats & amenity by presenting the current baseline and expected maximum day & night-time noise levels (Incl. tonal); use different letters to describe work locations & noise sentive locations to avoid confusion; revise noise & vibration assessment to take account of any additional rock breaking; include all occupied dwellings in noise assessment – *unlikely scenario of gas supply disruption (24hrs) modelled with no perceptible change to NO_2 emissions, project plus background concentrations will have a slight impact on NO_x concentrations within sensitive ecosystems & habitats but will remain below the range of worst case critical loads with imperceptible impacts; not appropriate to apply tonal corrections to construction activities which are inherently impulsive, noise impacts on birds & mammals addressed in EIAR & NIS and imperceptible impacts predicted, predicted noise levels vs baselines already addressed in EIAR (Table 9.16); section 9.5.1 updated to include separate annotations; section 9.5.1 updated to take account of any additional rock-breaking; all locations within red line boundary will not be occupied during construction or post development & are not noise sensitive.*

6. ***Movement & access***: Submit revised drawings / details to: - reflect recommendations of the RSA; cycle lane & footpath compliance with standards; provision of tactile paving; compatibility of night time lighting with dark skies concept; confirm that the project will not access or impact upon M18 surface water drainage regime; & breakdown of infill loads for each phase of the works – *drawings & detail submitted; Site Lighting Report aims to reduce lighting impacts; surface water system for Tulla Road amended & discharge point relocated to the Ballymacahill River with no impacts on M18; and infill load numbers corrected down & movement details provided.*

7. ***Alternatives***: Give a full and comprehensive consideration to: - alternative locations; alternative use of waste heat; & alternative renewable energy sources – *location consideration & evaluation details provided (country & 4 x sites);* 2 x alternative uses for waste heat considered (re-use of DC exhaust air for indoor crop growing & reuse of high grade heat from the EC engines for district heating; Energy & Sustainability Report considered several practical & viable renewable energy sources (incl. solar panels & heat pumps), along with reusing waste heat and running the EC engines on hydrogen, when available.

8. ***Major accidents***: Address the following in the context of risks of major accidents or disasters: - evidence of no increased fire risk from adiabatic cooling; details of water supplies for firefighting & any discussions with IW; details of diesel storage (incl. volumes, safety, bunding & spillages); and fire protection strategy for all buildings - *details provided & no fire risk anticipated.*

9. ***Design, layout & visual amenity***: Provide details of the landscaped berms & associated planting – *cross sections provided for 3 x perimeter berms, 2 x berms on either side of the entrance, and 1 x berm in the NW of the site.*

10. ***Other items***: Verify availability of renewable energy from the grid & phasing over the project's lifetime; clarify if a batching plant is proposed; and ensure correct cross-referenced between documents – *renewable energy details provided (incl. current situation, future targets & status of natural gas), EC can transition from NG to Hydrogen & contribute to additional power generation;* no proposed batching plant; and cross-referencing concerns addressed.

3.3. Clarification of Further Information

The Planning Authority requested clarification of the following FI items:

a. ***Flood risk***: Clarify: - adoption of lower flood rates than OPW CFRAM for Ballymacahill River; inconsistencies in water levels vs CFRAM on Gaurus River; discrepancy in modelled discharge from the attenuation pond & predicted stormwater outflows; include risk of blockage from debris at the attenuation pond outlet; and model pre & post-development water levels to allow for comparison of peak levels (incl. R352 culvert at Aughavaddy Bridge) – *CSEA Technical Note and updated drawings confirm that the flow rates are*

marginally lower with no substantial change to EIAR conclusions; discrepancies relate to model parameters & use of unstable model simulation which has been corrected; and potential blockages addressed by mitigation (overflow channel, inspections & upstream screen gate & post development water level drawing updated). No substantial change to EIAR conclusions.

b. ***Drainage***: Clarify MicroDrainage calculations for interactions between stormwater & outlet to Ballymacahill River in relation to:- discharge rates greater than the proposed QBar rate indicate increased downstream flood volumes for the 30-year event; discrepancy in high water levels for the 1% AEP; design calculations for the attenuation pond embankment design; and demonstrate that the network can restrict the flow into the Ballymacahill River - *CSEA Technical Note clarifies that the discrepancies relate to use of unstable model simulation which has been corrected; marginal difference in water levels but the downstream flow rate does not exceed the QBar rate or affect the embankment design; and a stability & sliding analysis has been included in the embankment calculations. No substantial change to EIAR conclusions.*

c. ***Rainwater harvesting***: Clarity underuse of rainwater harvesting for coolant purposes – *CSEA Technical Note clarifies that discrepancies between the Engineering Report & the EIAR are related to typo errors which have been amended & cooling water will also come from IW.*

3.4. Decision

Following the receipt of Further Information and Clarification of FI, the Council decided to grant planning permission subject to 15 x conditions.

Condition no.1: provided for a 10-year permission.

Condition no.3: required implementation of EIAR & NIS mitigation measures.

Condition no.4 (a-g): set out detailed nature conservation requirements (incl. bat surveys, derogation licences & cordons around badger setts).

Condition no.6 (a-f): set out detailed movement and access requirements.

Condition no.7 (a-b): set out detailed landscaping requirements.

Condition no.8 (a-g): set out detailed water requirements (incl. supply, drainage & stormwater).

Condition no.11 (a-f): set out detailed archaeological requirements (incl. the appointment of an archaeologist to carry out an AIA).

Condition no.14: required the agreement of details in relation to the occupation, operation & management of the Vertical Farm building.

3.5. Planning Authority Reports

3.5.1. *Planning Reports*

1. ***First Planner's report (dated 08/09/2021):***

   Proposed development considered acceptable in principle, and FI requested in relation to the following matters (Refer to S.3.2 above for more details): -

   - Consideration of internet connections in EIAR (potential project splitting).
   - Drainage, water quality & flood risk assessment (incl. modelling).
   - Watermain connections & flood risk along road network (incl. modelling).
   - Biodiversity (incl. habitats & species).
   - Residential & commercial amenity (incl. air quality modelling).
   - Movement & access (incl. provision for pedestrians & cyclists).
   - Alternatives (incl. locations & site layout).
   - Major accidents (incl. fire escape plans).
   - Design, layout & visual amenity (incl. details of perimeter berms).
   - Other items: (incl. sources of renewable energy, batching plant & cross referencing in documents).

2. ***Second Planners Report (dated 28/04/2022):***

   Mainly satisfied with applicants' response to FI request but requested Clarification in relation to the following items (Refer to S.3.3 above for details):

   - Flood Risk Assessment (incl. modelling).

- Drainage arrangements (incl. modelling).
- Rainwater harvesting for cooling water (incl. discrepancies between the EIAR & Engineering report).

3. <u>Third Planners Report dated (dated 04/08/2022):</u>

- Satisfied with applicants' response to Clarification of FI request.
- Recommendation to grant permission subject to 15 x conditions.

3.5.2. ***Other Technical Reports***

Transportation: No objections, subject to conditions.

Area & Consulting Engineers: No objection following receipt of FI & Clarification of same in relation to several matters (incl. water quality, drainage, storm water, flood risk & transportation), subject to conditions.

Environment Section: No objection following receipt of FI & Clarification of same in relation to several matters (incl. cooling water & surface water management), subject to conditions.

Environmental Consultant: No objection following receipt of FI & Clarification of same in relation to several matters (incl. ecological surveys, air quality, water management & noise).

Chief Fire Officer: No objections following receipt of FI in relation to water supplies for firefighting & fire protection strategy.

3.6. **Prescribed Bodies**

Observations received from the following Prescribed Bodies: -

DAU/NPWS: No objection following receipt of FI in relation to: - bat roosts; mammal mobility; seasonality of hedgerow removal; extent of habitat loss outside project footprint; and impacts on wetland habitats with resultant mitigation; subject to several conditions (incl. pre-construction surveys, habitat translocation, lighting & implementation of the Biodiversity Management Plan).

DAU: Further archaeological assessment required prior to decision.

GSI: No objection, subject to consideration of relevant GSI data sources.

Irish Water: No objection, subject to conditions (incl. connection agreement).

TII: No objection, subject to compliance with relevant TII guidance & standards.

Gas networks: Noted presence of a Gas Transmission Pipeline Wayleave in the E section of the site, no objection subject to a condition requiring consultations in advance of site works.

Irish Aviation Authority: No observations.

An Taisce: Concerns raised in relation to data centre energy use & climate, fossil gas supply lock-in, pressure on national grid and water usage. No change to position following submission of FI and permission should be refused.

3.7. Third Party Observations

A total of 50 observations received from local residents, the wider community and environmental groups who raised the following collective concerns: -

- Development is not needed, sustainable or appropriate.
- Excessive scale of development in a rural area, and no provision for art.
- Several adverse direct & cumulative impacts (incl. visual, lighting, privacy, noise, health, traffic, flood risk & general disturbance).
- Adverse impacts on visual amenity, air quality, water resources, waterbodies, health, tourism and biodiversity (incl. European sites, habitats & species).
- Non-compliance with EU & national climate change goals & carbon targets.
- Non-compliance with EU Directives (EIA, Habitats, WF & SEA), and national, regional & local environmental, energy and planning policy (incl. Dev. Plan).
- Excessive consumption of electricity & power outages, use of gas to supplement energy needs, non-renewable sources should be provided & geothermal energy should have been considered.
- Insufficient details of waste heat use in Vertical Farm, should provide for large scale energy storage & district heating.
- Inconsistencies re. rainwater harvesting, storage, consumption & cooling, and lack of spare capacity in public water supplies with resultant adverse impacts.

- Excessive scale of development & traffic impacts (incl. at M18 & J13).
- Inadequate details of water & wastewater connections (incl. capacity).
- Insufficient public consultation, prematurity as per EirGrid Strategy, risk of major accident & fire & security concerns.
- Validity of application, failure to reference IE Licence & SID application required for electricity transmission (S.182B).
- Few jobs post construction.

Five submissions received in response to the FI and Clarification of FI submissions, which raised the following additional collective concerns: -

- Querry commercial viability of supplying waste heat to the Vertical Farm.
- Local growers should be encouraged to co-locate greenhouses nearby.
- Sustainability report does not deal with CO_2 emissions, only a modest contribution from solar panels, inadequate consideration of renewables.
- EIAR inaccuracies, errors in water flow modelling & rainwater harvesting discrepancies.
- No details of beneficial owner.
- Contravention of several Dev. Plan policies & objectives.
- Crypto mining companies are renting serves in data centres.
- Consider on-site generation of green hydrogen & battery storage.
- Proximity to housing estates & school.
- There should be a public enquiry.

4.0 **Planning History**

ABP-313895-22*:* concurrent SID application for a 110kV substation with 2 x underground and 2 x overhead transmission cables to N & W of appeal site.

ABP-310517-21: ABP determined that development of a substation & associated grid connection at Toureen, Ennis, is a strategic infrastructure development.

5.0 Policy Context

5.1. National and Regional policy context

National Energy and Climate Plan, 2021-2030

This Plan outlines Irelands energy and climate policies in detail for the period from 2021 to 2030 and looks onwards to 2050. The NECP is a consolidated plan which brings together energy and climate planning into a single process for the first time. It envisages a target of at least 55% renewable energy in electricity by 2030.

Climate Action and Low Carbon Development (Amendment) Act, 2021

Establishes a framework to develop the transition towards a low carbon economy.

Climate Action Plan, 2023

Seeks to tackle climate breakdown and it commits Ireland to a legally binding target of net-zero greenhouse gas emissions by 2050, an emissions reduction of 75% and to meet up to 80% of electricity demand form renewables by 2030.

National Planning Framework – Ireland 2040 (2018)

The NFP seeks to support the development of ICT infrastructure, with particular reference to data centres. NSO 6 seeks to create a strong economy supported by enterprise, innovation and skills which is underpinned by a range of objectives related to job creation, enterprise and innovation.

Regional Spatial & Economic Strategy, the Southern Region (2020)

The RSES also seeks to support the development of ICT infrastructure. RPO 8.23 seeks to support the national objective to promote Ireland as a sustainable international destination for ICT infrastructure such as data centres and associated economic activities at appropriate locations.

Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy, July 2022

This Statement updates and revises the Governments previous Statement on the Role of Data Centres, which supported the development of enabling technology and infrastructure to meet enterprise, economic and social policy goals, whist also recognising that, as large consumers of electricity, data centres also pose challenges to the future planning and operation of a sustainable power system.

This new Statement reaffirms that data is an essential enabler of our increasingly digital economy and society but that we must align the twin transitions which are both digital and green. It notes that while data centres currently account for just under 2% of all greenhouse gas emissions, they are responsible for about 14% of Irish electricity use. It acknowledges the significant capacity constraints on the electricity system in the short-to-medium term and recognizes the need to decarbonise our energy system. It also adopts a set of principles to harness the economic and societal benefits that data centres bring, while facilitating sustainable data centre development that adheres to our energy and enterprise policy objectives.

It contains the following list of Agreed Principles: -

- **Economic Impact:** preference for data centre developments associated with strong economic activity and employment.
- **Grid Capacity & Efficiency:** preference for data centre developments that make efficient use of our electricity grid, using available capacity & alleviating constraints.
- **Renewables Additionality:** preference for data centre developments that can demonstrate the additionality of their renewable energy use in Ireland.
- **Co-location or Proximity with Future-proof energy supply:** preference for data centre developments in locations where there is the potential to co-locate a renewable generation facility or advanced storage with the data centre, supported by a CPPA, private wire or other arrangements.
- **Decarbonised Data Centres by Design:** preference for data centre developments that can demonstrate a clear pathway to decarbonise and ultimately provide net zero data services.

- **SME Access & Community Benefits:** preference for data centre developments that provide opportunities for community engagement & assist SMEs, both at the construction phase & throughout the data centre lifecycle.

The Statement concludes that data centre developments which are not consistent with these principles would not be in line with government policy.

The Planning System and Flood Risk Management, 2009

These Guidelines seeks to avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere and they advocate a sequential approach to risk assessment and a justification test.

National Biodiversity Action Plan, 2022

The Plan sets out actions through which a range of government, civil and private sectors will undertake to achieve Ireland's 'Vision for Biodiversity' and follows on from the work of the first and second National Biodiversity Action Plans. It contains 119 x targeted actions which are underpinned by 7 x strategic objectives.

National Landscape Strategy for Ireland, 2015-2025

This document seeks to integrate landscape into our approach to sustainable development, carry out an evidence-based identification and description of landscape character, provide for an integrated policy framework to protect and manage the landscape and to avoid conflicting policy objectives.

5.2. Local Policy

Clare County Development Plan 2023-2029

Chapter 3: Core Strategy:

Settlement hierarchy: Ennis is designated as a Key Town.

CDP 4.1: support Ennis as a self-sustaining, regional economic driver and as a key location for investment choice in the county and the Southern Region.

Chapter 6: Economic Development & Enterprise

CDP6.27: facilitate & support the development of a data centre on the Enterprise zoned lands (ENT 3) at Toureen subject to normal planning considerations & the implementation of the findings of the SEA and AA associated with this Plan. Any planning application for this site must include an analysis of the impacts from GHG Emissions associated with both the energy & cooling systems on the environment in the context of Climate Change and our commitment in CAP 2021 to achieve a reduction of 51% in GHG emissions by 2030, relative to 2018 levels.

Chapter 19: Land Use and Zonings

CDP19.2: ensure that sufficient lands are zoned at appropriate locations.

- ***Zone ENT 3:*** seeks to provide for Enterprise (Data Centres, Office & Agri business are permissible uses).
- ***Buffer Space:*** around Toureen Pond & Ballymacahill / Spancelhill Stream
- ***Flood Zone A:*** Ballymacahill / Spancelhill Stream.

Ennis Municipal District Settlement Plans, Interim Version, April 2023

Transformational Sites TS9 – Data Centre: A site located in the Toureen area on the eastern side of Ennis has been zoned for enterprise use (ENT3). This zoning offers great potential in the short to medium term and can accommodate the economic activities required to grow Ennis as a location for significant employment. The zoning would provide for a data centre campus arrangement that can allow for future growth and the delivery of premises that may need to differ from normal commercial developments due to the changing nature of IT and data centre services.

ENT3 Toureen (TS9):
Project Ireland 2040 - National Planning Framework sets out the strategic importance of data centres in Irelands' enterprise strategy. Having regard to the Government Statement on The Role of Data Centres in Irelands' Enterprise Strategy (July 2022), which in particular recommends having a plan-led approach

to data centres, this 55ha site has been identified and zoned as Enterprise (45ha) and Buffer (10ha) for the provision of a data centre campus due to:

- Its proximity to the electricity sub-station;
- Its proximity to the M18 motorway and adjoining regional road network;
- The location of the site relative to the gas pipeline;
- The availability of dark fibre; and
- The proximity of the site to Shannon International Airport and Ennis town.

This site is zoned to accommodate a data centre campus which consists of one or more than one structure, used primarily for the storage, management and dissemination of data and the provision of associated power electricity connections and energy generating infrastructure.

Development proposals for this site shall include the following:

- A traffic management plan for the construction and operation phase of development;
- Any proposed development shall adopt sustainable practice in terms of building design, materials, construction and operation;
- A hydrological assessment to determine the effects of the development on groundwater and groundwater quality shall be submitted with development proposals for the site;
- At the southern boundary of the site is a mesotrophic lake, which will require protection through the provision of a buffer incorporating the dense clump of trees to the west of the lake and shall be included in an overall landscape management plan for the site.
- A construction and environmental management plan shall be submitted as part of development proposals on site. This shall include a site-specific Flood Risk Assessment, a surface water management plan for the construction and operation phase of the development, a pollution prevention plan and shall incorporate principles of sustainable urban drainage systems (SuDS). During the construction phase of developments on site where applicable all relevant best practice guidelines shall be adhered to;
- An air quality impact assessment with reference to potential impacts on European Sites and the surrounding area within the zone of influence of the

proposed development shall be submitted, this shall inform Screening for Appropriate Assessment and/or Natura Impact Statement.

- A climate impact assessment which addresses the impacts of both the energy requirements and the heat generated from the facility in terms of our climate change targets as outlined in the Climate Action Plan (CAP) 2023.
- Best practice water conservation measures and water-efficient technologies will be required in any data centre development.
- The hedgerows and scrub area on this site provide a potential foraging and commuting area for wildlife including Lesser Horseshoe bats. Future development proposals must be informed by a series of bat surveys to record the known usage of the site by in particular Lesser Horseshoe bats and ensure that there is no net loss of supporting habitat. The surveys must include a full light spill modelling study. Any habitat loss must be offset by additional landscape planting to ensure connectivity across the landscape.
- Impacts of development of the site on conservation interest bird species of surrounding SPA's and breeding birds should be avoided, through protection and retention of breeding bird habitat in accordance with the Wildlife Acts. Development proposals for the site shall be accompanied by bird surveys (to include a winter bird survey) to assess the use of the site by bird species and where disturbance and/or displacement are predicted appropriate mitigation measures shall be identified. Hedgerow and treeline pruning, or removal shall be conducted outside the breeding bird season (March 01st through August 31st);
- An ecological impact assessment (designed by an appropriately qualified landscape architect and ecologist) and a habitat survey shall form part of development proposals for the site.
- A landscape and biodiversity management plan shall be submitted to provide landscape, visual and environmental screening and enhancement measures through planting and design.
- An invasive species survey and management plan (if required) shall accompany development proposals for the site.

- Development proposals shall also include an otter use survey of the site, and where disturbance and/or displacement are predicted appropriate mitigation measures shall be identified.
- A buffer will be required to be provided with regard to the location of a National Monument (CL- 034-007) on site; and
- Adequate wastewater treatment and disposal measures shall accompany development proposals for this site to ensure that there is no impact to water quality in the area.

Clare County Development Plan 2023-2029 (Cont.)

Other relevant goals, policies and objectives are summarised below.

Chapter 2: Climate Action

Goal II: A county that is resilient to climate change, plans for and adapts to climate change and flood risk, is the national leader in renewable energy generation, facilitates a low carbon future, supports energy efficiency and conservation and enables the decarbonisation of our lifestyles and economy.

CDP2.6 to 2.13: flood risk assessment & storm water management.

CDP2.14: transition to a low carbon economy & society.

CDP2.17: development of district heating including the utilisation & distribution of useful waste heat from large thermal processes.

CDP2.18: deals with use of solar thermal or solar PV installations.

Chapter 11: Physical Infrastructure, Environment and Energy

CDP11.5: encourage safe walking & cycling.

CDP11.11: safeguard motorways, national roads and strategic urban roads.

CDP11.14: preserve the carrying capacity of Strategic Regional Roads (incl. R352).

CDP11.26: deals with the WFD & RBM, protection of groundwater & surface water resources, achieve & maintain at least good water quality status, consider proposals where it can be clearly demonstrated the requirements of the RBM Plan will be met.

CDP11.27-33: protection & sustainable use of surface & ground water resources, provision of water & wastewater services, Ennis & Environs water supplies.

CDP11.40-42: noise pollution, air quality & light pollution (incl. impacts on bats).

CDP11.44 - 51: energy security, supply networks, renewable energy & storage.

CDP11.53: support & facilitate implementation of the Clare Digital Strategy 2023.

Chapter 14: Landscape

Landscape Character Type: Low Drumlin Farmland (LDF).

Landscape Character Area: Ennis / Tulla Drumlin Farmland (13 & 12).

Working Landscapes: lands within 10km of the N18/M18 (CDP14.3).

Chapter 15: Biodiversity, Natural Heritage and Green Infrastructure

CDP15.1: protect biodiversity & implement the National Biodiversity Action Plan, All Ireland Pollinator Plan, and the County Heritage & Biodiversity Plans.

CDP15.3 to 6: protect European, National & County Geological sites.

CDP15.8 to 22 protect non-designated sites, biodiversity, habitats, waterbodies, wetlands, woodlands, trees, hedgerows, and Freshwater pearl mussel.

CDP15.28: deals with Dark Sky Reserve Designations.

Chapter 16: Architectural, Archaeological and Cultural Heritage

CDP16.1-7: protect architectural heritage (incl. PSs, ACAs, historic gardens, and features of vernacular & industrial interest).

CDP8-12: protect archaeological heritage (incl. sites, features & objects of interest).

5.3. **Natural Heritage Designations**

The following European sites are located within a c.15km radius of the site:

Lower River Shannon SAC	Moyree River System SAC
Ballyallia Lake SAC	Ballycullinan, Old Domestic Building SAC
Old Domestic Building (Keevagh) SAC	East Burren Complex SAC
Dromore Woods & Loughs SAC	Ballycullinan Lake SAC
Old Domestic Buildings, Rylane SAC	Ballyogan Lough SAC
Newgrove House SAC	Lough Gash Turlough SAC
Newhall & Edenvale Complex SAC	Knockanira House SAC
Toonagh Estate SAC	Kilkishen House SAC
Poulnagordon Cave (Quin) SAC	Balliallia Lough SPA
Poulnadatig Cave SAC	Slieve Aughty Mountains SPA
Old Farm Buildings, Ballmacrogan SAC	River Shannon & River Fergus SPA
	Corofin Wetlands SPA

The following Natural Heritage sites are located within c.15km radius of the site:

Oysterman's Marsh NHA	Pouladig Cave pNHA
Maghera Mountain Bogs NHA	Poulnagordon Cave (Quin) pNHA
Newpark House (Ennis) pNHA	Ballycullinan Lake pNHA
Ballyallia Lake pNHA	Dromoland Lough pNHA
Durra Castle pNHA	Moyree River System pNHA
Inchicronan Lough pNHA	East Burren Complex pNHA
Old Domestic Building (Keevagh) pNHA	Ballyogan Lough pNHA
Dromore Woods & Loughs pNHA	Ballycar Lough pNHA
Lough Cleggan pNHA	Fin Lough pNHA
Fergus Estuary-Inner Shannon, N Shore pNHA	Lough Cullaunyheeda pNHA
Cahircalla Wood pNHA	Rosroe Lough pNHA
Newll & Edenvale Complex pNHA	Lough Gash Turlough pNHA

6.0 The Appeal

6.1. Third Party Appeals

Seven x third party appeals received in respect of the planning authority's decision:

1. An Taisce
2. Friends of the Irish Environment
3. Futureproof Clare
4. Clare Green Party
5. Christine Sharp
6. Martin Knox
7. Colin Doyle

An Taisce

Data centre energy use:

- Over-concentration of data centres in Ireland; inordinate & growing use of grid-generated electricity with resultant adverse impacts on CAP emissions targets & national climate obligations; and inadequate consideration of direct, indirect & cumulative impacts on energy demand & climate.

