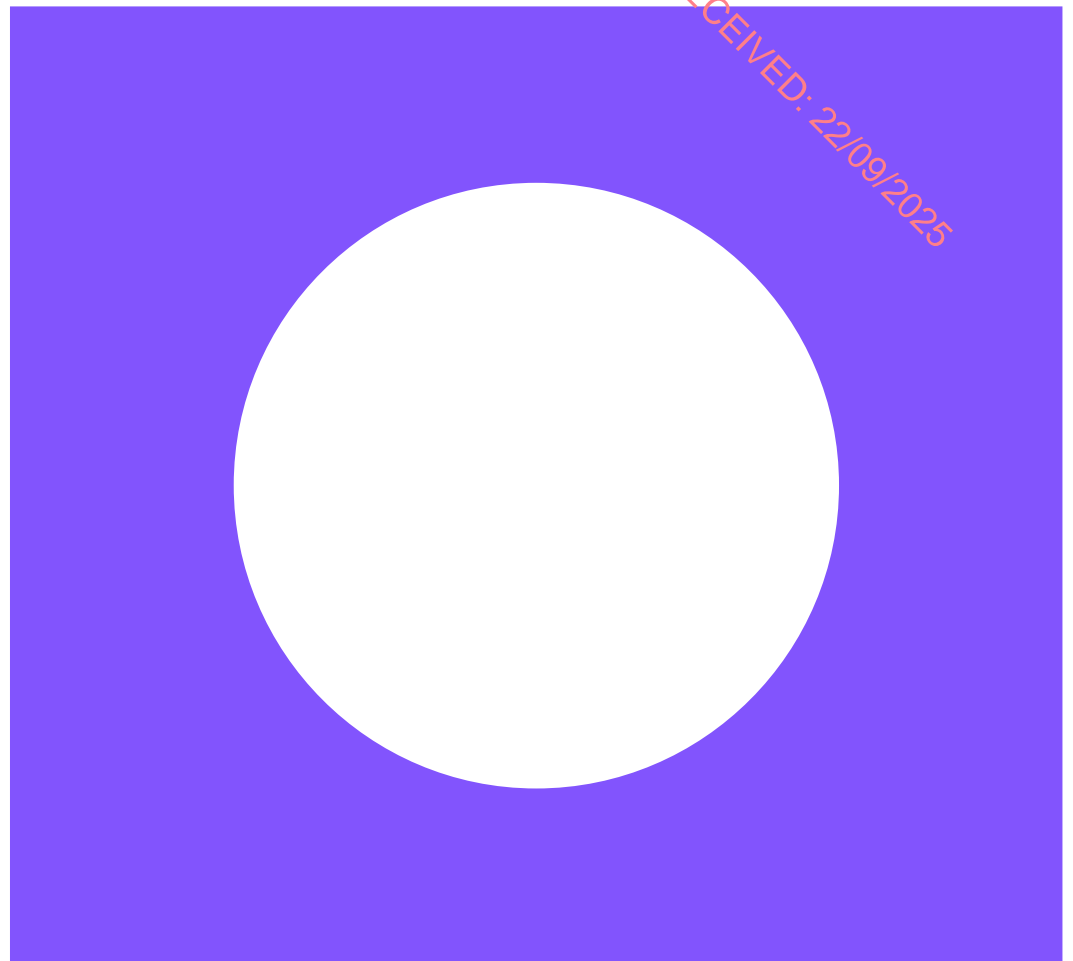




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Shelburne Energy Farm

Report for the Screening of Appropriate
Assessment and Natura Impact Statement

September 2025

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Shelburne Energy Farm

Report for the Screening of Appropriate Assessment and Natura Impact Statement

September 2025

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Contents

RECEIVED: 22/09/2025

1	Introduction	1
1.1	Project Overview	1
1.2	Location of the Proposed Project	1
1.3	Requirement for Appropriate Assessment	2
1.3.1	European Law	2
1.3.2	Irish Law	3
1.4	Definitions	4
1.4.1	European Sites and Features	4
1.5	Statement of Competence	4
1.6	Methodology	5
1.6.1	Desktop Study	6
1.6.2	Field Surveys	6
1.7	Consultation	11
1.8	Limitations	11
2	Screening for Appropriate Assessment	12
2.1	Process for Screening for Appropriate Assessment	12
2.2	Management of European Sites	12
2.3	Baseline Environment	13
2.3.1	Birds	13
2.3.2	Mammals and other fauna	13
2.3.3	Habitats	13
2.3.4	Aquatic Receptors (Owenduff and Tellarought Stream)	14
2.3.5	Invasive Species	14
2.4	Description of the Proposed Development	14
2.4.1	Solar PV Infrastructure Description	16
2.4.2	Battery Energy Storage System Description	22
2.4.3	Grid Connection Description	27
2.4.4	Construction Phase Activities	30
2.4.5	Operation and Maintenance	49
2.4.6	Decommissioning	50
2.4.7	Health and Safety Considerations	51
2.5	European Sites in the Zone of Influence	51
2.5.1	Introduction	51
2.5.2	Source Pathway Receptor and Impact Assessment	52
2.6	Plans and Projects that May Act in Combination	62
2.7	Summary of Potentially Significant Effects	63
2.8	Appropriate Assessment Screening Conclusion	66
3	Natura Impact Statement	67

RECEIVED: 22/09/2025

3.1	Description of the Development	67
3.2	Description of the Receiving Environment	67
3.2.1	European Sites	68
3.3	Impact Prediction	73
3.3.1	Construction Phase Impact Types	73
3.3.2	Effect Pathways During Construction	74
3.3.3	Effect Pathways during Operation	75
3.3.4	Decommissioning Phase Impacts	75
3.3.5	Summary	75
3.3.6	Plans and Projects which Might Act In-Combination	76
3.4	Potential for Adverse Effects on Site Integrity	78