Climate Action & low Carbon Development (Amendment) Act 2021:

- Non-compliance with Climate Action & Climate Act (2021) emissions reduction obligations; c.80MW of energy from national grid & 120MW from on-site gas fired plant; climate impact of generating 657,000 tonnes of CO_{2eq} per year (1.1% of total emissions) is significant; inadequate analysis of compliance in EIAR & Sustainability Statement (incl. carbon budgets); EIAR not updated to reflect CAP 2021 which has higher reduction ambitions.
- Emissions from the grid & energy plant will be regulated by the EU Emissions Trading Scheme (EU ETS), however this does not negate compliance with national carbon budgets & sectoral emissions ceilings under the Climate Act.
- Over-reliance on increasing future use of renewable energy & proliferation of data centres will dilute progress to the 80% renewables target.

The EIAR:

- Inadequate consideration of macro level cumulative impacts on climate with other data centres in terms of overall national emission reduction obligations, & unacceptable to only assess micro level impacts when targets are national.
- Insufficient EIAR mitigation measures to deal with the project's carbon impact, (notwithstanding reuse of waste heat in Vertical Farm) and query viability / practicality of future connection to a district heating scheme.
- Inadequate fossil gas "lock-in" and over-reliance on future use of hydrogen in gas networks as a mitigation measure which may not be viable for years.
- Inadequate assessment of "Do-nothing scenario" on zoned lands & climate.
- Inadequate assessment of water resource impacts against up-to-date climate modelling & forecasting; no consideration of water resources during periods of low rainfall & high temperatures, or cumulative impacts in-combination with other large scale water users in the whole water supply catchment.

Pressure on National Grid:

- Attraction of data centres places significant pressure on national grid.

Water Framework Directive:

- Full Article 4 WFD assessment required to assess impacts on surface & ground water body status, and attainment of Good Status, good ecological potential & good chemical status, in line with CJEU Weser case (C-46113).
- Article 5 of Surface Water Regs. (2009) requires a public authority not to undertake functions that cause a deterioration in the water quality status.

Futureproof Clare:

- Non-adherence to statutory requirements (incl. planning, environmental, energy & emissions reductions policies, objectives & targets) and principles set out in the recent Statement on Data Centres.
- Lack of consideration of other relevant considerations (incl. amenity, precedent, public health [air quality] & safety [traffic], the common good, human rights, alternative sites & reuse of waste heat).

- Inadequate Further Information in relation to air quality & water usage, cryptocurrency mining & biodiversity loss.
- Inadequate reasons for refusal in relation to consideration of human rights.
- Non-adherence to international & EU law (incl. human rights, environmental, energy & carbon emissions reductions policies & objectives, carbon budgets & targets), and failure to prepare a County Climate Action Plan.

Friends of the Irish Environment

- Request oral hearing (public interest, energy & water consumption).
- Entire development (data centre, energy centre, transmission cables & substation) should have been submitted directly to ABP as a SID.
- Compliance with WFD required in relation to Article 4, underlying karst bedrock, turloughs & aquifer vulnerability; all year-round water supply demand; direct, indirect & cumulative impacts on security of water supply not addressed or mitigated; and material contravention of Obj. CDP2.1C.
- Development of data centres has not been subjected to SEA (DC Statement, 2022) and there are no S.28 Ministerial Guidelines for data centres.

Clare Green Party:

- Inadequate climate impact assessment, major energy user, major impacts.
- Non-alignment with the Principles for Sustainable Data Centre Development: - speculative development with no identified end-user & project cannot be evaluated; no short-term excess grid capacity; no commitment to additional renewables; no proposal for renewable generation or co-located advanced storage; unrealistic reliance on future hydrogen gas availability; and lack of community engagement.
- Contrary to the aims of the Climate Acton Plan (2021) and increases the challenge of achieving a 51% reduction in carbon emissions by 2030.
- No assessment of adverse impacts on industry & employment due to potential power shortages or outages.
- Key project in Ennis 2040 Economic & Spatial and the Council is the lead agent for the associated Designated Activity Company, which raises conflict of interest & transparency concerns, and project is contrary to several Dev. Plan Low Carbon Strategic Objectives.

- Inadequate consideration of climate & environmental issues raised by CGP & other parties (incl. climate impacts, increased use of gas & resultant carbon emissions, renewables & energy storage, water resources & enhanced rainwater storage, and reuse waste thermal energy).

Christine Sharp (and several others):

- Contrary to the proper planning, sustainable development & environmental protection of the area.
- Adverse impacts on European sites, air & water quality, wind speeds & NO_2 are not monitored locally, inappropriate reliance on back-up diesel generators.
- No mitigation for particulate matter pollution, query objectivity of applicant's ecologist, and contrary to decarbonisation policy.
- Adverse impacts on biodiversity (incl. bats, badgers, fisheries & trees).
- Traffic hazard for nearby residents, schools, pedestrians & cyclists.
- Pressure on groundwater resources, particularly during periods of high temperatures & low rainfall, and adverse effects on aquatic ecology in Ballymacahill River from contaminated discharges & run-off.
- Adverse impacts on human health in spite of hydrocarbon filters & attenuation area, and escalation of local air pollution levels in Ennis.
- Viability & quality of plants grown in Vertical Farm adjacent to energy centre.
- Excessive use of electricity by data centres at a national level.
- Query probability of useable hydrogen gas in short term.
- No additionality of renewables, unnecessary grid demands, no design for decarbonisation or biodiversity & disregard for climate action policies.

Martin Knox:

- EIA(R) lacks balance, and environmental impacts are inconsistent with EU and national climate action legislation & polices.
- Adverse impact on achieving EU & national emissions reduction targets.
- Lack of transparency & due diligence on behalf of the beneficial owners.
- Excessive use of water supplies & resources.
- Overconcentration of data centres in Ireland.
- Lack of accountability amongst decision makers.

- Democratic deficit, and Council's decision does not include the wider societal implications and environmental damage.
- Planning conditions lack balance and prioritisation.
- Decision did not take account of climate justice or other social issues.
- Submission on planning application were ignored (incl. adverse environmental impacts, inadequate public consultation & issues raised above).

Dr. Colin Doyle:

- EIAR is defective & legally flawed in its consideration of climate impacts, and overly reliant on compliance with ETS which conflicts with national policy.
- Numerous errors in EIAR in relation to energy & climate policy.
- Unsubstantiated reliance on future renewable energy provision, material contravention of Dev. Plan energy objectives &undermine national polices.
- Failure to address & seek FI in relation to energy & climate concerns,
- Internal & commissioned reports fail to engage with climate concerns, and Statement on Data Centre (2022) Principles.
- Inadequate assessment of cumulative impacts with other projects.
- Adverse impact on water supplies & over-reliance on rainwater harvesting.
- Defective climate assessment in relation to carbon emissions, decarbonisation and emissions reductions.
- Misinterpretation of national strategy on climate & legal framework.
- Segregation of project emissions from national reduction targets, & consideration of emissions as a small percentage of EU ETS emissions.
- Non-compliance with EIA Directive & Schedule 6 of the P&D Regs in relation to consideration of likely significant effects.
- Inadequate analysis of achievement of local emissions reductions & low-carbon objectives, as required by revised Annex IV of the 2011 EIA Directive.
- No estimates of CO_{2eq} emissions for the grid connected Phase 1 and subsequent phases which will be powered by on-site gas engines.
- Energy & Sustainability Statement dealt with the buildings & not estimates of operational emissions or assessments of operational sustainability.

- Inaccurate estimation of annual CO_{2eq} emissions and no breakdown of direct & indirect emissions; 657,000 tonnes/yr as per EIAR vs 785,000 tonnes/yr as per appellant's estimate (c.285,000 + 500,000 tonnes).
- Unsubstantiated claim of compliance with CAP targets and that impacts on climate would be Slight when they would be Major.
- Non-compliance with emissions reductions targets & sectoral emissions ceilings, and query electricity vs industrial project (different standards).
- Non-compliance with & contravention of Dev. Plan Low Carbon Objectives (18.4 & 3), Goals (XVII) & Core Strategy (21), and zoning objective in relation to operations, with resultant large increase in GHG emissions.
- Over-dependence on national grid (Phase 1), impact on demand for additional renewable energy generation to meet planned capacity & compensate for power consumption, with resultant impacts on meeting climate targets.
- Inadequate assessment of adverse impacts on renewable electricity policy during Phase 1, lack of consideration of mitigation (incl. power purchase agreements) & no assessment of operational energy demand & use.
- EIAR interpretation of Gas Networks Ireland projections, which show an increasing contribution of renewable gas on the gas grid, is highly speculative and unrelated to abated gas (customers who implement capture & storage).
- Revised Energy & Sustainability Statement does not assess the possibility of running the gas engines on a mix of hydrogen & natural gas.
- Imaginary reassignment of renewable component & no additionality, 120MW will be generated on-site by 2030 with no contribution from renewables.
- Reuse of waste heat in the Vertical Farm is greenwashing.
- Inadequate planning authority assessment of the impact of the project on the environment, climate & emissions reduction targets.
- No economic analysis provided; speculative development & energy intensive jobs would be provided (1600 tonnes CO2eq/yr per employee).
- Inadequate analysis or evidence provided of local spare energy & distribution capacity to power Phase 1.
- No provision of additional renewables corresponding to power demands.
- Insufficient output from existing windfarms to power Phase 1.

- Only aspect of the project that is decarbonised by design is the energy performance of the buildings (heating, ventilation & lighting).
- Speculative application with no known operator and query viability of providing district heating in absence of related infrastructure.
- Data centre would draw 907m^3/day of water from the town mains & supplement with 93m^3 of stored rainwater, only enough stored for 4 days in the event of a mains failure, note inaccuracies in EIAR calculations, with a higher dependency on town mains supply than anticipated.

6.2. Planning Authority Response No.1 (to Third Parties)

General:

- Plan-led approach which reflects national policy, IDA & Council quest for suitable DC sites, proximity to substation, M18 & Gas Pipeline, availability of Dark Fibre, and proximity to Shannon International Airport & Ennis Town.
- Key Project in the Ennis 2040 Economic & Spatial Strategy.

Issues raised:

- ***Compliance with Policy Statement on Data Centres (2022):*** satisfied that project accords with the principles of Policy Statement:
    - Employment opportunities & associated strong economic activity.
    - Large site zoned for data centre use.
    - Unconstrained area with available power supply from Ennis substation.
    - Close proximity to renewable power (wind & solar).
    - Co-delivering grid connection proximate to a main gas interconnector.
    - Close proximity to essential infrastructure (Moneypoint connection).
    - Includes an energy centre (120MW potential) which can run on gas & future hydrogen, and only 83MW required from the grid.
    - Applicant to engage commercially with end users in relation to CPPAs.
    - Water storage provision at each data hall, & IW confirmed that a connection to IW Networks can be facilitated.
    - Provision for future connection to a district heating system within 5km.
    - Reuse of low-grade waste heat In vertical farm.

- ***Adequacy of EIA***: complies with all legislative requirements, reflects any changes to the EIAR after FI & Clarification of FI, reasonable alternatives were considered, major accidents & disasters were examined, and cumulative impacts assessed, and it reached a reasonable conclusion.
- ***Complies with Climate Action & Low Carbon Act 2021, & Climate Justice/Impact:***
    - 80MW from Ennis substation & 120MW from on-site energy plant.
    - Connection to grid allows for use low carbon energy from renewables, along with future use of hydrogen given proximity to Shannon Estuary.
    - Use of Selective Catalytic Converters in engines will reduce emissions.
    - Can facilitate a future district heating system in nearby zoned lands.
    - In line with Climate Action & Low Carbon Development Act
- ***EU Targets for 2030***: consider that indirect $C0_2$ emissions from electricity to serve the facility do not count towards or affect Ireland's reduced emissions target under the EU Effort Sharing Decision and will instead be regulated under the EU Emissions Trading Scheme, which sets EU-wide targets or sectors within the scheme.
- ***Energy Usage/National Grid***: Eirgrid's connection policy provides adequate safeguards to ensure that the project does not destabilise the Grid.
- ***Additionality of renewables:*** energy centre will run on natural gas, is capable of generating 120MW, and can switch to hydrogen in the future, only 83MW required from Grid & waste heat will be reused.
- ***Water Usage & WFD***:
    - Note IW pre-connection enquiry & that rainwater harvesting will serve the cooling system.
    - Substantial separation to nearest water based European site, and natural sedimentation will attenuate any sediments in water column.
    - Site located between 2 water monitoring points along nearby watercourses.
    - Water quality status is Poor due to agricultural practices and project will improve water quality, and it will be connected to the town sewer.

- ***Air Quality***:
    - Dispersion modelling results are compliant with all National & EU ambient air quality values.
    - Impact on local & regional air quality within a 20km radius and potential impacts of emissions on sensitive species was assessed & found to comply with EU ambient air quality standards.
    - Emissions unlikely to exceed statutory limit values for NO_x with 20km.
- ***Biodiversity / Wildlife / Natura 2000 Directive***:
    - Stage 1 Screening & Stage 2 AA concluded no direct or indirect effects for any European sites subject to mitigation.
    - Condition no. 4 provides a suite of measures to protect wildlife.
- ***Transparency & Due Diligence / Democratic Deficit / Accountability***: consideration of planning application complied with all requirements.
- ***Compliance with CDP***: Full compliance with ENT3 zoning objective.
- ***Concentration of Data Centres***: complies with national & regional policy.
- ***Jurisdiction:*** satisfied that PA had full jurisdiction to assess application & associated SID substation will be assessed by ABP.
- ***Planning conditions:*** abide by basic criteria set out in Dev. Man Guidelines.
- ***SEA:*** full SEA carried out of original Variation to CDP 2017-2023.
- ***Health & Safety:*** fully addressed in the EIAR which complied with all related requirements, including consideration of major accidents and/or disasters.
- ***Common Good / Economic Impact***: employment generating enterprise.
- ***Traffic:*** adequate measures to ensure public safety.
- ***Sustainable development***: complies with proper planning & sustainable development of the area.
- ***Oral Hearing:*** sufficient information on the file to enable ABP to decide that an OH was not required.

6.3. Applicant Response to Third Party appeals

A generic summary of the applicant's response to the appeals is set out below. The submission was accompanied by several technical appendices which included: -

- Appendix 3: Environmental response by AWN Consulting.

- Appendix A: IW pre-connection enquiry.
- Appendix 4: Water Framework Directive Assessment Report.
- Appendix 5: Letters related to Corporate Power Purchase Agreement & MCRE Windfarm Ltd.
- Appendix 6: Energy & Grid Connection response by HDR Consulting Ltd.
- Appendix 7: Water & Traffic response by CSEA Consulting Engineers.
- Appendix 8: Landscape & Tree Impact by NDJ Landscape Architects.
- Appendix 9: Biodiversity / Ecology response by Scott Cawley.

EIAR (defects / errors / omissions) - Climate:

- Addressed in AWN Environment Response Report (Appendix 3 – S.1).
- EIAR fully complies with EU, national, regional & local policy.
- Methodology for assessing the significance of GHG emissions is sound.
- Energy generated & GHG emissions fall within the scope of ETS either as a result of power from the Grid or on-site generation using gas generator (diesel backup generators for emergencies), requiring a GHS permit to operate.
- ETS sets EU-wide limits for participants irrespective of geographical location, impact will be less than c.0.05% of the total EU-wide ETS market (Slight).
- Projected CO_2 emissions are based on 2018 grid mix, national fuel mix will decrease in carbon intensity as grid reaches the 80% renewables by 2030.
- ABP noted this evolution towards & that the 10-year permission would extend beyond 2030 (307546).
- Outside of EU-wide targets, the emission reductions achieved under EU ETS regulated installations will intrinsically contribute to domestic / national targets.

EIAR (defects / errors / omissions) – Cumulative Impacts:

- Addressed in AWN Environment Response Report (Appendix 3 - S.2).
- Cumulative assessment of emissions complies with IEMA Guidance which states that all global cumulative sources are relevant, and that emissions from specific cumulative projects should not be individually assessed as there is no basis for selecting one project over another.
- There will be no additional cumulative impact of note from proximate projects.

- No EIA Directive requirement for national or sectoral cumulative assessment.
- EU/CJ position is that cumulative impacts relate to “the aggregation of the individual project with other projects in the sensitive area of its location.”
- Impacts of projects on Climate Change also addressed in SEA or FRA.
- All relevant emissions data have been provided (incl. project, proximate sources & national reduction targets).

National Climate Action Plan / CAP 2021 (alleged non-compliance):

- Addressed in AWN Environment Response Report (Appendix 3 - S.3).
- Overview of compliance with all relevant documents & resultant assessment concludes that the project complies with the plans, strategies & objectives.
- Compliance with the 2021 CAP & National Adaptation Framework assessed with particular respect to points set out in S.15 of the 2021 Climate Action Act.
- Project aligns with all key climate objectives.

Statement on the Role of Data Centres (alleged non-compliance):

- Planning Officer’s report specifically refers to the 2022 Statement (Pg. 34) and the project was assessed as being broadly compliant with the 6 x Principles.
- Engaging with renewable energy provider to offset energy usage (CPPA) in line with the Principle of Additionality.
- Willing to accept a similar condition attached by Fingal (FW21A/0151), but request that the provider is not specified (pg. 17/18 of Response to appeals).
- Project complies with the 6 x Principles for Development:
    - ***Economic Impact***: significant level of direct & indirect employment and enablement of global & national digital economies in line with national & regional economic policy (NPF & RSES).
    - ***Grid Capacity & Efficiency***: 200MW capacity (83 from grid & 120 on-site), regional location outside of Dublin, capacity in the grid for connection to nearby substation (subject to EirGrid agreement), proximate to gas interconnector, fibre optic providers & high-capacity transmission system, and potential for input from renewables.
    - ***Renewables Additionality***: committed to delivery of a sustainable form of development & promotion of renewable additionality.

- ***Co-location or Proximity with Future-Proof Energy Supply***: regional location close to a range of existing, proposed & potential renewables, provides for a combination of technologies on site (on-site power generation) and re-use of waste heat.
- ***Decarbonised Data Centres by Design***: range of mitigation measures (incl. solar panel, vertical farm and energy centre flow & return pipes), along with long term power purchase agreements, input from renewables, and future use of hydrogen & biomethane on the gas grid.
- ***SME Access & Community Engagement***: project will precipitate significant benefits for SMEs in the area during construction & give rise to a range of support services & secondary employment.

Energy Usage & Implications for Renewables Policy:

- Addressed in HDR Report (Appendix 6).
- Committed to sourcing renewables and considering options to source a power supply agreement or CPPA with renewable energy suppliers.
- Projects 10-year timeline aligns with delivery of local renewable capacity.
- Potential for CPPAs to offset entire energy usage, willing accept a related Condition, & engaging with a nearby renewable solar provider (MCRE).
- DC building based on low energy technologies with low energy usage & energy centre can convert to hydrogen in the future.

Compliance with CDP Low Carbon Objectives:

- Addressed in HDR Report (Appendix 6) & Energy & Sustainability Statement.
- High level of energy conservation achieved through passive design, low energy technologies & highly efficient cooling technologies.
- Electric vehicle charging points & solar arrays provided.
- DCs in general are “low carbon” when compared to the baseline scenario of enterprise sites for which the lands were previously designated.
- Research states that although global cloud computing productivity increased by 550% between 2010 & 2018, the resultant energy use only rose by 6%.
- In-significant resultant impacts on air & climate & fully compliant with CDP.

Sustainability & mitigation:

- Addressed in AWN & HDR reports.
- Mitigation considered in the form of power purchase agreements.
- Projects 10-year timeline aligns with delivery of local renewable capacity.
- CPPAs could offset entire energy usage & willing to accept related Condition.
- Climate & air quality impacts fully assessed in EIAR & AWN report.
- Infrastructure provided for future district heating.
- Future use of hydrogen is not factored into the emissions calculations & the 2020 carbon intensity of natural gas is assumed to remain constant to 2030.
- Complies with CRU criteria for DC grid connections & use of natural gas.

Deficiencies in Council Assessments (alleged):

- Detailed response to FI & Clarification provided to PA.
- Appellants had the opportunity to raise their concerns with ABP.
- Current submission provides a robust response to the 3rd party concerns.
- ABP will consider the application de novo.

Over concentration of data centres in Ireland & pressure on grid:

- Ireland is recognised as an appropriate & sustainable location for DCs.
- NPF NSO6 identifies Ireland as a sustainable international destination for ICT infrastructure (incl. DCs), as does RSES-RPO 13 (Ennis's strategic position).
- DC development is encouraged & supported across many policy documents.
- National, regional & local policy supports DC delivery at optimal locations.
- ABP previously recognised that DCs are not an optional for of development.
- ABP considered that DCs comply with all policy levels & would not have significant impacts on climate or emission reduction targets.
- DC proposals are assessed relative to their sites, environs, regions & CDPs.
- Appeals are an inappropriate avenue to challenge government policy (Kilkenny Cheese Case).
- No evidence that Ireland accommodates an over concentration of DCs.
- Siting of project took account of all policy levels, various stakeholders were consulted & obliged to submit a grid connection application as per CRU.

- Large energy projects could not be permitted if grid capacity had to be resolved in advance & all policies in place, with resultant impacts on growth.
- EIAR assessed impacts on Material Assets (incl. electricity supply).
- Securing a grid connection requires planning permission in advance and implementation ultimately depends on the availability of power from the grid.
- Thus, there are adequate safeguards in place to ensure that the project does not impact the security or stability of the national grid.

Water Quality & Assessment in relation to WFD:

- Addressed in AWN Environment Response Report (Appendix 3 - S.6).
- IW & CCC have confirmed adequate capacity for proposed wastewater discharge in pre-connection enquiries, with no capacity issues.
- Some minor exceedances in the WWTS are being addressed by IW.
- No impact on status of waterbodies & WFD Assessment Report concludes:
    - No potential for any adverse effects on Spancelhill (Ballymacahill) Stream & Fergus River, or potential to achieve Good Status.
    - No potential for any adverse effects on the Ennis Groundwater Body.
- Adequate capacity in the water system as per the IW confirmation of feasibility & project will not give rise to water shortages or impacts on local population.
- Water demand from the public main will only occur during extreme weather conditions & for a short mid-day period when temperatures are highest.
- Calculations of water demand for cooling system are included in the IW Pre-connection Enquiry, & demand will never be continuous over a 24hr period.
- Account has been taken of the effects of climate change & Met Eireann historical climate data to determine that 15 x consecutive days of water storage is sufficient to supply the cooling system.
- Water used in the cooling system will not include chemicals with no resultant discharge risks to receiving waterbodies.

Air Quality:

- Addressed in AWN Environment Response Report (Appendix 3 - S5).
- Detailed air dispersion modelling undertaken in EIAR & results compliance with Air Quality Standards (SI.108 of 20111) confirmed in AWN report.

- Air quality modelling confirms that local trends are like other similar locations.
- No adverse impacts on public health predicted from NO_2 & NO_x emissions.

Other issues:

- ***Oral hearing***: ABP determined that and OH was not required.
- ***SEA***: does not apply to Government Policy Statements (not a land use-plan).
- ***Variation of CDP 2017-23***: complied with all statutory requirements.
- ***Public consultation***: considered adequate given number of submissions.
- ***Use of gas***: a current lack of hydrogen gas producers & that it will slowly become available from 2030 onwards, and biomethane is not currently used.
- ***Ecology & biodiversity***: fully addressed in EIAR & NIS.
- ***SID***: S.182A application submitted to ABP in respect of substation element.
- ***Other EIAR considerations***: impacts on human & property rights are assessed in relevant EIAR chapters.
- ***Failure to provide reasons for decision:*** project fully assessed by the PA.
- ***Conflict of interest***: statutory obligation to give effect of CDP objectives.
- ***Construction traffic***: addressed in CSEA Report (Appendix 7), negligible impacts in Ennis given proximity to M18 & R352, TMP, Travel Plan will advocate use of buses & car-pooling, provision for pedestrians & cyclists.

6.4. Planning Authority Response No.2 (to First Party response)

General:

- The planning assessment considered all issues raised in the submissions.
- Note the applicant's response to the third-party appeals (incl. appendices).

EIAR (defects / errors / omissions):

- EIAR complied with Article 94 & Schedule 6 requirements of P&D Act.
- Alternatives were considered along with reasons for chosen option.
- Human health effects were addressed in the various environmental sections as per EPA & Departmental Guidelines.
- Impact on climate change through GHG emissions & vulnerability of project to future changes and its capacity to adapt to climate change fully addressed.

- PA's EIA contained Reasoned Conclusions on significant effects.

National Climate Action Plan (alleged non-compliance):

- Satisfied that Appendix 3 of response submission confirms alignment with CAP 2021 (51% reduction in emissions by 2030 & net zero by 2050).

Statement on the Role of Data Centres (alleged non-compliance):

- Satisfied that full consideration of the project against this policy was made.

Over concentration of data centres in Ireland:

- Disagree with this contention & project is a "plan-led" form of development.
- NFP identifies Ireland as a sustainable destination for ICT infrastructure/DCs.
- RSES advocates a plan-led & strategic approach to ensue suitable locations which minimise the need for deep reinforcements on the energy grid.
- National & regional policy supports the delivery of data centres.
- Policy Statement also advocates a plan-led approach which was applied by the Council in zoning the lands specifically to accommodate a data centre, and this was subject to SEA.
- The forum for contesting National Policy is not though ABP.

Water & Air Quality:

- Note submission of a WFD Assessment report by applicant to ABP.
- Concur with conclusion of no potential or minor temporary / long term or localised effects on the Spancelhill & further down gradient Fergus waterbody.
- No significant deterioration or change in waterbody status during either phase.

Other issues:

- Note ABP decision not to hold an oral hearing.
- Note reference to SEA & CJEU case law.
- No legal requirement for PA to engage in direct consultations.
- Infrastructure future-proofed to convert from natural gas to hydrogen/blue gas.
- PA undertook full assessment of ecological & biodiversity impacts (AA & EIA).
- ABP determined that the substation was SID.
- Request ABP to uphold the Council's decision to grant permission.

6.5. Further Correspondence

Further submissions were received from the following Prescribed Bodies, Groups and individuals in relation to the Applicant's response to the grounds of appeal and the submission of additional technical reports. The responses did not raise any new issues of substance.

- DHLG&H – DAU (NPWS & Archaeology)
- Louth Environment Group
- An Taisce
- Futureproof Clare
- Clare Green Party
- Christine Sharp
- Colin Doyle
- Martin Knox
- Cllr. Johnny Flynn

6.6. Observations

Five observations received in respect of the planning authority's decision from:

1. Cllr. Johny Flynn
2. Bernadette Lyons
3. Louth Environment Group
4. Martin Burke
5. Amazon Data Services

The concerns and reservations raised by the Observers are similar to those raised by the Third-Party Appellants (except Amazon Data Services).

Cllr. Johny Flynn is expressed qualified favour for the project subject to: -

- Power by green low carbon energy with zero emissions.
- Protection of public health, air quality & biodiversity.
- Resolution of water, flooding & road safety risks.
- Resolution of energy grid & security risks.

Amazon Data Services is supportive of the project on policy grounds.

7.0 Planning Assessment

This assessment should be considered in conjunction with R313895 for the proposed substation under ABP-313895-22.

The main issues arising are as follows:

- Principle of development
- Design, layout & visual amenity
- Residential & commercial amenity
- Movement & access
- Drainage, water supply & flood risk
- Biodiversity
- Other issues

Section 8.0 contains an Environmental Impact Assessment.

Section 9.0 contains an Appropriate Assessment.

7.1 Principle of development

Context:

The proposed development would be located to the NE of Ennis in County Clare. The lands have been designated ENT3 in the Clare County Development 2023 to 2029 to facilitate and support the development of a data centre on the Enterprise zoned lands at Toureen. The overall lands are located to the immediate E of the M18 and Junction 13, and to the N of the R352 Tulla Road. The Ennis 110kV substation is located to the SW of the site, a Gas Networks pipeline runs inside and parallel to the E site boundary, and there are fibre optic cables in the vicinity of the site.

The proposed development would comprise the construction of a data storage facility on a c.60ha site, and there is a concurrent SID application for a 110kV substation on the overall lands. The development would comprise 6 x 2-storey data storage buildings (c.19, 790sq.m) with back-up generators, a gas-powered energy centre

(c.4, 674sq.m), a vertical farm building (c.2, 430sq.m) and ancillary buildings along with site works and car parking. The applicant has clarified that a 10-year planning permission is being sought, that the facility will be connected to several existing fibre optic services, having that regard to the scale of the project the works would be carried out on a phased basis.

Compliance with National & Regional planning policy:

The proposed development would comply with national and regional planning policy as set out in National Planning Framework - Ireland 2040 and the Regional Spatial & Economic Strategy, for the Southern Region, 2020 which seek to support the development of ICT infrastructure, including the provision of data centres at appropriate locations (incl. NSO 6 & RPO 8.23).

It would also accord with the Government Statement on the Role of Data Centre in Ireland's Enterprise Strategy, July 2022 which reaffirms that data is an essential enabler of our increasingly digital economy and society, but that we must align the twin transitions which are both digital and green. The proposed development would also broadly comply with the Agreed Principles contained in the 2022 Statement, as summarised in the following table: -

Principle	Criteria	Level of compliance
Economic Impact	Preference for DC developments associated with strong economic activity & employment.	Located to NE of Ennis (Key Town) on land zoned for enterprise use (ENT3). Provision for over 500 jobs during operational phase. Digital support for a wide range of local & regional enterprises.
Grid Capacity & Efficiency	Preference for DC developments that make efficient use of our electricity grid, using available capacity & alleviating constraints.	Located beside Ennis 110kV substation. Provision of on-site gas generator, with potential to supply energy to the grid. Provision of solar panels on buildings. Provision of backup (stand-by) DC generators for emergencies. Available capacity & connections subject to CRU / Supplier agreement.

Renewables Additionality	Preference for DC developments that can demonstrate the additionality of their renewable energy use in Ireland.	Increasing number of local renewable energy suppliers serving the Grid. Evidence provided of ongoing negotiations with nearby renewable energy suppliers.
Co-location or Proximity with Future-proof energy supply	Preference for DC developments in locations where there is the potential to co-locate a renewable generation facility or advanced storage with the data centre, supported by a CPPA, private wire or other arrangements.	Provision of solar panels on buildings. Provision of on-site gas generator, with potential to supply energy to the grid. Evidence provided of ongoing negotiations with nearby suppliers in relation to CPPA & willing to accept a planning condition in this regard. No on-site energy storage facilities.
Decarbonised Data Centres by Design	Preference for DC developments that can demonstrate a clear pathway to decarbonise and ultimately provide net zero data services.	Construction will be in line with the current best practice in relation to energy efficiency, decarbonization & sustainability. Solar panels on buildings. Future potential for the on-site energy centre to run on hydrogen gas.
SME Access & Community Benefits	Preference for DC developments that provide opportunities for community engagement & assist small and medium-sized enterprises (SMEs), both at the construction phase & throughout the data centre lifecycle.	Local construction phase opportunities. Provision for over 500 jobs during operational phase. Digital support for a wide range of local & regional enterprises. Several fiber optic cables in the vicinity (incl. broadband providers).

Having regard to the foregoing, I am satisfied that the proposed data centre development would comply with national and regional policy in relation to the provision of ICT infrastructure and data centres at appropriate locations. The proposed data centre would be located to the W of the Shannon and well away from the Dublin Metropolitan area where there are competing demands for energy supplies. It would serve a regional social and economic demand / need for digital

storage facilities. It would be located close to the national grid and future renewable energy suppliers, as well as providing for on-site energy generation that could potentially supply the grid in the future. It would give rise to synergistic economic benefits to the local area and wider region, given its location close to Ennis and its proximity to the M18, the regional road network, and Shannon International Airport.

I note that several of the Objections raised concerns in relation to the absence of a Strategic Environmental Assessment (SEA) for the Government Statement on the Role of Data Centre in Ireland's Enterprise Strategy, July 2022. However, given the nature of this policy document, which does not relate to a plan or project, I am satisfied an SEA was not required.

Compliance with EU, national and regional Climate Action policies, objectives and targets will be assessed below.

Compliance with local planning policy:

Local planning policy for the development site and environs is set out in the County Clare Development Plan (2023-2029) and the Ennis Municipal District Settlement Plan, Interim Version (April 2023). The relevant policies and objectives are summarised in section 5.2 above.

In relation to the County Development Plan Core Strategy, Ennis is designated as a Key Town in the Settlement hierarchy, and CDP 4.1 seeks to support Ennis as a self-sustaining, regional economic driver and as a key location for investment choice in the county and the Southern Region. Chapter 6 deals with Economic Development and Enterprise and CDP6.27 seeks to facilitate and support the development of a data centre on the Enterprise zoned lands (ENT3) at Toureen subject to normal planning considerations and an analysis of the impacts from GHG Emissions associated with both the energy and cooling systems. Chapter 19 deals with Land Use and Zoning, CDP19.2 seeks to ensure that sufficient lands are zoned at appropriate locations, Zone ENT3 (Toureen) seeks to provide for Enterprise (Data Centres, Office & Agri business are permissible uses), and Buffer Spaces must be provided around Toureen Pond & Ballymacahaill / Spancilhill Stream. The proposed development would comply in principle with the Development Plan zoning objectives and related policies and objectives for this site at Toureen.

In relation to the Ennis Municipal District Settlement Plan, the ENT3 zoned site at Toureen has been identified as a Transformational Site (TS9 – Data Centre) which the Plan states offers great potential in the short to medium term to accommodate the economic activities required to grow Ennis as a location for significant employment, and that a data centre would allow for future growth. ENT3 Toureen (TS9) states that this site is suitable for a data centre campus because of its proximity to the electricity sub-station, M18, gas pipeline, availability of dark fibre, Shannon International Airport and Ennis town. The proposed development would comply in principle with the Settlement Plan policies and objectives for this site.

Having regard to the foregoing, I note the extensive plan-led approach to the zoning of the site at Toureen for data centre uses, and I am satisfied that the proposed development is compatible with the zoning, policies and objectives for this site.

Notwithstanding this conclusion, CDP6.27 of the Development Plan requires an analysis of the impacts from GHG Emissions associated with both the energy and cooling systems on the environment for the ENT3 zoned lands at Toureen in the context of Climate Change and the commitment in CAP 2021 to achieve a reduction of 51% in GHG emissions by 2030, relative to 2018 levels. ENT3 Toureen (TS9) of the Ennis Municipal District Settlement Plan also lists several suitability criteria for considering the future use of this site related to: - traffic management; sustainable development; ground and surface water protection; provision of ecological buffers; submission of an CEMP, FRA and SWDP; air quality and climate impact assessments; water conservation measures; protection of biodiversity (incl. hedgerows, bats, birds & otters); submission of an ecological impact assessment, landscape and biodiversity management plan, and an invasive plan; archaeological buffers; and details of wastewater treatment and disposal.

I note that the applicant has submitted all the required information under CDP6.27 and ENT3 (TS9) for the site. This information will assist in the identification of potential impacts on climate and the environment which will be assessed in the following sections of this report (Planning Assessment, EIA & AA). Likewise, the compatibility of the proposed development with several other Development Plan policies and objectives, which deal with infrastructure, energy, landscapes, biodiversity and heritage, will be assessed in the following sections of this report.

Planning policy conclusion:

Having regard to the foregoing, I am satisfied that the proposed development of a data centre facility at the Toureen site, which would comply with all relevant national, regional and local planning policy, is acceptable in principle. Any potential for adverse effects on the environment will be addressed in the following sections of this report. Compliance with Climate Action goals, policies and objectives will be assessed below.

Compliance with Climate Change policies:

The proposed data centre would be connected to the national grid at the nearby Ennis 110kV substation to the W via the concurrently proposed substation (ABP-313895-22). It would also be powered by an on-site energy centre, along with several standby diesel-powered generators per data hall (in the event of an emergency power outage). Concerns raised in Air quality issues (incl. NOx & NO2) and cumulative impacts are addressed in sections 7.3 and 7.7 below.

The Third Parties raised concerns in relation to a perceived conflict in government policy in relation to national and sectoral emission reduction and climate change targets versus the promotion of energy dependent technology developments (incl. data centres). I note that many of these concerns relate to matters of national policy, and it would be outside the Board's remit to adjudicate on them in this forum.

The Third Parties state that the development will have a high demand for energy which could result in a substantial increase in demand for electricity from non-renewable sources, with resultant negative impacts on the achievement of European, national, local and sectoral carbon emission reduction targets.

I acknowledge that data centre energy usage can be significant, and that data centre usage could result in an increase in demand for electricity from the national grid. However, I note that a balance will be struck between the supply of energy from the national grid which will be increasingly powered by renewables in the future, and from the proposed on-site energy centre which would initially be fuelled by natural gas from the nearby gas pipeline, and potentially by renewable gas supplies in the near future (incl. Hydrogen). The several standby diesel-powered generators per data hall would only be used in the in the event of an emergency power outage.

In relation to resultant CO_2 emissions, the applicant has confirmed that the existing electricity providers (to the national grid) form part of the EU-wide Emission Trading Scheme (ETS). I am satisfied that any greenhouse gas emissions from these electricity generators are not included when determining compliance with the targeted reductions in the non-ETS sector, with no adverse impacts on the overall EU reduction targets anticipated. Notwithstanding the anticipated demand for energy to serve the data centre project and taking account of the EU-wide Emission Trading Scheme (ETS), I am satisfied that this issue will be ultimately addressed as Ireland moves towards meeting its objective of providing most of its energy from renewable sources by 2030 and beyond, in accordance with the Climate Action Plan, 2023.

I note that varying estimates were submitted by the applicant and some of the Third Parties in relation to the calculation of projected carbon emissions and/or savings for the project relative to the various energy sources (incl. electricity, gas & diesel). As previously stated, I am satisfied that the the diesel-powered back-up generators would only operate in emergency situations when there is a power outage. The proposed data centre would be connected to the national grid via the Ennis 110kV substation to the W, and the on-site energy centre would be connected to the natural gas pipeline to the E, however final approval to connect to these utilities' rests with the CRU, who will ultimately determine if adequate network capacity exists.

It is also noted that the applicant has request a 10-year planning permission which would extend the completion date of the project beyond the target year of 2030. It is further noted that various policy documents note that increased renewable electricity requirements linked to energy intensive investments will be mainly delivered by the development of a new Renewable Energy Support Scheme (RESS).

Overall conclusions:

The proposed development, which would be located to the W of the Shannon and far away from the Dublin metropolitan area and any other areas where there is a more intense demand for data centres, would comprise a plan-led approach which complies with current national, regional and local energy, planning and data centre locational policy.

7.2 Design, Layout and visual amenity

The proposed development would be located on a greenfield site within a rural area on the outskirts of Ennis town to the E of the M18 and N of the R352. It is intended that this area will transition from agricultural to enterprise and related uses (incl. data centres) in line with Development Plan zoning and policy objectives. Refer to section 7.1 above for a more detailed assessment of the policy context. The site and environs are characterised by agricultural fields that are defined by mature hedgerows, trees and stone walls, and the lands slope up from SW to NE. There are several detached houses and farm buildings in the vicinity, including along both sides of the R352 Tulla Road and to the NE of the site. The Ennis 110kV substation is located to the W of the site and the lands are traversed from SW to NE by several overhead transmission lines. The roadside boundaries are mainly defined by mature hedgerows and trees and there are a number of access points off the R352 to the lands, including a laneway to the E which provides access to houses, farms and historical sites.

The proposed development would comprise a series of 6 x data centre buildings in the W section of the site and 3 x associated buildings in the E and more elevated section of the site (incl. substation, control centre & vertical farm). The main access would be off the R352 to the E and along the existing and upgraded laneway. The 2-3 storey data centre buildings would be located parallel to each other in a 2-3-1 arrangement along a NW to SE axis to the W of the access road, and the 3 x associated buildings would be located adjacent to each other along a N-S axis to the E of the access road.

The proposed buildings would be set back a substantial distance from the roadside boundaries, site boundaries with adjoining fields, and any nearby houses that are not participating parties to the project. Several existing farm buildings within the site boundaries would also be demolished. On-site car parking would be mainly located in the vicinity of the data centre buildings, and 1 x new attenuation pond would be provided in the SW section, to the E of the Ballymacahill / Spancelhill Stream.

A 10ha woodland buffer would be retained along the Spancelhill / Ballymacahill Stream to the W, along with a smaller buffer around Toureen Lake and wooded area in the SW section, and around a Ringfort in the NE section which is a Recorded

Monument. The roadside boundaries would be mainly defined by a series of landscaped berms which would be planted with native tree and hedgerow species. The concurrently proposed SID substation would be located in the more elevated E section of the overall lands, and it would be surrounded by palisade fencing.

The proposed data centre campus would comprise 6 x data centre buildings, ancillary structures and associated buildings, and the main elements are described in section 2.1 above. Each of the proposed self-contained 2-3 storey data centre buildings in the W section would be c.19, 790sq.m and c.18m high. They would have a similar contemporary external appearance, with 11 x back-up (stand-by) generators located parallel to one of their elevations along with a series of c.8m high exhaust flues. The proposed Energy Centre in the NE section would be c.4, 674sq.m and c.12m high, with a series of 18 x gas engines exhaust flues (c.25m high). The proposed 2-storey Vertical Farm building in the SE section would be c.2, 430sq.m. The data centre campus will be developed on a phased basis over 10 years.

EIAR chapter 10 dealt with Landscape and Visual impacts, and the application was supported by several technical reports and appendices which were submitted with the planning application or as part of the FI, Clarification of FI or First Party response submissions. The support documentation included the following: -

- Photomontages & LVIA
- Landscape Design Strategy
- Landscape & Biodiversity Management Plan
- Arboricultural Impact Assessment Report
- Landscape & Visual Impact Assessment Figures
- Design, Layout & Visual Amenity (incl. Berm Cross Sections)
- Cultural heritage surveys
- Design & Access Statement
- Sight Lighting Analysis

The various reports and photomontages described the receiving environment and the character of the surrounding area. The EIAR assessed potential visual impacts from several viewpoints that encompass sensitive receptors (incl. the surrounding

road network, M18 junctions, and rural, commercial & residential areas). The assessment concluded that the project would not give rise to any significant adverse visual impacts on the surrounding landscape in the long term, subject to the implementation of the embedded design measures (incl. siting of project elements, buffer zones & lighting schemes), the various landscaping schemes (incl. landscaped berms), and mitigation measures (incl. additional hedgerow planting). This conclusion was not significantly altered in the consolidated EIAR.

Discussion:

The proposed development would be located within an attractive and undulating rural area that is characterised by agricultural fields defined by mature hedgerows, trees and stone walls. The relevant County Development Plan (CDP) policies and objectives are summarised in section 5.2 above. Chapter 14 of the CDP describes the Landscape Character Type as Low Drumlin Farmland and the Landscape Character Area as forming part of the Ennis / Tulla Drumlin Farmland. Chapter 15 deals with natural heritage, and CDP15.8 to 22 seek to protect wetlands, woodlands, trees and hedgerows whilst CDP15.28 deals with Dark Sky Reserve designations. Chapter 16 deals with cultural heritage and CDP16.1-7 seek to protect architectural heritage whilst CDP8-12 seeks to protect archaeological heritage.

The rural site and environs are not covered by any sensitive landscape, natural heritage or scenic amenity designations, and there are no protected views or prospects in the vicinity. There are two Recorded Monuments within and close to the NE section of the site (Ringforts), and there are several similar features in the wider area. Although the site and environs contain some vernacular farm buildings, there are no nearby protected structures or NIAH features. The site is intermittently visible from the surrounding road network (incl. the M18 to the W, R352 to the S, & the local roads to the N and E), nearby houses, and slightly further afield residential areas, schools and commercial properties to the W of the M18 along the R352 towards Ennis. Having regard to the scale and height of the proposed development, and to the extent of the construction works which would necessitate the removal of natural field and roadside boundaries, the proposed development has the potential to adversely affect the receiving landscape and visual amenities of the area.

The site boundaries would be defined fences and hedgerows, with a series of landscaped berms located parallel to the S site boundary with the R352 Tulla Road. The berms would screen the proposed development from nearby views and soften its impact on the receiving environment and rural landscape, as indicated in the submitted section drawings and photomontages. The Buffers in the W and SW sections of the site in the vicinity of the Ballymacahill / Spancilhill Stream and Toureen Lough close to the R352 would accord with Development Plan requirements (Ch.19: Land Use and Zonings), and their retention would help to screen views of the proposed development from the surrounding road network, nearby houses and further afield residential and commercial areas. The proposed landscaping and biodiversity arrangements would also serve to screen the project over time as the vegetation matures, as demonstrated in the photomontages. However, given that the applicant is seeking a 10-year permission, combined with the length of time it would take for the landscaping (incl. trees & hedgerows) to reach maturity, I recommend that the perimeter landscaping works should be fully completed within the first 5 years of the project, in the interests of visual amenity. Condition no.7 (a & b) of the Planning Authority's decision to grant planning permission set out detailed landscaping requirements related to the berms and landscaping, and I recommend that similar conditions be attached.

I note that the existing and proposed transmission lines would run underground to connect to the concurrently proposed 110kV substation to the E with no visual impacts anticipated, and hence overhead to the existing 110kv overhead line to the N where there would be a minor visual impact. The proposed undergrounding of the existing overhead transmission lines that traverse the site from SW to NE would have a positive impact on the visual amenities of the area.

Conclusion:

Having regard to the:- scale, height and layout of the proposed data centre and associated buildings on the overall lands that are zoned ENT3 for enterprise uses (incl. data centres); the proposed buffer around a designated heritage feature in the NE section of the site (Ringfort) and the avoidance of another similar feature to the NE of the site; the absence of any Protected Structures or NIAH features in the vicinity of the site; the absence of any scenic amenity designations or protected views in the surrounding area; the substantial separation distances to the nearest

roadside boundaries and residential uses; the screening properties of the Buffer Zones and proposed perimeter landscaped berms along with the undergrounding of the existing and proposed transmission lines; I am satisfied that the proposed data centre facility would not have any significant adverse impacts on the visual amenities of the surrounding area, subject to compliance with any recommended planning conditions. The proposed development would not give rise to any significant adverse cumulative impacts on visual amenity in-combination with other developments in the surrounding and wider area.

7.3 Residential and commercial amenity

Several of the Third Parties raised concerns in relation to the impact of the proposed development on residential amenity and public health during the construction and operational phases, with respect to noise, dust, emissions, traffic, light pollution, general disturbance, and visual intrusion. There are several nearby houses and farm buildings located to the S and NE of the proposed development, and there are several slightly further afield residential and commercial areas located to the W of the appeal site and M18 along the R352 road towards Ennis.

EIAR chapters 4, 8, 9, 10 and 12 dealt with human health and population, air quality and climate, noise and vibration, landscape and visual impact, and traffic and transportation. The application was supported by several technical reports and appendices which were submitted with the planning application or as part of the FI, Clarification of FI and First Party response submissions. The EIAR concluded that there would be no significant adverse impacts during any of the phases, subject to the implementation of mitigation measures, agreement of a CEMP with the Council, adherence with best construction practices, and compliance with relevant requirements and standards (incl. traffic, emissions, air quality & noise). The support documentation included the following: -

- CEMP
- Energy & Sustainability Statement
- Environmental Response Report
- Noise surveys & modelling
- Traffic surveys & modelling

- Road Safety Audit
- Sight Lighting Analysis
- Landscape & Visual Impact Assessment

The various reports described the receiving environment and the character of the surrounding area. The EIAR assessed potential impacts on sensitive receptors in the vicinity including nearby houses and further afield residential and commercial areas. The assessment concluded that the project would not give rise to any significant adverse impacts on residential amenity (incl. human health) during the construction and operational phases subject to adherence to best construction practice and the implementation of mitigation measures (incl. CEMP & TMP), and compliance with relevant environmental standards. The assessment also concluded that the project would not give rise to any significant adverse impacts during the operational phase, subject to the implementation of the embedded design measures (incl. siting of project elements, separation distances & buffer zones), compliance with air quality standards (incl. minimal use of standby generators [emissions]), and mitigation measures (incl. landscaping). This conclusion was not significantly altered in the consolidated EIAR.

Discussion:

The proposed development would be located within an open and exposed rural area to the NE of Ennis town, and to the immediate E and N of the M18 and R352. There are several houses in the surrounding area along with further afield residential, commercial and educational uses to the W of the M18 on the approach to Ennis. The relevant provisions of the County Development Plan (CDP) are summarised in section 5.2 above. Chapter 11 of the CDP deals with physical infrastructure, CDP11. 2-18 deal with access and movement whilst CDP11.40-42 seek to protect sensitive receptors from noise, air, and light pollution, and to protect air quality. Appendix 1 contains development management guidelines and standards. Having regard to the scale and future use of the data centre campus, and to the extent and duration of the construction works over a 10-year period, the proposed development has the potential to adversely affect the amenities of the surrounding area by way of general disturbance including noise, air and light pollution, and traffic movements, in the absence of mitigation.

There is potential for general disturbance during the ***construction phase*** by way of noise, dust, light pollution, and traffic movements. The concerns of the Third parties are noted in relation to the overall length of the phased construction works which would extend over a 10-year period. The level of disturbance would be managed by compliance with an agreed Construction and Environmental Management Plan, adherence to best construction practices and the implementation of a Traffic Management Plan with respect to construction work traffic. This could be re-enforced by way of a planning condition. The standard operational hours condition should also be attached to ensure that the neighbours are not disturbed outside normal working hours or on Sundays or Public Holidays.

In relation to the ***operational phase***, the neighbouring houses would not be significantly overshadowed or overlooked by the proposed data centre and associated buildings because of the siting of the structures in the centre of the c.60ha site, the substantial separation distances, and the orientation of the nearest structures relative to the houses. As previously stated in section 7.2 above, the proposed development would not be visually obtrusive or overbearing having regard to the substantial separation distances and perimeter landscaping. Any intermittent views of the data centre and associated buildings from the neighbouring houses would be largely obscured by the proposed landscaped berms around the perimeter of the site would also serve to protect the amenities of nearby residents. It is unlikely that the operational phase of the data centre would have an adverse impact on amenity by way of noise, light pollution, emissions or general disturbance having regard to the nature of the facility, the separation distances between the project elements and any nearby houses, and the stated minimal use of the back-up (stand by) diesel generators (addressed in more detail below). Traffic and transport related issues (incl. generation & safety) be addressed in more detail in section 7.4 below.

In relation to both the ***construction and operational phases***, conditions also should be attached to ensure that the landscaped berms are constructed and planted during the first phase of the works, that there is minimal night-time lighting on the site and that all lighting and CCTV cameras are directed away from the neighbouring houses.

NO_2 and NO_x Emissions:

Notwithstanding this conclusion, I note that several of the Third Parties raised concerns in relation to air quality impacts and in particular NO_2 and NO_x emissions arising from the use of the back-up (stand-by) generators and additional traffic. I note the First Party's response in the various response submissions and accompanying documents, including the AWN Environment Response Report, which concluded that there would be no significant adverse impacts on air quality. I also note the response of the Planning Authority which concurred this these conclusions.

The proposed development would comprise 6 x data storage buildings. The c.200MW of electricity required to power the data centre would be supplied by the national grid via the nearby Ennis 110kV substation (c.80MW) and the proposed on-site energy centre (c.120MW), and to a lesser extent by the roof-top solar arrays on each building. The on-site energy centre would be fuelled by natural gas via the nearby natural gas pipeline, and it is possible that the 120:80 MW balance could shift in favour of the on-site energy centre in the future. It is also anticipated that the energy centre would operate on renewable gas supplies (incl. hydrogen & biomethane) depending on emerging technologies at some stage in the future.

Each of the 6 x data storage buildings would also be served by 11 x back-up (standby / emergency) diesel generators and associated exhaust flues (c.8m high). Although the generators could give rise to additional NO_2 & NO_x emissions, I note that they would only operate for a short period of time during a temporary power outage. However, as we transition towards an increasing dependence on renewable energy provision by 2030 and beyond, the threat of outages will lessen over time. The EIAR carried out detailed air dispersion modelling exercises, which were reasonably robust, and the results are broadly compliant with EU and National ambient air quality values. I am satisfied that the emissions are unlikely to exceed statutory limit values for NO_2 & NO_x within a 20km radius of the site, with no adverse impacts on local or regional air quality predicted or public health anticipated from the emissions. I note that the AWN Report, which peer reviewed the EIAR air dispersion modelling and results, concluded that the exercises were in line with best practice and that the modelled dispersal patterns reflected those for other similar locations. I concur with this view, having reviewed all of the submitted documents and planning authority submissions.

Conclusion:

Having regard to the foregoing and to the ENT3 zoning objective for the site, the substantial separation distances between the proposed data centre structures and the neighbouring buildings, and the height, scale and extent of the perimeter landscaped berms, and taking account of the minimal use of the emergency diesel generators and the EIAR quality modelling results, I am satisfied that the proposed development, subject to implementation of mitigation measures, would not injure the amenities of any houses, residential or commercial areas to any significant extent. The proposed development would not give rise to any significant adverse cumulative impacts in-combination with other developments in the surrounding and wider area, including ambient air quality.

7.4 Movement and Access

The site is located to the E of the M18 and Junction 13 and to the N of the R352 Tulla Road, and vehicular access would be of the R352. Some concerns were raised in relation to the impact of the proposed development on the surrounding road network during the construction and operational phases, with respect to traffic generation and safety (incl. pedestrians & cyclists), vehicle emissions and general disturbance. There are several nearby houses and farm buildings located to the S and NE of the proposed development, and there are several further afield residential and commercial areas located to the W of the appeal site and M18, along the R352 road towards Ennis.

EIAR chapter 12 dealt with traffic and transportation and the application was supported by several technical reports and appendices which were submitted with the planning application and FI response. The documentation included: -

- CEMP
- Design & Access Statement
- Road Safety Audit
- Traffic surveys & modelling
- Construction & Demolition Waste Management Plan.
- Revised drawings (incl. cycle lane & footpath compliance with standards).

The various reports described the receiving environment and the surrounding road network. The EIAR assessed potential impacts on the road network and junctions along with sensitive receptors in the vicinity including nearby houses and further afield residential and commercial areas. It estimated future growth and trip generation rates and predicted that the impact of the proposed data centre on the national, regional and local road network, in combination with other developments on the area, would be short term during the construction phase and not significant in the operational phase. The EIAR concluded that the road network has adequate capacity to accommodate the proposed development and that there would be no significant adverse impacts on roads or junctions during any of the phases. This would be subject to the implementation of mitigation measures, agreement of a CEMP and TMP with the Council, adherence with best construction practices, and compliance with relevant requirements and standards. No significant adverse traffic or safety impacts were predicted, and this conclusion was not significantly altered in the consolidated EIAR.

Discussion:

The proposed development would be located to the immediate E of the M18 and Junction 13, and N of the R352 Tulla Road. There are several houses and farms in the surrounding area along with further afield residential, commercial, and educational uses to the W of the M18 on the approach to Ennis. The relevant provisions of the County Development Plan (CDP) are summarised in section 5.2 above. Chapter 11 of the CDP deals with physical infrastructure, CDP11. 2-18 deal with access and movement whilst CDP11.40-42 seek to protect sensitive receptors from noise and air pollution, and to protect air quality. In particular, CDP11.5 seeks to encourage safe walking and cycling, CDP11.11 seeks to safeguard the road network, and CDP11.14 seeks to preserve the carrying capacity of Strategic Regional Roads (incl. R352). Appendix 1 contains development management guidelines and standards. Having regard to the scale and future use of the data centre campus, and to the extent and duration of the construction works over a 10-year period, the proposed development has the potential to adversely affect the surrounding road network and the amenities of the area by way of traffic generation and general disturbance (incl. emissions & safety), in the absence of mitigation.

The main vehicular access to the site during the ***construction and operational phases*** would be directly off the R352, and along the existing laneway in the E section of the site which would be upgraded at its junction with the R352, and along its length. Another temporary construction entrance in the W section of the site along the R352 would also be utilised. The sightlines to the E and W of the site entrances are adequate and vehicles would be able to safely enter and leave the data centre site. There is sufficient spare capacity along the R352 and the surrounding road network (incl. the M18 & Junction 13) to accommodate any additional traffic whilst largely avoiding Ennis Town. A construction phase Traffic Management Plan should be agreed with the planning authority before development commences. Temporary traffic management measures should be in place at times of peak construction activity (incl. staggered deliveries), having regard to the relatively heavily trafficked nature of the M18/J14 junction and the R352 Tulla Road, and objective CDP11.14 which seeks to preserve the carrying capacity of this identified Strategic Regional Roads. All relevant TII and CCC roads requirements should be complied with. These concerns could be addressed by way of a condition. I note that the Council's transportation department did raise any objections to the proposed development and that Condition no.6 (a-f) of the planning authorities' decision to grant permission set out detailed movement and access requirements, which should be attached in the interests of clarity.

In relation to ***public transport, car parking & connectivity,*** the proposed development would not be located close to any public transport facilities as Ennis is not well served by a local bus service. However, it may be connected in the future, and any such provision, along with the proposed bus shelter, would serve to reduce car dependent access to the data centre campus. Adequate on-site car and cycle parking would be provided to serve the construction phase and future workforce, broadly in line with Development Plan standards. The overall site layout contains a network of foot and cycle paths that connect to the public road and internal open spaces. I note that the applicant's response to an FI request confirmed that the development would provide for the safe movement of pedestrians and cyclists, and these arrangements are acceptable.

Conclusion:

Having regard to the foregoing, including the proximity of the site to the national and regional road network, and to the ENT3 zoning objective which specifically seeks to facilitate the provision of a data storage facility on the lands, I am satisfied that the proposed development would not give rise to a traffic hazard or endanger the safety of other road users during the construction and operational phases. This would be subject to compliance with any recommended planning conditions related to traffic management along the R352, the implementation of the FI provisions for pedestrians and cyclists, and adherence to TII and Council traffic and transportation requirements. The proposed development would not give rise to any significant adverse cumulative impacts on movement and traffic in-combination with other developments in the surrounding and wider area in either the short or long term.

7.5 Drainage, Water Supply and Flood Risk

The Third Parties raised concerns in relation to the drainage arrangements, ground and surface water quality, flood risk, and public water supply capacity relative to data centre usage.

The greenfield site is characterised by undulating agricultural fields that are defined by mature hedgerows and trees, and the lands slope up from SW to NE. The underlying bedrock comprises a Regionally Important Limestone Aquifer and depth to bedrock varies across the site. Aquifer Vulnerability varies from High to Moderate over most of the site, and to Extreme in the more karstified low-lying SW section. The Ennis Ground Water Body which underlies the site has Good Status, and the current WFD risk score is under review. The principal soil types include limestone and sandstone till with rocky outcrops and fen peat. The site drainage includers several ponds (incl. Toureen Lough), swallow holes and spring discharges, which mainly drain W and SW to the Ballymacahill / Spancelhill River. This watercourse, which rises to the NE of the site and flows parallel to the W site boundary, forms a downstream confluence with the Gaurus River, and eventually discharges to the River Fergus and hence the River Shannon to the far S. There are two existing attenuation ponds to the E of the river and W of the M18. The E section of the site partly drains S towards the Tulla Toad and beyond via underlying karst features.

EIAR chapters 5, 6 and 7 dealt with hydrogeology, hydrology, water quality and aquatic ecology. The application was supported by several technical reports and appendices which were submitted with the planning application or as part of the FI, Clarification of FI and First Party response submissions. The support documentation included the following: -

- CEMP & Engineering Planning Report
- Irish Water Pre-connection Enquiry
- Flood Risk Assessment
- Technical Note (Ground & Surface Water) - *Awn Consulting*
- Technical Note (Cooling Water Demand) - *Hurley Palmer Flatt*
- Amended FRA & Clarification Note (incl. river modelling & flood maps)
    - Technical Note (incl. river modelling & updated maps)
        - Revised Drawings & Micro Drainage Report
        - Slope stability report (Attenuation Pond)

The various reports described the receiving environment, including the hydrological and hydrogeological relationship between the underlying bedrock, ponds, springs and swallow holes, and the aquatic connections to the nearby watercourse and further afield waterbodies. It described the various site investigations (incl. bore holes, trial pits, dye tracer tests, geophysical tests, water level measurements & water quality analysis), and it identified and assessed potential adverse effects on ground and surface waters and the risk of flooding during the construction and operational phases. It noted that c.111,424m_3 of material will be excavated and mostly reused on site for levelling and landscaping. The EIAR contains mitigation measures (incl. embedded design features, buffer zones, site specific foundation types relative to karst features and groundwater flow paths, fuel storage bunding, sediment & silt management, interceptor drains & a lined attenuation pond with downstream hydro break). There would be no discharge to groundwater during the operational phase and site run-off would be directed to the attenuation ponds via the drainage infrastructure. The demand for cooling water was calculated, rainwater will be harvested, and details of the Irish Water pre-connection enquiry was provided.

The EIAR concluded that the proposed development would not give rise to any significant adverse impacts on ground or surface water quality or hinder the achievement of WFD Good Status during any of the phases, and it would not give rise to a flood risk within or downgradient of the site. This would be subject to the implementation of mitigation measures, agreement of a CEMP and SWMP with the Council, adherence with best construction practices, and compliance with relevant requirements and standards (incl. SuDS). No significant adverse impacts were predicted (incl. cumulative). This conclusion was not significantly altered in the Consolidated EIAR.

Discussion:

The proposed development would be located within undulating agricultural lands that are underlain by limestone bedrock and interspersed by ponds, swallow holes and springs. The lands mainly drain W and SW to the Ballymacahill / Spancelhill Stream which in turn joins the Gaurus River to ultimately discharge into the downstream Fergus and Shannon rivers. The E section of the site partly drains S towards the Tulla Road and beyond via underlying karst features. The lands are proximate to the public water supply and wastewater treatment facilities to the S and W along the R352 Tulla / Ennis Road, and the M18 and associated attenuation ponds are located to the W. There are several houses and farms in the surrounding area, and Ennis which is a designated Key Town has a population of just under 30,000 (CSO, 2022).

The relevant provisions of the County Development Plan (CDP) are summarised in section 5.2 above, and Chapter 11 deals with physical infrastructure. CDP11.26 seeks to comply with WFD and RBM requirements, to protect groundwater and surface water resources, achieve and maintain at least good water quality status, and consider proposals where it can be clearly demonstrated the requirements of the RBM Plan will be met. CDP11.27-33 seeks the protection and sustainable use of surface and ground water resources, the provision of water supplies and wastewater services. Appendix 1 contains development management guidelines and standards. Having regard to the scale and future use of the data centre campus, and to the extent and duration of the construction works over a 10-year period, the proposed development has the potential to adversely affect ground and surface water quality, ground water flows, public water supplies, wastewater treatment capacity, and give rise to a flood risk, in the absence of mitigation.

***Surface and ground water*:**

The site is not currently served by an existing drainage system. ***Construction phase*** surface water runoff would be managed by a series of mitigation measures (outlined above) to prevent sediment leaden water or chemical pollutants arising from accidental fuel spills reaching ground or surface waters. Site specific foundations would be installed to take account of any underlying karst features so as not to interfere with groundwater flows. ***Operational phase*** surface water runoff from hard surfaces will be collected in a network of pipes which will flow into separate lined attenuation ponds located in the SW section of the site. Screening units and petrol interceptors would be provided upstream of the attenuation ponds to protect downstream receiving waters and systems. It is stated that the measures will cover rainfall events and that the system has the capacity to contain and convey runoff associated with the 1 in 100-year event to the attenuation ponds without any overland flooding (taking account of climate change). The controlled discharge of water from the attenuation ponds to the adjacent watercourse along the W site boundary would be managed by way of a downstream hydro break unit and by-pass separator to intercept pollutants from entering the Ballymacahill / Spancelhill Stream and nearby downstream Gaurus River. Concerns raised about the relationship between the attenuation pond outfall and the receiving watercourse are assessed below in the Flood Risk section. Rainfall from the roofs of the data centre buildings would be harvested and reused as cooling water for the storage facilities.

The planning authority had several concerns in relation to the proposed drainage arrangements (incl. final discharge destination and avoidance of the M18 & R352 drainage networks), attenuation pond (incl. allowable discharges, attenuation volume & slope stability), and cooling water storage capacity. These concerns were addressed to the Councils' satisfaction by way of FI and Clarification of FI, and Condition no.8 (a-g) of the decision to grant permission set out detailed water elated requirements (incl. supply, drainage, stormwater management & storage). Condition no. 8 required the installation the drainage works during Phase 1, the provision of a separate drainage network and attenuation system that drains directly to the Ballymacahill / Spancelhill Stream and avoids the M18 drainage system, and the submission of maintenance details prior to occupation). The use of permeable paving and compliance with the requirements of the IW licence for discharges should

also be required by way of condition. Any outstanding concerns raised by the Third Parties were addressed in the applicant's response submission to the appeals, also to the Council's satisfaction.

I am satisfied that the proposed drainage arrangements would adequately manage surface water runoff from impermeable surfaces within the development site and its subsequent discharge, in line with all relevant standards and taking account of climate change effects. The measures outlined above, which include the storage and management of sediment laden water and accidental spills, and the controlled release of settled water from the attenuation pond, would protect water quality in downstream watercourses and the integrity of the nearby Ballymacahill / Spancelhill Stream and Gaurus River, and the further afield Fergus and Shannon rivers. The proposed surface water drainage arrangements are considered acceptable, subject to compliance with all relevant requirements, adherence to best construction practices, and the implementation of the consolidated EIAR mitigation measures and any recommended conditions. Furthermore, the avoidance of underlying karst features in the layout, and the use of site specific foundation types would ensure that groundwater flow paths are not obstructed.

Water supply and usage:

Data centres by their nature require large quantities of water on a regular daily basis for operational reasons and cooling purposes. This is in addition to the amount required for horticultural and domestic use by the projected workforce, which in this case would comprise in excess of 500 persons upon completion and full occupancy of the data centre and Vertical Farm.

The proposed data centre would be connected to the existing 450mm water main along the R352 to the S of the site via a new on-site connection. The system has been designed to take account of domestic, industrial and cooling demand. Pre-connection consultations have taken place with Irish Water (IW) and it has been confirmed that adequate water supply capacity exists to serve the proposed development. Under normal conditions, peak daily usage will be 48 l/sec, with an average demand 11.2 l/sec for the Adiabatic Cooling System (during seasonal high temperature conditions) plus 1.2 l/sec for domestic use. However, it is noted that evaporative cooling may be seasonally and diurnally required on certain occasions

when temperatures exceed 27 degrees Celsius (i.e. mid-day & mid-summer) and c.1,000m^3 / day may be required.

The planning authority and Third Parties had several concerns in relation to the proposed water supply arrangements, including cooling water storage capacity and the contribution from rainwater harvesting, along with potential adverse impacts on public water supplies. These concerns were addressed to the Councils' satisfaction by way of FI and Clarification of FI, and Condition no.8 (a-g) of the decision to grant permission set out detailed water related requirements (incl. supply & storage), including the provision of 48-hour storage for adiabatic cooling waters.

The proposed water supply arrangements, which include a new connection to the existing water main along the R325, are considered acceptable. Any outstanding concerns raised by the Third Parties were addressed in the applicant's response submission to the appeals, also to the Council's satisfaction. I note that the applicant provided details of the IW pre-connection enquiry, and the Board may wish to consider attaching a planning condition which would require the developer to seek compliance with all Irish Water and Council requirements.

Wastewater:

The proposed development would provide for additional pipework to connect to the existing foul water drain along the R352 which discharges to the existing pumping station of Gort Na mBlath c.550m to the W of the site, which in turn ultimately discharges to the Ennis North (Clonroadmore) WWTP. I note that pre-connection consultations have taken place with IW and the capacity concerns raised by the Third Parties are also noted. The proposed wastewater drainage arrangements are considered acceptable, subject to compliance with the requirements of Irish Water and the planning authority, and adherence to best practices.

Flood Risk:

The applicant's Flood Risk Assessment report (FRA) and subsequent amendments / clarifications described the c.60ha greenfield site which is in agricultural use, the receiving environment (incl. ground conditions, drainage patterns & watercourses) and the nature of the proposed data centre works (c.17ha footprint). The FRA report had regard to OPW Flood Guidelines (incl. the source-pathway-receptor concept model, identification of flood zones, development classification & climate change

scenarios), OPW Flood Risk Maps, and the Flood Risk Management Guidelines for PAs (incl. the justification test & sequential approach), along with other sources of information (incl. Historical Flood Records, OSi Maps, EPA , CFRAMS, & CCC) and site investigations (incl. bore holes, geophysical & tracer dyes). The FRA report was also supported by additional documents and clarifications as summarised above (incl. river modelling along the Ballymacahill & Gaurus rivers, updated flood maps, and flow rates at Aughavaddy Bridge).

The FRA report initially noted that the site is not subject to ***coastal or fluvial*** flooding because of the geographic remove and its location within Zone C. However, the site lies within c.37m of the Zone B flood extent of the Ballymacahill / Spancelhill Stream, and the extent of the modelled floodplain of Zone A and B covers the existing ecological and waterbodies conservation areas in the W section of the site (Clare County SFRA). The proximity of the proposed attenuation pond in the SW section of the site and its relationship to the Ballymacahill / Spancelhill Stream and downstream Gaurus River and Aughavaddy Bridge was further investigated. Concerns were raised that the proposed outfall from the attenuation pond could be surcharged by flood waters in the stream, having regard to the level of the outfall relative to water levels in the watercourses during extreme storm events. Further hydrodynamic flood modelling was undertaken for these watercourses, which concluded that no adverse impacts would arise subject ongoing monitoring and regular maintenance of the overall drainage system, attenuation pond and downstream outfall to the watercourse (incl. hydro brake unit).

The FRA report noted that there was a slight risk of seasonal ***groundwater and pluvial*** flooding in the low-lying W section of the site related to the undulating topography and presence of low-lying depressions (c.14mOD [W] to c.46mOD [E]), proximity to a nearby watercourse (Ballymacahill / Spancelhill Stream), ground conditions (incl. locally karstified bedrock), underlying site drainage (incl. springs, ponds & swallow holes), and the on-site works (incl. structures & roads). The FRA report mapped the location of water bodies within the site and environs and identified the on-site features that would be protected by buffer zones (incl. 10ha along Ballymacahill / Spancelhill Stream & around Toureen Lough) as part of the proposed drainage arrangements, and in compliance with Development Plan requirements.

The FRA report determined that the proposed data centre campus would be located within Flood Zone C where there is a low probability of fluvial flooding (even when Climate Change, proximity to Flood Zones A and B, and the relationship between the attenuation pond outfall and nearby watercourses are factored into the equation). The FRA report calculated the risk of the development contributing to, or being affecting by moderate fluvial, groundwater and pluvial flooding, in relation to the scale of the development, the surface water management measures, groundwater flow patterns, the assimilative capacity of the Ballymacahill / Spancelhill Stream, and residual risks. It concluded that the proposed drainage system and arrangements would be effective in the event of a large storm (subject to regular inspections & maintenance), that the works would not adversely affect adjacent third-party lands or the surrounding road network (incl. M18 & R352).

However, this would be subject to compliance with Condition No.8 of the planning authorities' decision to grant planning permission as summarised above. This condition required the installation the drainage works during Phase 1, the provision of a separate drainage network and attenuation system that drains directly to the Ballymachill / Spancelhill Stream and avoids the M18 system, and the submission of maintenance details prior to occupation. Compliance with the requirements of the IW licence for discharges should also be required by way of condition.

Having regard to the foregoing and taking account of the surface water drainage arrangements outlined above (and any subsequent amendments & clarifications), and based on my assessment of the site and surrounding area, I am satisfied that the conclusions of the FRA report are robust, and that the proposed development would not give rise to a flood risk within the site or on surrounding lands or road network (incl. the M18 & R352), or contribute to flooding at downstream watercourses (incl. Ballymacahill / Spancelhill, Gaurus & Fergus rivers) or downstream bridges (incl. Aughavaddy Bridge). This would be subject the implementation of the consolidated EIAR mitigation measures and compliance with recommended conditions.

Conclusion:

Having regard to the foregoing and based on my assessment of the site and surrounding area and examination of the EIAR and all associated details and

documentation that were submitted during the course of the application and appeal, including those related to ground water, surface water, wastewater and water supply arrangements, and the FRA report, I am satisfied that the proposed development would not have an adverse impact on the receiving environment, subject to the implementation of the consolidated EIAR mitigation measures and compliance with any recommended planning conditions. The proposed development would not give rise to any significant adverse local or cumulative impacts in-combination with other developments in the surrounding and wider area, subject to compliance with the afore-recommended drainage conditions in relation to protecting the surrounding road network and third-party lands.

7.6 Biodiversity

The appeal site is located within an undulating rural area and there are several European and Nationally designated sites in the wider area. The agricultural site and surrounding lands are not covered by any sensitive natural heritage designations although they contain a variety of habitats and are frequented by several species of animal. The fields are mainly used for grazing and the boundaries are defined by mature hedgerows, trees and stone walls. The lands, which are underlain by limestone bedrock contain several karst features, including ponds in the SW and NE sections. Toureen Lough in the SW section is surrounded by a wooded area which extends to the SW roadside boundary along the R352. There is an extensive woodland area in the W section parallel the Ballymacahill / Spancelhill Stream which in turn supports a variety of terrestrial and aquatic wildlife. There are several ponds within and adjacent to the site including Toureen Lough in the SW section and Ardnamurry Lough to the NE of the site which are connected to the underlying karst bedrock.

EIAR chapters 5, 6 and 7 dealt with hydrogeology, hydrology, water quality and biodiversity. The relevant chapters described the receiving environment, habitats and species, they identified sensitive receptors and assessed the potential for adverse effects during the construction and operational phases and set out mitigation measures. They assessed the potential for cumulative impacts during both phases in-combination with other plans and projects in the wider area. The application was

supported by several technical reports and appendices which were submitted with the planning application or as part of the FI and Clarification of FI.

The support documentation included the following: -

- Landscape Design Strategy
- Landscape & Biodiversity Management Plan
- Arboricultural Impact Assessment Report
- AA Screening Report & Natura Impact Statement
- Field surveys (incl. habitats, flora, mammals, birds & bats)
- Updated & consolidated EIAR, AA Screening, NIS & CEMP

The various reports described the receiving environment. Desktop studies, walkover surveys and field investigations were undertaken and used to inform the conclusions of the EIAR and NIS. The EIAR identified sensitive sites located within the Zone of Influence of the site (SACs, SPAs & p/NHAs). It mapped habitats, identified plant species and conducted field surveys for mammals and invertebrates (incl. terrestrial & aquatic) within the site and environs. It identified the main potential impacts as habitat loss and degradation (incl. improved agricultural grassland, dry calcareous & neutral grassland, woodlands & hedgerows), disturbance to various plant and animal species during construction, and disturbance to birds and bats. It proposed several mitigation measures (incl. avoidance, buffer zones, replacement habitat [Dry calcareous grasslands], pre-construction surveys & seasonality & timing of works), along with a Landscape and Biodiversity Management Plan. The EIAR concluded that the proposed development would not give rise to any significant adverse impacts on terrestrial or aquatic ecology. This would be subject to the implementation of mitigation measures, agreement of a CEMP with the Council, adherence with best construction practices, and compliance with relevant requirements and standards. No significant adverse impacts were predicted (incl. cumulative). This conclusion was not significantly altered in the consolidated EIAR.

Discussion

The DAU/NPWS and Christine Sharpe (and others) raised concerns about the impact of the proposed development on biodiversity (incl. habitats & species) during

all phases of the development in relation to habitat loss, general disturbance and emission impacts on habitats and species.

The proposed data centre campus would be mainly located within low intensity improved agricultural lands which are used for cattle grazing. The site is underlain by limestone bedrock, it contains several karst features (incl. ponds, swallow holes & springs). The lands mainly drain W and SW to the Ballymacahill / Spancelhill Stream which forms a confluence with the nearby downstream Gaurus River to the SW, and it ultimately discharge into the Fergus and Shannon rivers (SPAs & SACs). There are several other SACs, SPAs an p/NHAs in the wider area, and the site and environs may be of value to mobile qualifying species from further afield sites (incl. otter, birds & bats).

The relevant provisions of the County Development Plan (CDP) are summarised in section 5.2 above, and Chapter 15 deals with Biodiversity and Natural Heritage. CDP15.1 seeks to protect biodiversity. CDP15.3 to 6 seeks to protect European and National sites. CDP15.8 to 22 seeks to protect non-designated sites, biodiversity and habitats (incl. waterbodies, wetlands, woodlands, trees & hedgerows). CDP15.28 seeks to designate Dark Sky Reserve, which is of particular importance to bats.

European sites: The site is not located within or close to any designated European sites although there are c.23 SACs and SPAs within a c.15km radius of the project. These sites have been designated for a variety of habitats (incl. woodlands, wetlands, turloughs & caves) and species (incl. otter, birds, bats & fish). Issues related to European sites will be addressed in Section 9.0 (Appropriate Assessment).

National sites: The site is not located within or close to any designated National sites although there are many NHAs and p/NHAs within a c.15km radius of the project. These sites have been designated for a similar variety of habitats and species as the European sites. Although there may be an aquatic connection between the Data Centre site and some of the nationally designated sites, it is unlikely that the project would have an adverse impact on them, subject to the implementation of the EIAR surface and groundwater water quality protection mitigation measures and any recommended planning conditions (Refer to section 7.5 above). The replanting of the lost hedgerows and trees as per the landscaping proposals and the Landscape and Biodiversity Management Plan would ensure that

any qualifying species (incl. birds & bats) from further afield sites would not be adversely affected in the long term by a loss of breeding, roosting, foraging or commuting habitat.

Sensitive Habitats: Several sensitive habitat types were recorded mainly around the outer perimeter of the site during the desk-top and site surveys. These included habitats that are valued as being of local importance (higher value) or higher value (county, national & international) and include lakes and ponds, reed swamps, marsh and fens, grasslands (incl. Dry calcareous & neutral grassland), and hedgerows, trees and woodlands (incl. Riparian & Alluvial). The proposed development would occupy the central portion of the site and the project elements would mainly be located at a substantial distance from the sensitive habitats which are located in and around the perimeter of the site. A 10ha buffer zone would be retained to protect the woodland and wetland habitats located along the Ballymacahill / Spancelhill Stream in the W section of the site, and also around Toureen Lough and in the SW section, in line with Development Plan requirements. Sections of lost Dry Calcareous Grassland habitat would be replaced under the supervision of a Project Ecologist.

Other habitats: There is a myriad of agricultural and amenity grassland habitats located within the environs of the data centre site, and along the haul routes which would be marginally affected by the proposed works. However, having regard to the low conservation value of these habitats, I am satisfied that there would not be any significant loss of or damage to any other habitats, subject to adherence to best construction practices.

Flora: No protected plant species contained within the Flora (Protection) Order were recorded. However, one rare plant species of Fen bedstraw (*Gallium uligsosum*) was recorded in the Rich Fen and Flush habitat in the N section of the site, and it may occur at other wetland locations around the perimeter of the site. Although this species and any suitable support habitat are at a remove from the project elements, a preconstruction survey of fen and wetland areas within the site should be undertaken. Any areas where Fen bedstraw (*Gallium uligsosum*) is recorded should be fenced off by a 5m buffer for the duration of the construction works. I note that no Third Schedule non-native invasive plant species were recorded during the surveys.

However, the applicant should prepare an Invasive Species Management Plan to ensure that no non-native species are introduced during the construction phase.

Badgers: Three badger setts were identified within the site but well outside the footprint of the development, and it is possible that foraging activity occurs within the site. Potential adverse impacts on this species could include the destruction of all or part of the sett, construction phase disturbance especially during the breeding season which could lead to the abandonment of the sett, accidents and mortality, and the loss of foraging habitat within the group's territory, in the absence of mitigation. Buffers should be provided around any known and newly recorded Badger setts and entrances. This could be addressed by way of a planning condition would require: - avoidance of setts; pre-construction surveys; monitoring hedgerow and shrub clearance; exclusion zones around sett entrances (30m) with security fencing and scrub retention within these zones; undertaking works outside the breeding season, but if required then no works within 50m of the sett for general construction and 150m for noisy and vibratory activities; built-in construction design should allow for escape from trenches; and NPWS Derogation Licences as required. I am satisfied that this range of measures would protect Badgers, their setts and nearby foraging territory from any significant adverse impacts.

Otter: It is unlikely that Otter commutes across the site and there is no physical evidence that it uses the overall site as a commuting route. However, evidence of activity was recorded in the vicinity of the Ballymacahill / Spancelhill Stream to the W of the site and around Toureen Lough in the SW section. No significant adverse impacts are anticipated for Otter in terms of loss of foraging grounds or prey species. Given that Otter is a Qualifying Interest species for the Lower River Shannon SAC, it is possible that the construction works could cause a temporary short-term disturbance to this species. However, the avoidance of in-stream works and works close to the river would ensure that there would be no localised diminution of water quality or resultant loss of prey species, and operational phase discharge from attenuation pond outfall would also be managed (Refer to section 7.5 above). I am satisfied that that the presence of Otter in the vicinity of the site would not justify a reason to refuse permission for the project, however, a pre-construction Otter survey should be carried along the watercourses out before works commence.

Other mammals: The works would give rise to disturbance and displacement during the construction phase, however there would be no significant loss of foraging grounds and affected mammal species (incl. Irish hare) would gradually habituate to the campus after the works are completed.

Bats: The farm buildings, and linear hedgerows and stone walls that traverse the site have breeding, roosting, foraging and commuting potential for bats (incl. Lesser horseshoe, Brown long-eared, Soprano & Common pipistrelles and Leisler's bats), and several of the further afield SACs and pNHAs are designated for Lesser Horseshoe Bat. The various EIAR desk-top and site surveys confirm that the site and environs are frequented by bats, and although some of the older farm buildings may also have roosting potential, the applicant confirmed that no roosts were recorded during the surveys. The applicant should carry out a pre-construction survey of the any buildings to be demolished and seek a Derogation Licence for the safe and humane removal and relocation of any species present in the buildings. The removal of mature hedgerows trees and stone walls would have an adverse impact on foraging and commuting bats in the short term, however the proposed replanting would reduce this impact in the long term, provided that the replanting takes place during Phase 1 and before the end of the first year of construction. The planting of local indigenous hedgerow species should be required along with on-going monitoring to ensure that the replacement hedgerows mature to a satisfactory level Given that a 10-year permission is being sought, any delay in or prolongment of the replacement planting could have significant adverse impacts on bat populations in the area. Subject to compliance with the above requirements, I am satisfied that bats would gradually habituate with no significant adverse long-term impacts anticipated. Any on-site artificial lighting should be designed, installed and managed in a manner that does not interfere with bat activity whilst also ensuring public safety.

Birds: The farm buildings, and linear hedgerows and stone walls that traverse the site have breeding, nesting and foraging potential for birds (incl. Grey wagtail & passerines). Several species of wintering waterbirds were observed flying over the site, wading in the wetland areas, or resting during the site surveys, however the agricultural lands do not provide optimum foraging habitat for these species. A pair of buzzards were recorded flying in vicinity, and they are known to frequent lands

proximate to motorways, which would include the M18 to the immediate W. Hen harrier and Merlin, which are qualifying species for the Slieve Aughty Mountains SPA to the NE of the site were not recorded at or near to the site, and the agricultural lands do not provide optimum foraging habitat for this species.

Fisheries: Several fish species and/or support habitat were recorded in the downstream Fergus and Shannon rivers (incl. Atlantic salmon, Lampreys, & Twait shad), and the attenuation ponds and Toureen Lough contain suitable habitat for small fish species. However, the nearby Ballymacahill / Spancelhill Stream which ultimately discharges to the Fergus and Shannon rivers has a Q3 (Poor) status) and does not provide a suitable habitat for larger fish. The various EIAR water quality protection measures (as summarised in section 7.5 above) would ensure that any construction and/or operational phase run-off to surface or ground waters, or accidental fuel spills would be controlled and managed so as not to adversely affect fish species or their support habitat in any nearby or further afield watercourses. Furthermore, the substantial separation distances and avoidance of in-stream works would also ensure that there would be no localised diminution of water quality or resultant loss of habitat or prey species. The proposed works, following mitigation, would not interfere with the achievement of WFD Good status.

Reptiles and amphibians: Except for Common frog, the desk top studies and field surveys did not record any evidence of amphibian or reptilian species within the site, although it is possible that some reptilian species frequent the area (incl. Common lizard & Smooth newt). However, I am satisfied that the proposed development would not have an adverse impact on any species, other than general disturbance and minor habitat during construction, subject to the protection of the wetland areas around the site.

Invertebrates: No protected or sensitive invertebrate species were recorded within the site or environs during the desk-top and field surveys. White-clawed crayfish has been recorded further downstream of the site (incl. River Shannon) and freshwater pearl mussel is present in the unconnected Cloon River c.27km to the SW of the site. Marsh fritillary is not present within the site or environs which does not contain suitable support habitat for this species.

Conclusion:

Having regard to the foregoing and based on my assessment of the site and surrounding area, I am satisfied that the proposed development would not have a significant adverse impact on biodiversity, subject to the implementation of the consolidated EIAR mitigation measures and compliance with any recommended planning conditions. Thre would also be a net gain in biodiversity resulting from the additional tree and hedgerow planting. The proposed development would not give rise to any significant adverse local or cumulative impacts in-combination with other developments in the surrounding and wider area.

7.7 Other Issues

Archaeology: The site contains one Ringfort that is a designated Recorded Monument, and it is proposed to retain, protect and provide a buffer zone around this feature. There is another similar feature located in the field that adjoins the NE site boundary, and having regard to the character of the area the site may also contain other archaeological artefacts, as highlighted in the DAU submission. Pre-construction archaeological investigation and monitoring should therefore be required by way of a planning condition, in line with the DAU recommendations. The proposed development would not give rise to any significant adverse local or cumulative impacts on archaeology in-combination with other developments in the surrounding and wider area, subject to compliance with the recommended condition.

Built heritage: There are no protected structures or NIAH feather located within or close to the site that have the potential be affect by the proposed development, in terms of their character or setting, and some of the vernacular farm buildings within the site would be retained. The proposed development would not give rise to any significant adverse local or cumulative impacts on built heritage in-combination with other developments in the surrounding and wider area.

Cumulative impacts: The concerns raised by the Third Parties in relation to the consideration and assessment of potential cumulative impacts of data centres on a regional or national scale with respect to a number of issues (incl. climate change, emissions reduction targets, energy consumption & public water resources) are noted and addressed in detail in the preceding sections of this report. I am satisfied

that the requirement to assess the cumulative impacts of a project in-combination with other plans and projects relates to the surrounding geographic area, as opposed to the wider region or overall nation (or planet). The concerns raised relate to matters of national policy and it would be outside the Board's remit to adjudicate on them. Therefore, the proposed development would not give rise to any significant adverse local or cumulative impacts in-combination with other developments in the surrounding area.

Asbestos removal: The farm buildings proposed for demolition shall be managed in accordance with an agreed asbestos removal and disposal management plan.

Waste Management: No adverse impacts anticipated subject to compliance with the Construction and Demolition Waste Management Plan.

Vertical farm: Details of occupation should be agreed in advance with the planning authority.

Financial contributions & bonds: Standard conditions apply.

Public consultations & transparency: I am satisfied that the relevant consultation procedures were complied with, and I note that the PA received c.50 submissions.

Procedural issues: I am satisfied that relevant planning application procedures were complied with, including the Board's decision not to hold an oral hearing.

EIAR inaccuracies & discrepancies: I am satisfied that of these were largely addressed by the applicant in the various stages of application and appeal, and any outstanding errors did not hinder my assessment of the proposed development.

Conflicts of interest: The concerns raised are noted, however it outside of the Board's remit to adjudicate on such issues.

8.0 ENVIRONMENTAL IMPACT ASSESSMENT

8.1 Introduction

This section of the report deals with the potential environmental impacts of the proposed development during the construction and operational phases of the development.

This section should be read in conjunction with Section 7.0 (Planning Assessment) and Section 9.0 (Appropriate Assessment) of this report, and considered in conjunction with the concurrent report for ABP-313895-22 (R313895).

8.2 Compliance legislative requirements

The applicant has submitted an Environmental Impact Assessment Report (EIAR) and an consolidated EIAR report which are presented in a 'grouped format' comprising the following:

- Non-Technical Summary
- Main Statement
- Technical Appendices
- Photomontages

It is submitted by the applicant that the EIAR has also been prepared in accordance with the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 that came into effect on 1st September 2018, and which the Board will be aware, transposed by Directive 2014/52/EU into Irish planning law.

As is required under Article 3(1) of the EIA Directive 2011/92/EU amended by Directive 2014/52/EU, the EIAR identifies, describes and assesses in an appropriate manner, the direct and indirect significant effects of the project on the following environmental factors: (a) population and human health; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape and it equally considers the interaction between the factors referred to in points (a) to (d).

I am satisfied that the EIAR and consolidated EIAR has been prepared by competent experts to ensure its completeness and quality, and that the information contained in the EIAR and consolidated EIAR and supplementary information provided by the applicant adequately identifies and describes the direct, indirect and cumulative effects of the proposed development on the environment and complies with all relevant requirements. I am also satisfied that the information contained in the EIAR and consolidated EIAR complies with article 94 of the Planning and Development Regulations 2000, as amended, and the provisions of Article 5 of the EIA Directive 2014. I have carried out an examination of the information presented by the applicant, including the EIAR and consolidated EIAR, and the written submissions.

The EIAR describes the proposed development, including information on the site and the project size and design. A description of the main alternatives studied by the applicant and alternative locations considered, is provided and the reasons for the preferred choice. The consolidated EIAR report did not alter the conclusions of the original EIAR in relation to Alternatives. The impact of the proposed development was assessed under all the relevant headings with respect to population and human health; noise, air and climate; biodiversity; landscape; land, geology and soils; hydrology and hydrogeology; roads and traffic; material assets and cultural heritage; interactions of impacts; and the suggested mitigation measures are set out at the end of each chapter.

The consolidated EIAR was prepared to highlight any changes in the EIAR report following the submission of FI and clarification of FI. It follows the same format as the parent EIAR and contains some changes to the text in several chapters. The content and scope of the EIAR and consolidated EIAR are in compliance with Planning Regulations. No likely significant adverse impacts were identified in the EIAR or the consolidated EIAR.

8.3 Consideration of Reasonable Alternatives

The consideration of reasonable alternatives was considered in Section 3.0 of the EIAR, and the following alternatives were considered.

- Do Nothing Alternative
- Alternative locations
- Alternative designs & layouts
- Alternative processes & technologies
- Alternative mitigations

The EIAR concluded that the proposed development represents the optimum solution taking into account access to land, cost and environmental effects. Having examined the alternatives and the weighting system that was applied in the EIAR analysis, I would concur with this conclusion. The consolidated EIAR report did not alter the conclusions of the original EIAR with respect to the consideration of alternatives.

8.4 Likely Significant Effects

Section 7.0 of this report identifies, describes and assesses the main planning issues arising from the proposed development and Section 9.0 contains an Appropriate Assessment, and they should be considered in conjunction with the following environmental impact assessment (EIA). The report attached to the concurrent application before the Board under ABP-313895-22 for a substation and transmission cables which would serve the proposed development should also be considered in conjunction with this assessment.

The EIA identifies and summarises the likely significant effects of the proposed development on the environment with respect to several key receptors in the receiving environment. It identifies the main mitigation measures and any residual impacts following the implementation of these measures together with any planning conditions recommended in section 7.0 of this report, and it reaches a conclusion with respect to each of the receptors. It assesses cumulative impacts, identifies interactions between the receptors, and considers the risks associated with major accidents and/or disasters. The EIA reaches a Reasoned Conclusion.

For ease of reference the EIA is presented in a tabular format with respect to:

- Population and Human Health
- Air and Climate
- Landscape
- Biodiversity
- Land soil and water
- Material assets
- Cultural heritage

Population and human health	
EIAR sections 4, 8, 9, 10 & 12 of the EIAR and associated Technical Appendices and reports dealt with human health, population & employment; air quality (incl. emissions); noise & vibration; visual impact; and traffic & transportation. The EIAR described the receiving environment and identified potential impacts on human beings, human health, local amenities and health & safety. The EIAR did not predict any significant adverse impacts on human beings, population or human health as a result of dust emissions, changes to air quality (incl. emissions), noise & vibration, visual intrusion or traffic movements during the construction and operational phases, subject to implementation of mitigation measures which mainly relate to the management of traffic, construction works and operational activities. The consolidated EIAR did not significantly alter the EIAR conclusions.	
Submissions	***Concerns raised / Considerations***
An Taisce, Friends of the Irish Environment, Futureproof Clare, Clare Green Party, Christine Sharp, Martin Knox & Colin Doyle	Residential amenity Visual intrusion Noise, vibration & dust Air quality (incl. NO_2/NO_x emissions) Traffic generation & safety Health & safety
Potential impacts	***Assessment***
Potential for the following impacts on human beings during the construction and operational phases of the proposed development. ***Residential amenity:*** potential minor localised impacts on residential amenity during construction & operational phases.	There are several detached houses located to the N & S of the site, and the lands to the W of the M18 are characterised by residential and commercial uses. Refer to section 7.3 of this report for detailed analysis of residential impacts which concluded that there would be no significant adverse effects on amenity by way overshadowing, overlooking, loss of privacy,

	visual intrusion or general disturbance (incl. noise & emissions).
Visual: potential localised visual impacts on nearby houses, educational and commercial uses during the operational phase.	Refer to section 7.2 of this report for detailed analysis of visual impacts which concluded that there would be no significant adverse effects. The lands slope up from SW to NE and the data centre campus would be bound existing and augmented landscaping (incl. trees & hedges). Proposal would not be visually obtrusive or overbearing having regard to the ENT3 zoning objective, its scale, height & location within the central section of the overall zoned lands, the retained 10ha buffer to the W, and the proposed landscaped berms around the perimeter.
Noise & vibration**:** potential for localised noise impacts on amenities from construction activities and minor disturbance during the operational phase.	Refer to section 7.3 of this report for detailed analysis of residential impacts. Noise emissions during the construction phase are predicted to be less than the prevailing ambient noise levels at the nearest sensitive receptors. There will be no significant additional noise generated during the operational phase. Having regard to the separation distances with the nearest residential properties and the presence of landscaped berms, I am satisfied that the proposed development would not have any significant long-term effects during the construction or operational phases. This would be subject to implementation of the EIAR

	mitigation measures, compliance with planning conditions, and adherence to best construction practices and an agreed CEMP.
Dust: potential for dust & air quality impacts during construction phase.	Refer to section 7.3 of this report for detailed analysis of residential impacts. Dust emissions during the construction phase are not expected to travel more than c.200m from the site and dust and would mainly be deposited within c.50m of the works (depending on prevailing weather conditions). There would be no significant dust emissions during the operational phase. This would be subject to implementation of the EIAR mitigation measures, compliance with planning conditions, and adherence to best construction practices and an agreed CEMP.
Air quality (NO_x & NO_2): potential for localised impacts on residential, educational & commercial uses from operational emissions related to the back-up diesel generators at the data centre halls.	Refer to section 7.3 of this report for a detailed analysis of air quality impacts. The data centre will be mainly powered by the national grid and the on-site gas-powered energy centre. Each of the 6 x data storage buildings would be served by 11 x back-up (stand-by) diesel generators & associated exhaust flues (c.8m high). Although the generators could give rise to additional NO_2 & NO_x emissions, they would only operate for a short period of time during a temporary power outage, the threat of which would reduce as we transition towards increased renewable energy provision. The peer reviewed EIAR air dispersion modelling

	results indicate that ambient concentrations are within relevant air quality standards for NO_x & NO_2 with concentrations decreasing with distance. No adverse impacts on local or regional air quality predicted or public health anticipated from the emissions.
Traffic: Construction & operational traffic volumes have potential for localised air quality impacts, traffic disruption & road safety.	Refer to section 7.4 of this report for a detailed analysis of movement & access impacts. The national, regional and local road network has sufficient capacity to assimilate the additional traffic volumes associated with the construction & operational phases. The vehicular access arrangements off the R352 Tulla Road are acceptable, and adequate on-site car and bicycle parking would be provided. No adverse impacts anticipated. This would be subject to implementation of the EIAR mitigation measures, compliance with planning conditions, and adherence to best construction practices and an agreed CEMP (incl. TMP).
Health & safety: Potential for adverse impacts on health & safety from on-site accidents.	On-site accident concerns would be addressed by way of compliance with all relevant health and safety legislation.
Residual Effects: There will be some increase in noise, dust, NO_x/NO_2 & traffic emissions during the construction & operational phases however predicted levels are within guidance limit values. Residual impacts are not predicted to be significant subject to the implementation of mitigation measures & suggested conditions.	

Cumulative Impacts: The proposed development would give rise to some minor cumulative impacts in-combination with the construction of the proposed substation, with no significant cumulative impacts predicted during the operational phase.
Conclusion: I have considered all the written submissions made in relation to potential direct and indirect impacts on population and human health, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Air and Climate	
EIAR sections 8 & 12 of the EIAR and associated Technical Appendices and reports dealt with air quality & climate and traffic & transportation. The EIAR described the receiving environment and identified potential impacts on air quality & climate. The EIAR did not predict any significant adverse impacts on air and climate as a result of dust emissions or traffic movements during either phase, or on air and climate during the operational phase of the data centre, subject to implementation of mitigation measures. The consolidated EIAR did not significantly alter the EIAR conclusions.	
Submissions	***Concerns raised / Considerations***
An Taisce, Friends of the Irish Environment, Futureproof Clare, Clare Green Party, Christine Sharp, Martin Knox & Colin Doyle	Dust & traffic emissions Energy demand CO_2 emissions & climate change NO_x NO_2 emissions
Potential impacts	***Assessment***
Dust: Potential short term localised impacts on air quality resulting from dust emissions during the construction phase.	Dust emissions during the construction phase are not expected to travel more than c.200m from the site and dust and would mainly be deposited within c.50m of the works (depending on prevailing weather conditions). There would be no significant dust emissions during the operational phase. Having regard to the separation distances to the nearest sensitive receptors, I am satisfied that the proposed development would not have any significant long-term effects during the construction or operational phases. This would be subject to implementation of the EIAR mitigation measures, compliance with planning conditions, and adherence to best construction practices and an agreed CEMP.

Traffic emissions: Potential short term localised impacts on air quality resulting from increased traffic volumes during construction and operational phases.	Refer to section 7.4 of this report for a detailed analysis of movement & access impacts. The national, regional and local road network has sufficient capacity to assimilate the additional traffic volumes associated with the construction & operational phases. The proposed development would not have any significant long-term effects during the construction or operational phases. This would be subject to compliance with the EIAR mitigation measures, compliance with best construction practices and adherence to an agreed CEMP which should contain a Traffic Management Plan.
Air quality (NO_x & NO_2): potential for localised impacts on residential, educational & commercial uses from operational emissions related to the back-up diesel generators at the data centre halls.	Refer to section 7.3 of this report for a detailed analysis of air quality impacts. The data centre will be mainly powered by the national grid and the on-site gas-powered energy centre. Each of the 6 x data storage buildings would be served by 11 x back-up (stand-by) diesel generators & associated exhaust flues (c.8m high). Although the generators could give rise to additional NO_2 & NO_x emissions, they would only operate for a short period of time during a temporary power outage, the threat of which would reduce as we transition towards increased renewable energy provision. The peer reviewed EIAR air dispersion modelling results indicate that ambient concentrations are within relevant air quality standards for NO_x & NO_2 with concentrations decreasing with distance. No adverse impacts on local or

	regional air quality predicted or public health anticipated from the emissions. Refer to section 7.1 of this report which concluded that a balance will be achieved as Ireland moves towards achieving its renewable energy and emission reduction targets by 2030 and beyond.
Energy demand & CO_2: Potential for long terms impacts on achievement of Climate Change & carbon emission reduction targets (EU & National).	
Residual Effects: There will be some increase in dust & traffic related emissions during the construction phase, and potential for increased NO_x/NO_2 emissions when the emergency back-up generators are temporarily utilised during the operational phase, however predicted levels are within guidance limit values & residual impacts are not predicted to be significant, subject to the mitigation measures.	
Cumulative Impacts: The proposed development would give rise to some minor cumulative impacts in-combination with the construction of the proposed substation, with no significant cumulative impacts predicted during the operational phase.	
Conclusion: I have considered all the written submissions made in relation to potential direct & indirect impacts on air and climate, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

Landscape	
EIAR section 10 of the EIAR and associated Technical Appendices, Photomontages & LIVA undertook an assessment of landscape and visual effects. The EIAR described the receiving environment and identified potential impacts on the landscape and visual amenity from several viewpoints around the site (incl. the road network, residential & community buildings and the surrounding rural area). The EIAR did not predict any significant adverse impacts on landscape during the construction and operational phases, subject to the construction of the landscaped berms, replacement tree and hedgerow planting and implementation of mitigation measures. The consolidated EIAR did not alter the EIAR conclusions to any significant extent.	
Submissions	***Concerns raised / Considerations***
	Landscape character. Visual amenity. Heritage features
Potential impacts	***Assessment***
There is potential for the following impacts on the landscape and visual amenity during the construction and operational phases of the proposed development.	The project would not be located within a sensitive landscape, there are no protected views across the site. The agricultural lands slope up from SW to NE, and the site is bound to the N, W & E by agricultural lands and to the S by the R352. There is a designated 10ha buffer to the W of the site along the Ballymacahill / Spancelhill Stream, and smaller buffers around Toureen Lough in the SW section & and a Ringfort in the NE section. The data centre campus would be centrally located within lands that are zoned ENT3 for enterprise uses (incl. data centres).

Residential & public amenity: Potential for minor localised visual impacts on houses located to the N & S of the site along the R352 & local roads, and on residential, educational and commercial areas to the SW of the site and M18, on the approach to Ennis, during the operational phase.	Refer to section 7.2 of this report for a detailed analysis of visual impacts which concluded that there would be no long term significant adverse effects. The site boundaries would be defined by landscaped berms & replacement planting would result in a net increase. No adverse on impacts on visual amenity are anticipated, subject to the implementation of mitigation measures (incl. landscaping & planting) & compliance with recommended conditions (incl. early implementation of landscaping).
Road network: Further potential for minor localised visual impacts on views from along the road network during the operational phase (M18, R352 & local roads to N & E).	Although there would be intermittent views of the buildings from the surrounding road network, the impact would diminish over time as the tree and hedgerow planting matures.
Heritage features: Potential for minor localised visual impacts on views towards the Recorded Monuments (Ringforts) located within & outside the NE section of the site, and the wooded areas located along the Ballymacahill / Spancelhill Stream & Toureen Lough in the W and SW sections, during operational phase.	There would be no adverse effects on the character or setting of the ringforts, wooded areas or any other cultural or natural heritage features in the surrounding area, having regard to the buffer zones, separation distances, undergrounding of existing & proposed transmission cables, and the erection of landscaped berms around the site perimeter.

Residual Effects: Impacts predicted to be minor subject to implementation of mitigation measures and will diminish over time as the landscaping matures.
Cumulative Impacts: None predicted.
Conclusion: I have considered all the potential direct and indirect impacts on landscape, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Biodiversity	
EIAR sections 5, 6 & 7 and the associated Technical Appendices and reports dealt with: - land, soils, geology & hydrogeology; hydrology & water quality; and biodiversity. Extensive desk top studies & seasonal field surveys were undertaken, and AA Screening & NIS reports were prepared (and revised). The EIAR described the receiving environment as comprising low-intensity agricultural fields defined by trees, hedgerows & stone walls, with a variety of soil types. There is an extensive wooded area parallel to the Ballymacahill / Spancelhill Stream to the W, along with a smaller wooded area around Toureen Lough in the SW section. The lands are underlain by limestone bedrock which is locally karstified, and there are several small ponds, swallow holes & springs dotted around & adjacent to the site. The lands mainly drain W and SW to the Ballymacahill /Spancelhill Stream which forms a confluence with the downstream Garrus River, which ultimately discharges to the Fergus & Shannon Rivers (SAC & SPA). The E section partly drains S towards the Tulla Road & beyond via underlying karst features. The EIAR did not identify any sensitive sites within the project site, although there are several European & national sites in the wider area which have been designated for a variety of habitats & species (incl. waterbodies, wetlands, mammals, birds, bats & fish). It recorded badger & otter activity within the site and environs, and the presence of the rare Fen bedstraw in the N section. It noted that the site (incl. lands, hedgerows & farm buildings) may be used by roosting, nesting, foraging & commuting birds & bats, and that the on-site pods and nearby watercourse may provide support habitat for fish. The EIAR did not predict any significant adverse impacts on biodiversity during the construction and operational phases, subject to the implementation of mitigation measures to protect ground & surface water quality, habitats & species. The consolidated EIAR and NIS did not alter the conclusions to any significant extent.	
Submissions	***Concerns raised / Considerations***
DAU/NPWS & Christine Sharp (and others)	Loss or damage to habitats (incl. woodlands, wetlands, hedgerows & grasslands). Impacts on water quality (incl. aquatic ecology & fisheries).

	Impacts on wildlife (incl. otter, badger, birds, bats & plant species [incl. Fen bedstraw]).
Potential impacts	***Assessment***
The site comprises low-intensity agricultural grazing land, which is defined by trees, hedgerows & stonewalls, and dotted with ponds, swallow holes & springs. It has an aquatic connection to the Ballymacahill / Spancelhill Stream and downstream Gaurus, Fergus & Shannon rivers. Foraging otter, birds & bats have been recorded within the site & there are badger setts around the perimeter. A rare plant species (Fen bedstraw) is present in the N section. There is potential for the following impacts on Biodiversity during the construction & operational phases.	The site & environs are not covered by any sensitive natural heritage designations. The site contains woodlands, wetlands, grasslands & hedgerows, it has an aquatic connection to a nearby watercourse, and there is evidence that it is used / frequented by several species of animal (incl. otter, badgers, birds & bats) for nesting, roosting, foraging & commuting. The rare Fen bedstraw was recorded in the N fenland section. The consolidated EIAR, NIS & CEMP contain several mitigation measures to protect water quality & biodiversity.
European sites: Potential aquatic and/or mobile connections to sensitive sites in the wider area***.***	Refer to Section 9.0 of this report (AA) which concluded that there would be no loss, disturbance or damage to any designated sites, habitats or species during the construction or operational phases.
National sites: Potential aquatic and/or mobile connections to sensitive NHAs & proposed NHAs & NHA in the wider area***.***	Refer to Section 7.6 of this report which concluded that there would be no loss, disturbance or damage to any sites, during the construction or operational phases.

Habitats & species: Potential for loss, damage, or disturbance to habitats & species during the construction & operational phases.	Refer to Sections 7.5 & 7.6 of this report (Water Quality & Biodiversity) which concluded that there would be no significant loss, damage or disturbance to any habitats or species during any of the phases. This would be subject to the implementation of mitigation measures (incl. buffers & landscaping) & compliance with recommended conditions (incl. early implementation of landscaping).
Habitats: Potential for permanent localised loss, damage, or alteration to habitats (incl. woodlands, waterbodies, wetlands, grasslands & hedgerows) during the construction phase, and potential adverse impacts from airborne emissions during the operational phase (from backup generators).	The woodlands habitat along the Ballymachill / Spancelhill Stream in the W section would be protected by a c.10ha buffer, as would the wooded area around Toureen Lough in the SW section. The central location of the buildings within the overall c.60ha site would contribute to the protection of the myriad of habitats located around the perimeter of the site. The loss of some Dry calcareous grassland habitat would be compensated by replanting under the supervision of the Project Ecologist. Several non-designated habitats within the centre of the site which are of mainly local importance (incl. hedgerows) would be permanently lost or altered. However, the proposal to replant trees & hedgerows within the site and on the landscaped berms would result in a net gain in biodiversity overall, and the long-term impact would not be significant. The back-up generators would only be used in emergencies, and the peer reviewed dispersal modelling for $N0_x$ and $N0_2$ confirm that any

	resultant impacts would be minor with concentrations recusing with distance.
Flora: Potential for permanent localised loss of plant species during construction phase (incl. some rare Fen bedstraw & species rich calcareous grasslands), and potential adverse impacts from airborne emissions during the operational phase (from backup generators).	Several non-designated plant species of local importance would be permanently lost but given their lack of sensitivity and the proposal to plant native tree and hedgerow species on the landscaped berms, the overall long-term impact would not be significant. The central location of the buildings within the overall c.60ha site would contribute to the protection of the myriad of habitats located around the perimeter of the site that host some rare plant species. However, a pre-construction survey should be undertaken, and buffers provided around sensitive wetland areas and rare plant species. As above for habitats in relation to replacement habitat & airborne emissions.
Mammals: Potential for localised habitat loss and general disturbance to several species (incl. otter, badger & Irish hare) during the construction & operational phases.	Several species of ***mammal*** would be disturbed during the construction & operational phases (incl. otter, badger & hare). Most will return and habituate to activity on the site in the long term during the operational phase. The buffers around the W woodland and SW Toureen Lough, along with the central location of the buildings within the c.60ha site would contribute to the protection of the myriad of habitats located around the perimeter of the site that are frequented by these species (incl. for nesting, foraging & commuting). The proposed hedgerow replanting and

	landscaped berms around the perimeter would help to minimise any long-term adverse impacts, subject to the use of native species. The project footprint would avoid the 3 x badger setts around the perimeter of the site, however, the setts should be further protected by buffer zones, and artificial lighting should be avoided during both phases, to ensure the protection of this species. Fencing panels should be erected in such a manner so as allow wildlife to traverse the site.
Birds: Potential for localised habitat loss and general disturbance to several bird species during the construction & operational phases.	Several species of ***bird*** frequent the site and utilise the various habitats (incl. woodlands, wetlands & hedgerows) and farm buildings for nesting & foraging (mainly passerines). Buzzards and some wintering waterbirds were also noted flying overhead although the site does not offer suitable nesting or foraging habitat for these species. Vegetation clearance during the construction phase should take place outside of the bird nesting season. Any loss of supporting habitat (incl. hedgerows) would be compensated in the long-term by the planting of the additional hedgerows & perimeter landscaped berms. However, native species should be planted, and landscaping should take place early on in Phase 1. The undergrounding of the existing & proposed transmission lines would reduce the risk of collisions & subsequent fatalities for all species, and in particular for any raptors or

	wintering waterbirds that are qualifying species for the further afield European sites.
Bats: Potential for localised habitat loss & general disturbance to several bat species during the construction & operational phases (incl. Lesser horseshoe, Brown long-eared, Soprano & Common pipistrelles and Leisler's bats).	Several species of ***bat*** frequent the site & environs and utilise the various habitats (incl. hedgerows) and farm buildings for foraging & commuting. Bats could be adversely affected by the demolition of farm buildings, vegetation clearance and hedgerow removal during the construction phase, and by artificial lighting during both phases. EIAR mitigation measures include pre-construction bat surveys and minimal artificial lighting. A Derogation Licence would be sought to enable the humane relocation if required. As for birds above, any loss of supporting habitat (incl. hedgerows) would be compensated in the long-term by additional hedgerow planting which should comprise of native species & take place early on in Phase 1, to avoid a sustained loss of support habitat and any resultant long-term damage to bat populations. The undergrounding of the existing & proposed transmission lines would reduce the risk of collisions & subsequent fatalities for all species, and in particular for Lesser horseshoe bat, which is a qualifying species for several further afield European sites.
Aquatic species: Potential for localised loss of, or disturbance to freshwater species because of a deterioration in water quality due to	The site mainly drains W & SW to the Ballymacahill / Spancelhill Stream which forms a confluence with the downstream Gaurus River and ultimately discharges to the Fergus

sedimentation, spillages and surface water runoff during the construction & operational phases.	& Shannon rivers, and party S in the E section vis underlying karst features. The on-site waterbodies and nearby watercourse may contain suitable habitat for some fish species in their various life cycle stages. However, no sensitive species or support habitat were recorded in the nearby stream which has a Q3 status, although several species are present further downstream in the Fergus & Shannon Rivers (incl. Salmon & Lampreys). There are no downstream records of any White-tailed crayfish or Freshwater-pearl mussel, or suitable support habitat for either species. Refer to section 7.5 of this report for a detailed analysis of the surface water management arrangements and section 7.6 for aquatic biodiversity. The proposed development would not have any significant long-term effects on aquatic species during the construction or operational phases. This would be subject to the implementation of EIAR surface water management arrangements & mitigation measures, compliance with conditions, and adherence to best construction practices and an agreed CEMP.
Other species: Potential for damage or disturbance to other species (incl. invertebrates, amphibians & reptiles) because of habitat loss & general disturbance during both phases.	Refer to section 7.6 of this report for a detailed analysis of potential impacts on other species which concluded that there would be no significant loss, damage or disturbance to these species during any of the phases.

Residual Effects: Impacts predicted to be minor subject to implementation of mitigation measures and any recommended planning conditions.
Cumulative Impacts: The proposed development, would give rise to some minor cumulative impacts in-combination with the construction of the proposed substation, with no significant cumulative impacts predicted during the operational phase.
Conclusion: I have considered all the written submissions made in relation to potential direct & indirect impacts on biodiversity, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Land, soil and water	
EIAR sections 5 & 6 and associated Technical Appendices & accompanying reports dealt with: - land, soils, geology & hydrogeology, and hydrology & water quality. The EIAR described the receiving environment, and several desktop studies, field surveys & ground investigation tests were undertaken. The site comprises agricultural lands underlain by Limestone bedrock that is locally karstified, and which contains a regionally Important Limestone Aquifer with an Extreme vulnerability rating in the W, and High to Moderate for the rest of the site. The site is locally karstified, and there several small ponds, swallow holes and springs dotted around the site, but mainly in the W section. The lands mainly drain W & SW to the Ballymachill / Spancelhill Stream and hence the Gaurus, Fergus & Shannon rivers, and partly S in the E section via underlying karst features, and there no particularly sensitive hydrogeological features in the vicinity. The EIAR described the proposed excavation & construction works, the installation of the underground cables and the creation of the perimeter berms. It identified potential impacts (incl. accidental sediment & chemical discharges to ground & surface water during the construction phase, surface water run-off during both phases and obstruction to groundwater flows). The EIAR also contained Engineering, Flood Risk Assessment, Surface Water Management Plan & Water Framework Directive Assessment reports. The EIAR did not predict any significant adverse impacts on land, soil or water during any of the phases, subject to implementation of the surface water drainage arrangements & mitigation measures, which were elaborated on the FI & Clarification of FI submissions (incl. containment, attenuation ponds, separate drainage systems, & management measures for surface water & fuels). The consolidated EIAR did not significantly alter these conclusions.	
Submissions	***Concerns raised / Considerations***
An Taisce, Friends of the Irish Environment, Futureproof Clare, Clare Green Party, Christine Sharp, Martin Knox & Colin Doyle	Ground & surface water quality. Water use & supply capacity. Wastewater treatment capacity. Flood risk in vicinity.
Potential impacts	***Assessment & mitigation measures***
There is potential for the following impacts on land, soil & water in	The site & environs comprise undulating low-intensity agricultural grazing land that slopes

relation to the works associated with the construction & operation of the proposed data centre campus & the installation of underground cables.	up from SW to NE. The lands are underlain by limestone bedrock which is covered by 4 main soil types. There is localised karstification, mainly in the SW section, and the site is dotted with ponds, swallow holes & springs. The site mainly drains W & SW to the Ballymacahill / Spancelhill River which forms a downstream confluence with the Gaurus River to ultimately discharge to the Fergus & Shannon Rivers, and partly S in the E section via karst features.
Water quality: Potential pollution of watercourses (with resultant impacts on aquatic ecology) by sediments released during construction works & by accidental fuel spillages or leaks during the construction & operational phases.	The proposed surface water drainage arrangements and mitigation measures contained in the consolidated EIAR would protect ground and surface water quality in the underlying aquifer, on-site ponds & nearby watercourses (incl. aquatic species) from contamination by sediments and chemical spills during the construction & operational phases. These measures include attenuation ponds (with hydro brakes), sediment traps, spillage kits and appropriate disposal of any identified contaminated soil waste. No diminution in water quality is anticipated in any of the receiving watercourses and the project would not interfere with the achievement of Good water quality status.
Ground & surface water contamination or obstruction: Potential impacts resulting from leakage & spillages from vehicles &	Refer to section 7.5 of this report for detailed analysis of drainage arrangements which concluded that there would be no significant adverse effects. This would be subject to the

fuel stores during the construction phase (data centre & underground cables), and potential minor impacts by accidental fuel spillages or leaks (from vehicles) during the operational phase.	implementation of EIAR mitigation measures, compliance with planning conditions, and adherence to best construction practice and the methodologies contained in the EIAR, CEMP, Engineering Report, Surface Water Management Plan and associated FI & Clarification of FI documents. Along with compliance with all relevant regulations these measures would ensure the protection of ground & surface water quality during the construction & operational phases. The avoidance of karst features and use of site-specific foundations would ensure that ground water flows are not obstructed. A final CEMP should be submitted to the planning authority before development commences.
Flood risk: Potential impacts resulting from uncontrolled surface water runoff within and down slope of the site, on nearby infrastructure (incl. M18 & R352) & watercourses.	Refer to section 7.5 of this report for detailed analysis of drainage & flood risk. No adverse flood risk impacts anticipated during the construction & operational phases. This would be subject to compliance with the implementation of surface water management arrangements (incl. attenuation ponds, hydro brakes & separate drainage to the watercourse), compliance with consolidated EIAR mitigation measures, adherence to best construction practices, and an agreed CEMP.
Water supply & wastewater capacity: Potential impacts on public water supply.	Refer to section 7.5 of this report for detailed analysis of water use & wastewater treatment, and IW confirmation of available capacity.

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of mitigation measures.
Cumulative Impacts: The proposed development, would give rise to some minor cumulative impacts in-combination with the construction of the proposed substation, with no significant cumulative impacts predicted during the operational phase.
Conclusion: I have considered all the written submissions made in relation to potential direct and indirect impacts on land, soil & water, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Material assets	
EIAR sections 12 & 13, associated Technical Appendices, and the FI submissions dealt with traffic, transportation & movement, and material assets (incl. access, power supply, telecommunications, water supply & wastewater, and waste management). The EIAR described the receiving environment (incl. the road network & existing and future access arrangements) and several desktop studies and traffic surveys were undertaken. The EIAR described the site as comprising agricultural fields located within lands zoned ENT3 for enterprise & data centre uses. It described the proposed movement, access, service and pedestrian & cyclist arrangements. It stated that the national, regional & local road network had adequate capacity, and that any short-term minor traffic impacts during the construction phase would be managed by mitigation measures (incl. a TMP). The EIAR did not predict any significant adverse impacts on material assets during the construction & operational phases. The consolidated EIAR did not alter the EIAR conclusions to any significant extent.	
Submissions	***Concerns raised / Considerations***
An Taisce, Friends of the Irish Environment, Futureproof Clare, Clare Green Party, Christine Sharp, Martin Knox & Colin Doyle	Traffic impacts & road network. Pedestrian & cyclist safety. Water quality & fisheries. Water use & supply capacity. Energy sources & supplies. Telecommunications connections.
Potential impacts	***Assessment & mitigation measures***
There is potential for the following impacts on material assets in relation to the construction & operational phases of the proposed development.	The proposed development would be situated within an area that is designated ENT3 for enterprise & data centre uses. The site & environs are connected to the local, regional and national road network, the area (but not the site) is served by an existing water supply & foul sewer, power supply, telecommunications & fibre-optic network. Refer to section 7.4 of this report for a detailed analysis of movement & access impacts. The

Traffic: Construction & operational traffic have potential for localised impacts on the road network & traffic safety.	national, regional & local road network has sufficient capacity to assimilate the additional traffic volumes associated with the construction & operational phases. The permanent & temporary vehicular access arrangements off the R352 are acceptable. Adequate on-site car & bicycle parking would be provided. No adverse impacts anticipated subject to implementation of EIAR mitigation measures, compliance with planning conditions, and adherence to an agreed CEMP & TMP.
Water supply & drainage: Potential impacts on environmental services related to the provision of clean water (incl. cooling water) and disposal of unclean water from the site (incl. wastewater & storm water), and resultant impacts on water quality and flood risk related to uncontained and/or unmanaged discharges.	Refer to section 7.5 of this report for a detailed analysis of water supply & drainage impacts. The proposed development would be connected to the existing public water supply along the R352, and IW have indicated that there will be adequate capacity to serve the project. Additional cooling water would be supplied via the rainwater harvesting systems. The development would drain to a nearby watercourse via a customised on-site drainage system (incl. attenuation ponds, filters & hydro brakes) which would manage discharge volumes, prevent flooding & protect downstream water quality, and avoid the M18 drainage network system as per Council requirements. Refer to EIA Land, Soil & Water above which concluded that the proposed development would not have significant impact on surface &

	ground or ground water and would not give rise to a flood risk. No adverse impacts anticipated subject to implementation of EIAR mitigation measures, compliance with planning conditions, and adherence to an agreed CEMP.
Power supply & telecommunications: Potential impacts on existing services.	No adverse impacts anticipated. The proposed development would be powered by the national grid via the existing 110kV substation to the W & the proposed on-site energy centre which would be powered by natural gas from the nearby gas pipeline to the E, which would ensure a continuity of supply. The grid will become more reliant on renewable energy input over time, and the on-site energy centre is capable of future adaption to renewable sources of gas. The site is connected to existing telecommunication & fibre-optic services.
Agriculture & fisheries**:** Potential impacts on agricultural land & food production, and fisheries resulting from an unmitigated diminution in water quality.	There will be permanent loss of agricultural land, however the Vertical Farm building will provide for an alternative form of food production which will utilise waste heat & water from the data centre halls. No adverse impacts on water quality (refer above) and hence no impacts on fisheries anticipated.

Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of mitigation measures and compliance with any recommended conditions.
Cumulative Impacts: The proposed development would give rise to some minor cumulative impacts in-combination with the construction of the proposed substation, with no significant cumulative impacts predicted during the operational phase.
Conclusion: I have considered all the written submissions made in relation to potential direct and indirect impacts on material assets, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.

Cultural heritage	
EIAR sections 10 & 11 and associated Technical Appendices dealt with landscape & visual impact, and archaeological, architectural & cultural heritage. The EIAR described the receiving environment as comprising agricultural fields in a rural area, and it identified several cultural artefacts within the site and study area (incl. RM Ringforts within & adjacent to the site). The EIAR described the proposed development and identified potential impacts on cultural heritage around the site. The EIAR did not predict any significant adverse impacts during the construction & operational phases, subject to implementation of mitigation measures (inc. buffer zones, testing, monitoring & recording). The consolidated EIAR did not alter the EIAR conclusions.	
Submissions	***Concerns raised / Considerations***
DAU	Impacts on underlying archaeology.
Potential impacts	***Assessment & mitigation measures***
Archaeology: Potential impacts on recorded & as yet undiscovered artefacts.	The site & environs are not covered by any sensitive designations, although there are 2 x Recorded Monuments (Ringforts) located within and adjacent to the NE section of the site, and several others in the study area. The Ringfort in the NE corner would be protected by a buffer zone which would be kept free of development. However, there may be as yet undiscovered archaeological artefacts, and the site should be investigated prior to construction commencing. This is in addition to implementing EIAR mitigation measures (incl. testing, monitoring & recording) & compliance with any recommended planning conditions.

Heritage features: Potential impact on character & setting of heritage features in the wider areas.	Refer to section 7.7 of this report and the EIA Landscape section which concluded that the proposed development would not have any adverse impacts on any heritage features in the area, and there are no recorded Protected Structure or NIAH features in the vicinity.
Residual Effects: Residual impacts are not predicted to be significant subject to the implementation of mitigation measures and compliance with any recommended planning conditions.	
Cumulative Impacts: The proposed development, would give rise to some minor cumulative impacts in-combination with the construction of the proposed substation, with no significant cumulative impacts predicted during the operational phase.	
Conclusion: I have considered all the written submissions made in relation to potential direct & indirect impacts on cultural heritage, in addition to those specifically identified in this section of the report. I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise.	

8.5 Cumulative Impacts

There are several existing, permitted or proposed plans and projects within a 20km radius of the proposed development that have the potential to result in-combination effects with the proposed development on the receiving environment (incl. renewable energy projects). These are addressed in each of the EIAR chapters and the consolidated EIAR. However, the main project relates to the concurrently proposed substation and transmission cables (ABP-313896-22) which would serve the proposed development. Having regard to the nature and scale of the various projects and the ENT3 zoning objective (incl. enterprise & data centre uses) for the overall lands, I am satisfied that adverse cumulative effects can be avoided, managed and mitigated by the embedded measures which form part of the proposed development, mitigations measures, and suitable conditions. There is, therefore, nothing to prevent the granting of approval on the grounds of cumulative effects.

8.6 Interactions and Interrelationships

I have also considered the interrelationships between the key receptors and whether this might as a whole affect the environment, even though the effects may be acceptable when considered on an individual basis. In particular, the potential arises for the following interactions and interrelationships.

Population and human health:

- Noise and dust
- Air quality and climate
- Roads and traffic (air quality, safety & disturbance)

Air & climate

- Noise and dust
- Roads and traffic (emissions)
- Population and Human Health

Landscape

- Population and Human Health (visual amenity)
- Material Assets and Cultural Heritage

Biodiversity:

- Hydrology (water quality & fisheries)
- Population and human health (water quality)
- Soils and geology (water quality)

Land, Soil and Water:

- Air quality
- Biodiversity (terrestrial & aquatic)
- Population & Human Health

Material Assets and Cultural Heritage:

- Population & human health
- Landscape (visual amenity & landscape character)
- Roads and traffic (disturbance & safety)

In conclusion, I am satisfied that any such impacts can be avoided, managed and mitigated by the measures which form part of the proposed development.

8.7 Risks associated with major accidents and/or disasters.

No outstanding risks associated with major accidents or disasters identified. Any potential impacts related to climate change have been factored into most sections of the EIAR consolidated EIAR. Whilst recognising the concerns raised in relation to cyber-attacks and cryptocurrency mining, I note that defence against such events outside the Boards remit.

8.8 Reasoned Conclusion

Having regard to the current Climate Action Act and Climate Action Plan, and the examination of environmental information contained above, and in particular to the EIAR and consolidated EIAR and the submissions from the planning authority, prescribed bodies and third-party appellants in the course of the application, and it is considered that the main significant direct and indirect effects of the proposed development on the environment have been identified in section 7.0 and section 8.0 of this report. It is considered that the proposed development would not give rise to any significant direct or indirect impacts of the environment, and the minor direct and indirect impacts are as follows.

- The ***risk of pollution of ground and surface waters during the construction and operation phases*** through a lack of control of surface water during excavation and construction, the mobilisation of sediments and other materials during excavation and construction and the necessity to undertake construction activities in the vicinity of existing watercourses. The construction of the proposed project could also potentially impact negatively on ground and surface waters by way of contamination through accidents and spillages. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan, Surface Water Management Plan, and the implementation of mitigation measures related to control and management of sediments, accidental spills and contamination, and drainage management.

- The ***risk of disruption to ground water flow patterns during the construction phase*** through a lack of control over and mismanagement of the excavation and drainage works, or inappropriate siting of foundations. These impacts would be mitigated by the avoidance of karst features, and the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - avoidance, design and water management.

- The proposed project would give rise ***biodiversity impacts*** arising from the habitat loss and fragmentation, changes to the vegetation on the site, loss of foraging habitat and disturbance to otters, badgers, birds and bats, connections to foraging, aquatic and water dependent habitats and general disturbance during the construction and operational phases. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan, the measures contained in the Landscape and Biodiversity Management Plan, and the implementation of mitigation measures.

- The proposed project would give rise to impacts on ***cultural heritage*** during the construction and operational phases would be avoided by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the consolidated EIAR report (incl. Avoidance & buffers), and by compliance with the recommended conditions in relation to archaeological assessment of the site.
- The proposed project would give rise to a minor localised increase in ***vehicle movements and resulting traffic impacts*** during the construction and operational phases. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan.

- The project could give rise to minor localised impacts on ***residential amenity*** during the construction (noise, dust, air quality, traffic safety & general disturbance) phase. These impacts would be mitigated by the implementation of measures related to the protection of air quality, control of noise and dust, traffic management and the erection of screening berms, by the agreement of measures within a Construction and Environment Management Plan.

9.0 APPROPRIATE ASSESSMENT

9.1 The AA Screening Report

The consolidated Screening Report described the site, environs and the proposed development, and it utilised the results of the EIAR desk studies and field surveys. The report confirmed that the proposed development would not be located within a European site. The report stated that there are 23 x European sites within a 15km radius of the proposed works, including 12 x SACs designated for Lesser horseshoe bat and 4 x SPAs designated for wetlands and waterbirds. The report screened out 15 of these sites and concluded that they would not be affected by the proposed development because of the substantial separation distances, upgradient location and/or the absence of any direct connections to the European sites.

9.2 AA Screening Assessment

The proposed development would not be located within an area covered by a European site designation, and it is not relevant to the maintenance of any such European site. There are 23 x European sites located within a c.15km radius / Zone of Influence of the site. The Qualifying Interests and approximate straight line separation distances to these European sites are listed below.

European sites	QIs & SCIs	Distance
SACs	***Qualifying Interests***	
Lower River Shannon	Sandbanks & Estuaries Mudflats & sandflats Coastal lagoons & Reefs Large shallow inlets & bays, Perennial vegetation of stony banks Vegetated sea cliffs Salicornia & other annuals Atlantic & Mediterranean salt meadows Floating river vegetation Molinia meadows & Alluvial forests Freshwater Pearl Mussel Sea, Brook & River Lamprey Salmon & Otter Common Bottlenose Dolphin	1.4km SW
Ballyallia Lake	Natural eutrophic lakes	2.1km W
Old Domestic Building (Keevagh)	Lesser horseshoe bat	4.3km SE
Dromore Woods & Loughs	Lesser horseshoe bat Natural eutrophic lakes Tall herb fringe communities Limestone pavements Otter	4.4km N
Old Domestic Buildings, Rylane	Lesser horseshoe bat	5.9km N
Newgrove House	Lesser horseshoe bat	6.3km E

Newhall & Edenvale Complex	Lesser horseshoe bat Caves	6.5km SW
Toonagh Estate	Lesser horseshoe bat	6.6km NW
Poulnagordon Cave (Quin)	Lesser horseshoe bat	7.0km SE
Poulnadatig Cave	Lesser horseshoe bat Caves	7.2km SW
Old Farm Buildings, Ballmacrogan	Lesser horseshoe bat	8.1km NW
Moyree River System	Lesser horseshoe bat Caves Floating river vegetation Alkaline fens Limestone pavements Otter	8.2km N
Ballycullinan, Old Domestic Building	Lesser horseshoe bat	9.2km NW
East Burren Complex	Hard oligo-mesotrophic waters Turloughs & Floating river vegetation Alpine & Boreal heaths Juniperus communis formations Calaminarian grasslands Semi-natural dry grasslands Lowland hay meadows Calcareous fens Petrifying springs with tufa formation Alkaline fens & Alluvial forests Limestone pavements Lesser Horseshoe Bat & Caves Otter & Marsh Fritillary	9.3km N
Ballycullinan Lake	Calcareous fens	9.4km NW
Ballyogan Lough	Calcareous fens Limestone pavements	9.7km N
Lough Gash Turlough	Turloughs Rivers with muddy banks	11.1km S
Knockanira House	Lesser horseshoe bat	11.8km SW
Kilkishen House	Lesser horseshoe bat	12.7km SE
SPAs	***Special Conservation Interests***	
Balliallia Lough	Teal, Coot & Mallard Wigeon & Shoveller Gadwell & Black-tailed Godwit Wetland & Waterbirds	2.8km NW
Slieve Aughty Mountains	Merlin & Hen Harrier	4.4km NE
River Shannon & River Fergus	Cormorant & Whooper Swan Light-bellied Brent Goose Shelduck & Scaup Wigeon, Teal, Pintail & Shoveler Ringed, Golden & Grey Plovers Lapwing, Knot & Dunlin Black-tailed & Bar-tailed Godwits Curlew, Redshank & Greenshank Black-headed Gull Wetland & Waterbirds	5.1km SW
Corofin Wetlands	Black-tailed Godwit & Teal Whooper swan & Wigeon Little grebe Wetland & Waterbirds	10.7km NW

SAC Conservation Objectives (where listed):

- To maintain and / or restore the favourable conservation condition of the habitats and species for which the SACs have been selected.

SPA Conservation Objectives:

- To maintain and/or restore the favourable conservation condition of bird species listed as SCIs for these sites (Slieve Aughty Mountains, River Shannon & River Fergus Estuaries, and Ballyallia Lough SPAs).

- To maintain the favourable conservation condition of the wetland habitat as a resource for the regularly-occurring migratory waterbirds that utilise it (River Shannon & Fergus Estuaries and Corofin Wetlands SPAs).

The potential effects relate to:

- Release and transport of pollutants in ground and/or surface water flowing into the European sites via underlying ground or surface water bodies.
- Release and transport of airborne pollutants.
- Ex-situ impacts on qualifying species outside the European sites but which are an integral and connected part of the population of qualifying interest species, including: -
    - Loss of or damage to habitats used by QI/SCI species.
    - Loss of foraging & commuting areas used by QI/SCI species.
    - General disturbance to QI/SCI species during construction.
- Impacts on water quality and quantity, and/or vegetative composition of support habitats.
- Impacts on vegetative composition of habitats and/or support habitats as a result of colonisation by invasive species.

Screening assessment:

- ***Newgrove House, Newhall & Edenvale Complex, Toonagh Estate, Poulnagordon Cave (Quin), Poulnadatig Cave, Old Farm Buildings (Ballmacrogan), Moyree River System, Ballycullinan (Old Domestic Building), East Burren Complex, Ballycullinan Lake, Ballyogan Lough, Lough Gash Turlough, Knockanira House & Kilkishen House SACs***: Having regard to the nature of the Qualifying Interests for these the sites (incl. Lesser horseshoe bat & Caves), the known foraging range of Lesser horseshoe bat (c.6km), the substantial separation distance between the project and the European sites, and the absence of a downstream aquatic connection with these sites, it is unlikely that the proposed development would have an adverse effect on the QI habitats and species or their Conservation Objectives for these SAC sites.

- ***Dromore Woods & Loughs, Old Domestic Buildings (Keevagh), Old Domestic Buildings (Rylane) and Lower River Shannon SACs***: Having regard to the nature of the QIs for these the sites (incl. Lesser horseshoe bat & it's known foraging range), the proximity of the project to the European site, and the presence of a downstream aquatic connection with a site, it is possible that the proposed development could have an adverse effect on the QI habitats and species or their Conservation Objectives, and further consideration is therefore required.

- ***Ballyallia Lough, River Shannon & Fergus Estuaries, Slieve Aughty Mountains and Corofin Wetlands SPAs***: Having regard to the nature of the SCIs for these sites (incl. waterbirds & raptors) and their known foraging range, the proximity of the project to a European site, and the presence of a downstream aquatic connection with a site, it is possible that the proposed development could have an adverse effect on the SCI species and their Conservation Objectives, and further consideration is therefore required.

9.3 AA Screening Conclusion

In conclusion, having regard to the nature and scale of the proposed development, to the separation of the data centre site from the European sites, to the nature of the qualifying/conservation interests and conservation objectives of the European sites and to the available information as presented in the consolidated EIAR and NIS regarding ground and surface water pathways and mobile connections between the site and the European sites, and other information available, it is my opinion that the proposed development has the potential to affect the following 8 x European sites, having regard to the conservation objectives of these sites, and that progression to a Stage 2 Appropriate Assessment is required.

Dromore Woods & Loughs SAC	**Ballyallia Lough SPA**
Old Domestic Buildings (Keevagh) SAC	**River Shannon & Fergus Estuaries SPA**
Old Domestic Buildings (Rylane) SAC	**Slieve Aughty Mountains SPA**
Lower River Shannon SAC	**Corofin Wetlands SPA**

9.4 Appropriate Assessment

The details for the remaining European sites within the Zone of Influence of the proposed development are set out below:

Favourable Conservation Status is achieved when:

1. ***Habitats***

   - The natural range (and area covered) is stable or increasing,
   - The specific structure and functions which are necessary for its long-term maintenance exist now and for the foreseeable future,
   - The conservation status of its typical species is favourable.

2. ***Species***

   - Population dynamics data indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats,

- The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future,
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Potential direct effects:

The proposed data centre campus would not be located within a European site, and it is not relevant to the maintenance of a European site. No potential for direct effects having regard to the location and scale of the development and to the separation distance between the works and the qualifying interest habitats and species.

Potential indirect effects:

There is potential for indirect effects on the European sites and their qualifying habitats and species during the ***construction phase*** resulting from the loss of foraging, resting and nesting places, loss of or damage to support habitat, and water pollution. The unmitigated release of fine sediments during construction works and hydrocarbons by way of accidental spillages from machinery, could give rise to water pollution in the surrounding waterbodies with resultant impacts on the availability of biomass for the constituent species. Excavations into bedrock could give rise to groundwater contamination and changes in flow patterns with resultant impacts on the surrounding freshwater habitats. The uncontrolled introduction of invasive species from works vehicles could give rise to the colonisation of support habitats by invasive species, with resultant impacts on habitats and species. All in the absence of mitigation. There is also potential for additional significant indirect adverse effects during the ***operational phase*** when the works are complete in relation to the operational data centre and associated surface water run-off from hard infrastructure (incl. barrier effects from structures & fencing and water quality), and from airborne emissions (incl. from the back-up emergency generators).

Mitigation measures:

The consolidated EIAR & NIS mitigation measures (incl. embedded design & site-specific foundations), which would serve to protect the European sites from adverse effects, include:

- Identification and avoidance of karst features.
- Embedded design (incl. foundation types).
- Surface & ground water management (incl. SW Management Plan, interceptor drains, flow limiters, hydro brakes, attenuation ponds, sediment traps, settlement ponds & silt fences).
- No on-site maintenance of vehicles or plant.
- Bunded refuelling areas, emergency plan & spill kits.
- Control of cement & concrete.
- Preparation of a CEMP.
- Adherence to best construction practices.
- Invasive Species Plan.
- Timing & seasonality of works.
- Buffer zones (incl. wooded areas & waterbodies).
- Project Ecologist.

Threats to European sites:

Potential threats to the European sites include those posed by agricultural activities, urban and domestic wastewater discharges, quarrying, public water abstraction, and recreational activities (incl. fishing).

Likely significant effects on the SACs

Dromore Woods & Loughs, Old Domestic Buildings (Keevagh), Old Domestic Buildings (Rylane) & Lower River Shannon SACs: These SACs are located between 1.4km and 6.0km of the data centre campus site and they are designated for a variety of habitats (incl. riparian, lakes, meadows & forests) and several species (incl. Lampreys, Salmon & Otter). Having regard to the nature and scale of the work required to construct the data centre and associated infrastructure (incl. substantial site clearance, excavations & foundations), the characteristics of the surrounding lands which are in agricultural use, the separation distance between the proposed development and the European sites, the nature of the Qualifying Interests for each site, and the presence of a mobile or downstream aquatic connection over a short

distance, it is possible that the proposed development could have an adverse effect on these SACs and their Conservation Objectives.

I note that the QI Freshwater pearl mussel population of the ***Lower River Shannon SAC*** is located in the Cloon River which in a different river catchment area c. 27km to the S, and that the QI species of Common Bottlenose Dolphin does not frequent the receiving downstream freshwater watercourses, and they will be excluded from further consideration. I also note that in the absence of a downstream aquatic connection over a reasonable distance between the project site and the **Dromore Woods and Loughs SAC** to the W, and three of the QI habitats will be excluded from further consideration (incl. Natural eutrophic lakes, Tall herb fringe communities & Limestone pavements).

SAC Site name	Qualifying Interests	Attributes & targets
Dromore Woods & Loughs	***Lesser horseshoe bat***	Population per roost (261 min); Summer & Auxiliary roosts (no decline); Foraging habitat & Linear features (no significant decline within 2.5km of roost); Light pollution (no significant increase adjacent to roost or commuting routes within 2.5km of roost.
	Otter	Distribution (no decline); Extent of terrestrial & freshwater habitats (no decline); Couching sites & holts (No decline). Fish biomass (no decline); and Barriers to connectivity (no increase).
Old Domestic Buildings (Keevagh)	***Lesser horseshoe bat***	None specified (Refer above).
Old Domestic Buildings (Rylane)	***Lesser horseshoe bat***	None specified (Refer above).
Lower River Shannon	***Sandbanks***	Habitat distribution (stable); Habitat area (stable or increasing); and Community distribution (conserve community types).
	Estuaries, Reefs, Mudflats & sandflats, Large shallow inlets & bays	Habitat area (stable or increasing); and Community distribution (conserve community types).
	Coastal lagoons	Habitat area (stable); Habitat distribution (no decline); Salinity & Hydro regime (natural range); Barrier (hydro connectivity); Water quality

		(chlorophyll a, MRB & DIN within natural range); Depth of macrophyte colonisation (to depth of lagoon); Typical plant & animal species (maintain); and Negative indicator species (under control).
	Perennial vegetation of stony banks	Habitat distribution (stable); Habitat area (stable or increasing); Physical structure (maintain sediment supply); Vegetation structure (maintain zonation); Vegetation composition (maintain typical species & sub-communities); and Vegetation composition (min negative indicator species);
	Vegetated Sea cliffs	Habitat length (stable or increasing); Habitat distribution (no decline); Physical structure (maintain hydro regime); Vegetation structure (maintain habitat zonation); Vegetation structure (maintain height variation); Vegetation composition (maintain typical species); and Vegetation composition (min negative indicator species); and Vegetation composition (min bracken & woody species
	Salicornia & other annuals; Atlantic & Mediterranean salt meadows	Habitat distribution (stable); Habitat area (stable or increasing); Physical structure (maintain sediment supply); Physical structure (maintain creeks & pans); Physical structure (maintain tidal flooding regime); Vegetation structure (maintain height variation); Vegetation composition (maintain typical species); and Vegetation composition (min negative indicator species - Spartina angelica).
	Floating river vegetation	Habitat area (stable); Habitat distribution (no decline); Hydro regime (maintain appropriate regimes); Substratum composition (particle size ranges, appropriate to the habitat sub-type); Water quality (low nutrients); Vegetation composition (indicator species); Floodplain connectivity (maintain); and Riparian habitat (maintain).
	Molinia meadows	Habitat area (stable); Habitat distribution (no decline); Vegetation structure (herbs: grass ratio & Height); Vegetation composition (min 7 x positive

		indicator species, notable species, few non-native & negative indicator species); Vegetation structure (few woody species & bracken); and Physical structure (max 10% bare ground).
	Alluvial forests	Habitat area (stable); Habitat distribution (no decline); Woodland size (stable); Woodland structure (maintain diverse cover, height & natural regeneration); Hydro regime (maintain appropriate regimes); Woodland structure (dead wood, veteran trees local distinctiveness – no decline); Vegetation composition (no decline in native tree cover, variety & few non-native species).
	Lampreys	Distribution; Population structure; Juvenile density; Extent & distribution of spawning habitat; Juvenile density; & Availability of juvenile habitat.
	Salmon	Distribution (100% of river channels); Adult spawning fish (Conservation Limit); Salmon fry abundance (Maintain or exceed); Out-migrating smolt abundance No decline); number & distribution of redds (No decline); and water quality (min Q4).
	Otter	Distribution (no decline); Extent of terrestrial, marine & freshwater habitats (no decline); Couching sites & holts (No decline). Fish biomass (no decline); and Barriers to connectivity (no increase).

Habitats & fisheries: The data centre site mainly drains W and SW to the Ballymachill / Spancelhill Stream which flows into the Lower River Shannon SAC over a short distance via the Gaurus and Fergus rivers. There is potential for adverse impacts on the QI coastal and riparian terrestrial habitats, and QI fish species as result of the unmitigated release of fine sediments during the excavation and construction works, and the release of chemical pollutants during the construction and operational phases as a result of accidental spills and accidents, into the receiving water bodies. Potential adverse impacts would include changes in sediment balance and water quality in the downstream habitats, the introduction of invasive species from works vehicles with resultant changes in vegetation

composition and structure, and smothering of fish in their various life stages and support habitat. It is noted that the receiving waterbody, which has a Q3 (Poor) status, does not provide optimum support habitat for QI fish species. Following the implementation of EIAR / NIS mitigation measures (refer above), the measures contained in the Surface Water Management Plan and CEMP, in combination with the use of best construction practices and compliance with relevant requirements, I am satisfied that there would be no resultant adverse impacts on the QIs and their attributes and targets, or the Conservation Objectives for the Lower River Shannon SAC.

Otter: As for habitats & fisheries above. Any unmitigated resultant loss of fish (prey) species for otter or interference with commuting patterns along watercourses could have potential adverse impacts on this species. However, following the implementation of the EIAR and NIS (and other measures outlined above) I am satisfied that there would be no resultant adverse impacts on the attributes and targets for this species, or the Conservation Objectives for the Lower River Shannon SAC, subject also to compliance with a preconstruction survey condition.

Lesser horseshoe bat: The data centre site and environs are characterised by low-intensity agricultural fields that are defined by trees, mature hedgerows and stone walls, which have foraging and commuting potential for this species. There is potential for adverse impacts on the SACs that lie within 6km of the project site by way of loss of linear foraging and commuting habitat, artificial nighttime lighting and general disturbance. However, the attributes and targets for this species state that there should be no significant loss of foraging habitat and linear features within 2.5km of a known roost, and that there should be no significant increase in light pollution adjacent to a known roost or commuting routes within 2.5km of roost. The 3 x SACs (Old Domestic Building (Keevagh), Dromore Woods & Loughs, and Old Domestic Buildings (Rylane)) are located between c.4.3km and 5.9km from the site boundary which is well outside the 2.5km limit for breeders cited in the NPWS Conservation Objectives document. The proposed development would also provide for replacement hedgerow planting which would result in a net biodiversity gain, particularly for (non-breeding) foraging bats, and the artificial lighting would be managed in accordance with the submitted Lighting Plan. I am satisfied that there would be no resultant adverse impacts on the attributes and targets for this species,

or the Conservation Objectives for the Old Domestic Building (Keevagh), Dromore Woods & Loughs and Old Domestic Buildings, Rylane SACs, subject also to compliance with a Phase 1 landscaping condition.

Likely significant effects on the SPAs

Ballyallia Lough, River Shannon & Fergus Estuaries, Slieve Aughty Mountains & Corofin Wetlands* SPAs*: These SPAs are located between 2km and 11km of the data centre site and they are designated for a variety of bird species (incl. Whooper swan, Light-bellied brent goose, Black-tailed godwit, Black-headed gull & several other species of waterbird) along with 2 x species of raptor (Merlin & Hen harrier). Having regard to the nature and scale of the work required to erect the data centre campus (which would involve substantial excavations and the installation of several structures), and the results of the extensive bird survey results that were submitted by the applicant as part of the application, it is possible that the proposed development could have an adverse effect on the these SPA sites, their SCI species and/or their Conservation Objectives.

SPA Site name	SCIs	Attributes & targets
Ballyallia Lough	***Teal & Coot*** ***Wigeon & Shoveler*** ***Gadwell & Mallard*** ***Black-tailed Godwit*** ***Wetland & Waterbirds***	None specified.
River Shannon & Fergus Estuaries	***Cormorant*** ***Whooper Swan*** ***Light-bellied Brent Goose***	Breeding population abundance (no decline); Productivity rate (no decline); Distribution - breeding colonies (no decline); Prey biomass available (no decline); Barriers to connectivity (no increase); Disturbance at the breeding site (min human interference); Population trend (stable or increasing); and Distribution (no decrease).

	Shelduck & Scaup ***Wigeon & Teal*** ***Pintail & Shoveler*** ***Ringed, Golden & Grey Plovers*** ***Lapwing & Knot*** ***Dunlin & Curlew*** ***Black-tailed & Bar-tailed Godwits*** ***Redshank & Greenshank*** ***Black-headed Gull***	Population trend (stable or increasing); and Distribution (no decrease) for all these species.
	Wetland & Waterbirds	Wetland habitat area (stable & not significantly less than the area of 32,261ha)
Slieve Aughty Mountains	***Hen Harrier***	Population size (restore c. 14-24 confirmed breeding pairs); Productivity rate (restore); Spatial utilisation by breeding pairs (restore); Extent & condition of heath, bog & associated habitats (restore); Extent & condition of low intensity managed grasslands & associated habitats (restore); Extent and condition of hedgerows (maintain length & quality); Age structure of forest estate (achieve an even and consistent distribution); and Disturbance to breeding sites (avoid impacts on breeding HH).
	Merlin	Population size (stable or increasing); Productivity rate (maintain population); Distribution (available nesting options); Extent & condition of suitable open habitats for foraging (adequate availability); and Disturbance to breeding sites (avoid impacts on breeding).
Corofin Wetlands	***Black-tailed Godwit***	None specified.
	Teal & Wigeon ***Whooper swan*** ***Little grebe*** ***Wetland & Waterbirds***	Refer to Attributes & Targets for the River Shannon & Fergus Estuaries SPA above.

Waterbirds: The development site lies outside the core foraging range for several of the SCI bird species for these SPAs, and it does not contain suitable roosting of grazing habitat (relative to species specific dietary presences) for the more mobile

species. Therefore, there would be no direct or indirect effects on any of these species, other than some minor disturbance during the construction works. The proposed structures would not give rise to collision risk, displacement, or barrier to movement, and the undergrounding of the existing and proposed transmission cables would further reduce the risk of collision and thus fatalities. However, any diminution in water quality arising from a pollution event, including the unmitigated of release of fine sediments and accidental spills during both phases, could adversely affect downstream support habitats for water birds and the availability of prey species in the River Shannon & Fergus Estuaries SPA. This could give rise to potential impacts on SCI populations for this and the other SPAs, which share some of the more mobile SCI species (incl. Black-tailed godwit & Teal). Potential impacts on water quality are assessed in more detail above in relation to the SACs. Following the implementation of EIAR / NIS mitigation measures (refer above), the measures contained in the Surface Water Management Plan and CEMP, in combination with the use of best construction practices and compliance with relevant requirements, I am satisfied that there would be no resultant downstream adverse impacts on the SCI bird species or their attributes and targets, or on the Conservation Objectives for the Ballyallia Lough, River Shannon & Fergus Estuaries or Corofin Wetlands SPAs.

Raptors: The development site either lies outside the core foraging range for Merlin and Hen harrier which are SCI species for the Slieve Aughty Mountains SPA, and/or it does not contain suitable roosting, foraging of grazing habitat. There would be no direct effects on any of these species, other than some minor disturbance during the construction works. The proposed structures would not give rise to collision risk, displacement or barrier to movement, and the undergrounding of the existing and proposed transmission cables would further reduce the risk of collision and thus fatalities.

Suggested conditions:

The EIA assessment contained in Section 7.0 of this report recommended several conditions including additional measures to protect habitats and species (buffers, pre-construction surveys & early replacement planting).

Potential in-combination effects:

Potential indirect in-combination effects relate to damage to qualifying habitats and species, and support habitats because of a similar range of threats as outlined above, having regard to the various plans or projects in wider area (Incl. renewable energy, urban projects, agriculture, domestic discharges & recreation) in the absence of mitigation.

Conclusion:

I concur with the conclusions reached in the consolidated NIS that the proposed data centre development (incl. cables) will have no significant adverse effects (direct, indirect or in-combination) on the Conservation Objectives, Qualifying Interests or Special Conservation Interests for the aforementioned European sites (SPAs & SACs) or for any other European Site.

9.5 Appropriate Assessment conclusion:

I consider it reasonable to conclude on the basis of the information on the file, which I consider adequate in order to carry out a Stage 2 Appropriate Assessment, that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the following European sites, any other European site, in view of the site's Conservation Objectives.

- Old Domestic Building (Keevagh), SAC - Site code: 002010
- Dromore Woods & Loughs SAC - Site code: 000032
- Old Domestic Buildings (Rylane) SAC - Site code: 002314
- Lower River Shannon SAC - Site code: 002165
- Ballyallia Lough SPA - Site code: 004041
- River Shannon & Fergus Estuaries SPA - Site Code: 004077
- Slieve Aughty Mountains SPA - Site code: 004168
- Corofin Wetlands SPA - Site code: 004220

9.0 Recommendation

Arising from my assessment of this appeal case I recommend that planning permission should be granted for the proposed development for the reasons and considerations set down below, and subject to the attached conditions.

10.0 Reasons and Considerations

Having regard to:

a. The National Planning Framework - Ireland 2040,
b. The Climate Action Plan 2023,
c. The Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy, July 2022,
d. The Regional Spatial & Economic Strategy for the Southern Region, 2020,
e. The policies of the planning authority as set out in the Clare County Development Plan, 2023 to 2029,
f. The distance to dwellings or other sensitive receptors,
g. The submissions made in connection with the application and appeal.
h. The likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the likely significant effects of the proposed development on European Sites,
i. The report and recommendation of the Inspector.

Proper planning and sustainable development:

It is considered that subject to compliance with the conditions set out below the proposed development would accord with European, national, regional and local planning and related policy, it would not have an unacceptable impact on the landscape or ecology, it would not seriously injure the visual or residential amenities of the area or of property in the vicinity, and it would be acceptable in terms of traffic safety and convenience. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

Appropriate Assessment:

The Board agreed with the screening assessment and conclusion carried out in the Inspector's report that the following European sites are the only sites for which there is a possibility of significant effects and must therefore be subject to Appropriate Assessment: -

- Old Domestic Building (Keevagh), SAC - Site code: 002010
- Dromore Woods & Loughs SAC - Site code: 000032
- Old Domestic Buildings (Rylane) SAC - Site code: 002314
- Lower River Shannon SAC - Site code: 002165

- Ballyallia Lough SPA - Site code: 004041
- River Shannon & Fergus Estuaries SPA - Site Code: 004077
- Slieve Aughty Mountains SPA - Site code: 004168
- Corofin Wetlands SPA - Site code: 004220

The Board considered the consolidated Natura Impact Statement and all other relevant submissions and carried out an appropriate assessment of the implications of the proposed development for European Sites in view of the site's Conservation Objectives for these SACs and SPAs. The Board considered that the information before it was sufficient to undertake a complete assessment of all aspects of the proposed development in relation to the site's conservation objectives using the best available scientific knowledge in the field.

In completing the assessment, the Board considered, in particular, the following:

(i) Site Specific Conservation Objectives for these European Sites,

(ii) Current conservation status, threats and pressures on the qualifying interest / special conservation interest features,

(iii) likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects,

(iv) view of the Department of Arts, Heritage and the Gaeltacht,

(v) mitigation measures which are included as part of the current proposal,

In completing the AA, the Board accepted and adopted the Appropriate Assessment carried out in the Inspector's report in respect of the implications of the proposed development on the integrity of the aforementioned European Sites, having regard to the site's Conservation Objectives.

In overall conclusion, the Board was satisfied that the proposed development would not adversely affect the integrity of European sites in view of the site's Conservation Objectives and there is no reasonable scientific doubt as to the absence of such effects.

Environmental Impact Assessment:

The Board completed an environmental impact assessment of the proposed development taking account of:

(a) the nature, scale, location and extent of the proposed development on a site,

(b) the Environmental Impact Assessment Report (EIAR), the consolidated EIAR report, and associated documentation submitted in support of the application,

(c) the submissions received from the prescribed bodies, planning authority and third parties.

(d) the Inspector's report.

The Board considered that the Environmental Impact Assessment Report (EIAR) and consolidated EIAR report, supported by the documentation submitted by the applicant, adequately considers alternatives to the proposed development and identifies and describes adequately the direct, indirect, secondary and cumulative effects of the proposed development on the environment. The Board agreed with the examination, set out in the Inspector's report, of the information contained in the EIAR report and consolidated EIAR report and associated documentation submitted by the applicant and submissions made in the course of the application.

The Board considered that the main significant direct and indirect effects of the proposed development on the environment are, and would be mitigated, as follows:

- The ***risk of pollution of ground and surface waters, or changes to ground water flow paths during the construction phase*** through a lack of control of surface water during excavation and construction, the mobilisation of sediments and other materials during excavation and construction. The construction of the proposed project could also potentially impact negatively on ground and surface waters by way of contamination through accidents and spillages, and disrupting flow paths. These impacts would be mitigated by the implementation of the Drainage Management Plan, agreement of measures within a Construction and Environment Management Plan, and the implementation of mitigation measures related to: - design and avoidance; accidental spills and contamination; sediment and erosion control; and drainage management.
- ***Biodiversity impacts*** arising from habitat loss and fragmentation, changes to the vegetation on the site, loss of foraging habitat and disturbance to otters, badgers, birds and bats, connections to foraging, aquatic and water dependent habitats and general disturbance during the construction and operational phases. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan, the measures contained in the Landscape and Biodiversity Management Plan, and the implementation of mitigation measures which include: - Pre-construction Bird, Bat & Mammal Surveys; Water Quality protection measures (as above); an Invasive Species Management Plan; and the appointment of a Project Ecologist.

- The proposed project gives rise to an increase in ***vehicle movements and resulting traffic impacts*** during the construction phase and significant impacts on the road network can be avoided by the proposed works along the road network. These impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - pre-construction road condition surveys; deliveries; and implementation of a Construction Traffic Management Plan and Construction and Demolition Waste Management Plan.
- ***Air pollution and noise during the construction and operational phase*** which would impact negatively on sensitive ecological receptors and populations in the vicinity of the site. These impacts are substantially avoided by the limited number of sensitive receptors in close proximity to the proposed development. Any remaining impacts would be mitigated by the agreement of measures within a Construction and Environment Management Plan and the implementation of mitigation measures related to: - air quality, dust and noise.
- The impacts on ***residential amenity*** during the construction and operational phases would be avoided by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the consolidated EIAR report which include specific provisions relating to the control and management of dust, noise, water quality and traffic movement.
- The impacts on ***cultural heritage*** during the construction and operational phases would be avoided by the implementation of the measures set out in the Environmental Impact Assessment Report (EIAR) and the consolidated EIAR report, and by compliance with the recommended conditions in relation to archaeological assessment of the site.
- The proposed development would have ***potentially positive environmental impacts*** during the operational phase arising from the undergrounding of the existing overhead transmission cables, and from the future switch to the use of sustainable / renewable gas supplies in the energy centre for energy generation, with a corresponding reduction in carbon emissions.

The Board completed an environmental impact assessment in relation to the proposed development and concluded that, subject to the implementation of the mitigation measures proposed, and subject to compliance with the conditions set out below, the effects of the proposed development on the environment, by itself and in combination with other plans and projects in the vicinity, would be acceptable. In doing so, the Board adopted the report and conclusions of the Inspector.

11.0 Conditions

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application, including the further information received by the planning authority on the 25th day of February 2022 and the Clarification of Further Information received in the 10th day of June 2022, and the documents received by the Board on 30th day of August 2022, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.
   Reason: In the interest of clarity.

2. This permission shall be for a period of 10 years from the date of the order.
   Reason: In the interest of clarity and orderly development.

3. The mitigation measures identified in the EIAR, NIS and other plans and particulars submitted with the planning application and appeal, shall be implemented in full by the developer, except as may otherwise be required in order to comply with the conditions of this permission.
   Reason: In the interest of clarity and protection of the environment during the construction and operational phases of the proposed development.

4. The developer shall comply with the following general requirements:
   a. The developer shall submit full details in relation to all external finishes of all buildings, to the planning authority for written agreement prior to the commencement of development.
   b. No additional artificial lighting shall be installed or operated on site unless authorised by a prior grant of planning permission.
   c. Operational noise levels shall not exceed 55dB(A) L_{eq} 1hr at the nearest noise sensitive locations between 0800 and 2000hours

(Monday to Friday inclusive) and shall not exceed 45dB(A) L_{eq} 1hr at any other time.

d. Each fencing panel shall be erected such that for a minimum of 300 millimetres of its length, its bottom edge is no less than 150 millimetres from ground level.
e. Cables within the site shall be located underground.
f. No additional signage or advertising shall be erected on the lands or buildings without a prior grant of planning permission.

Reason: In the interest of clarity, of visual and residential amenity, to allow wildlife to continue to have access to and through the site, and to minimise impacts on drainage patterns and surface water quality.

5. The developer shall comply with the following nature conservation requirements:
    a. A suitably qualified and experienced Project Ecologist shall be appointed to oversee the protection of biodiversity during the construction phase, and for a monitoring period of 5 years following completion of development.
    b. The Project Ecologist shall certify that the completed are compliant with the EIAR / NIS mitigation measures and the following conditions.
    c. No felling or vegetation removal shall take place during the period 1st March to 31st August.
    d. A pre-construction bat survey shall be carried out by a suitably qualified ecologist during the active bat season.
    e. Any destruction of bat roosting sites or relocation of bat species shall be carried out by a suitably qualified ecologist under a Derogation Licence granted by the Minister for Housing, Local Government and Heritage.
    f. A pre-construction otter survey shall be carried out by a suitably qualified ecologist.
    g. Any destruction or relocation of otter holts shall be carried out by a suitably qualified ecologist under a Derogation Licence granted by the Minister for Housing, Local Government and Heritage.

h. Mammal friendly fencing shall be installed during the construction and post construction phases.

Reason: In the interest of biodiversity and nature conservation.

6. The developer shall implement mitigation measures to lessen the potential for impacts on Badgers arising from the excavation and construction works: -
    a. A 30m cordon shall be installed around any badger sett entrances, which shall be screened and remain in place throughout the construction works,
    b. There shall be no artificial lighting of any badger sett entrances during the construction and operational phases,
    c. During the breeding season, no works shall take place within 50m of the sett for general construction and 150m for noisy and vibratory activities, and
    d. The built-in construction design shall allow for escape from trenches.

    Reason: To ensure appropriate monitoring of the impact of the development on the badger species of the area.

7. The landscaping proposals shall be carried out within the first planting season following commencement of construction of the proposed development during the first phase of the works. Only native species of trees and hedgerow shall be planted. All existing roadside hedgerows (except at access point openings) and hedgerows around the outer perimeter of the site shall be retained. The landscaping and screening shall be maintained at regular intervals. Any trees or shrubs planted in accordance with this condition which are removed, die, become seriously damaged or diseased within two years of planting shall be replaced by trees or shrubs of similar size and species to those original required to be planted. The landscaped berms located in the southern section of the site, shall be constructed during the first phase of the works.

    Reason: To assist in screening the proposed development from view and to blend it into its surroundings in the interest of visual amenity, in the interest of biodiversity and to protect wildlife.

8. The developer shall comply with the following transportation requirements:
    a. Provide a final Traffic Management Plan for the construction phase of the development to the planning authority for written agreement prior to the commencement of development.
    b. This Plan shall ensure that there is not a back of construction traffic from the M18 / Junction 13 and shall include for staggered deliveries to the site.
    c. Construction of the proposed right hand turning lane at the main access shall be commenced concurrently with the commencement of the site works and be completed within 6 months of the commencement of development on the site. The site access and right-hand turning lane including the proposed pavement overlay shall be undertaken as indicated in the details submitted with the application and detailed design including drainage arrangements along the R352 Tulla Road. Works shall be carried out by the developer at their own expense.
    d. Submit design details in relation to the proposed pedestrian crossing points on the R352 Tulla Road to the planning authority for written agreement prior to the commencement of development. The crossing points shall be fully in situ prior to occupation of the development and the works shall be carried out by the developer at their own expense.
    e. Submit design details in relation to the proposed shared use footpath / cycle track to the planning authority for written agreement prior to the commencement of development. The shared use footpath / cycle track shall be located on both sides of the R352 Tulla Road along the extent of the development boundary to a point just east of the L8168 side road junction, and the works shall be carried out by the developer at their own expense.
    f. Submit details of the exact location of the bus stop to the planning authority for written agreement prior to the commencement of development, which should be construction prior to the operation of any part of the development.
    g. CCTV cameras shall be fixed and angled to face into the site and shall not be directed towards adjoining properties or the road.

Reason: In the interest of pedestrian, cyclist and traffic safety, infrastructure provision, and the proper planning and sustainable development of the area.

9. Water supply and drainage arrangements, including the attenuation and disposal of surface water, and flood risk management shall comply with the requirements of Irish Water and the planning authority for such works and services as appropriate.
   Reason: In the interest of public health and to ensure a proper standard of development.

10. The developer shall comply with the following additional water supply and drainage requirements:
    a. The storm water attenuation pond and primary network shall be installed in Phase 1 of the development.
    b. Drainage on to the R352 Tulla Road and the site access shall be by means of a separate drainage network and attenuation system that discharges directly to the Ballymacahill / Spancelhill Stream. This system shall be independent of the M18 Motorway Drainage network.
    c. The final size, volume and design of the proposed attenuation pond and associated infrastructure shall comply with section 2.2.5 of the Engineering Report received by the planning authority on the 25th day of February 2022 and the Clarification response received on the 10th day of June 2022.
    d. The developer shall install the storm water network, hydrocarbon interceptors and attenuation area as part as per the designer's requirements and the manufacturer's instructions, and a suitability qualified Engineer shall certify same. The certification shall be submitted to the planning authority for written agreement prior to the occupation of any part of the development.
    e. The developer shall submit details in relation to the maintenance requirements and schedules for the storm water network and attenuation area to the planning authority for written agreement prior to the occupation of any part of the development.

f. The proposed development shall provide 48-hour storage in respect of the adiabatic cooling waters.

Reason: In the interest of public health and to ensure a proper standard of development.

11. The construction of the development shall be managed in accordance with a Construction and Environmental Management Plan, which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. This plan shall provide details of intended construction practice for the development, including hours of working, noise management measures, traffic management, protection of wayleaves, an invasive species management plan, an asbestos management plan, and off-site disposal of construction /demolition waste.
Reason: In the interests of public safety and residential amenity.

12. Site development and building works shall be carried out only between the hours of 0800 to 1900 Mondays to Fridays inclusive, between 0800 to 1400 hours on Saturdays and not at all on Sundays and public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.
Reason: In order to safeguard the residential amenities of property in the vicinity.

13. The site development and construction works shall be carried out such a manner as to ensure that the adjoining roads are kept clear of debris, soil and other material and cleaning works shall be carried on the adjoining public roads by the developer and at the developer's expense on a daily basis.
Reason: To protect the residential amenities of property in the vicinity.

14. The developer shall comply with the following archaeological requirements:

(a) Pre-development archaeological testing shall be undertaken by a suitably qualified archaeologist, licensed under the National Monuments Acts 1930-2004. No sub-surface work shall be undertaken in the absence of the archaeologist without his/her written consent.

(b) A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works. A copy of the report shall be submitted to the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

(c) The planning authority and the Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs shall be notified in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development.

In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination.

Reason: In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.

15. The developer shall submit details in relation to the occupation, operation and management of the Vertical Farm, to the planning authority for written agreement prior to the commencement of development.

Reason: In the interest of orderly development.

16. Prior to commencement of development, the developer shall lodge with the planning authority a bond of an insurance company, a cash deposit, or other security to secure the provision and satisfactory completion of the

development, coupled with an agreement empowering the planning authority to apply such security or part thereof to the satisfactory completion of any part of the development.

Reason: To ensure the satisfactory completion of the development.

17. The developer shall pay a financial contribution of two million, one hundred and thirty seven thousand, and three hundred and twenty euro (E2,137,320.00) to the planning authority in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000. The contribution shall be paid prior to the commencement of development or in such phased payments as the planning authorities may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to the Board to determine the proper application of the terms of the Scheme.

Reason: It is a requirement of the Planning and Development Act 2000, as amended that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.

12. Professional Declaration

I confirm that this report represents my professional planning assessment, judgement and opinion on the matter assigned to me and that no person has influenced or sought to influence, directly or indirectly, the exercise of my professional judgement in an improper or inappropriate way.

Karla Mc Bride

Senior Planning Inspector

11th December 2023