3.4.1	Potential for Adverse Effects on Bannow Bay SAC	78
3.4.2	Potential for Adverse Effects on Bannow Bay SPA	82
3.5	Mitigation Measures	85
3.5.1	Mitigation to Control Surface Water Emissions	85
3.5.2	Implementation of Mitigation Measures	92
3.5.3	Degree of Confidence in the Likely Success of the Mitigation Measures	92
3.5.4	How any Mitigation Failure will be addressed	92
3.5.5	Conclusion	93

Appendices 94

A. In-Combination Effects 95

Tables

Table 1-1:	Field surveys conducted on the site and dates	7
Table 1-2:	Guidelines for Assessing Potential Bat Roosts in Structures	8
Table 1-3:	Terminology and colour-scheme used to categorise bat activity levels	10
Table 1-4:	Summary of Stakeholder Engagement	11
Table 2-1:	Approximate Dimensions of AIS structures	28
Table 2-2:	Project Construction Schedule	45
Table 2-3:	Construction Timeline	46
Table 2-4:	Source Pathway Receptor Assessment	54
Table 2-5:	Screening Matrix of the Project (Development)	63
Table 3-1:	Qualifying Interests for Bannow Bay SAC	68
Table 3-2:	Qualifying Interests for Bannow Bay SAC	70
Table 3-3:	Special Conservation Interests for Bannow Bay SPA	71
Table 3-4:	Potential for Impact in the Absence of Mitigation	75
Table 3-5:	Assessment of Potential for Adverse Effects on the site Integrity (in the absence of mitigation) of Bannow Bay SAC – Estuaries	79

Table 3-6: Assessment of Potential for Adverse Effects on the site Integrity (in the absence of mitigation) of Bannow Bay SAC – Mudflat and Sandflat	80
Table 3-7: Assessment of Potential for Adverse Effects on the site Integrity (in the absence of mitigation) of Bannow Bay SPA – Wetlands	83
Table 3-8: Projects which may act in combination	95

RECEIVED: 22/09/2025

Figures

Figure 1-1: Location of Proposed Project	2
Figure 2-1: Proposed Project Layout	16
Figure 2-2: Image of a typical container housing the battery storage modules	23
Figure 2-3: Image of a typical container housing the PCU	23
Figure 2-4: Typical 220kV GIS Substation Building	28
Figure 2-5: Standard Trefoil Arrangement Cross Section	40
Figure 2-6: Indicative Joint Bay	42
Figure 2-7: Pre-cast Joint Bay prior to Cable Installation	43
Figure 2-8: Typical Set-Up of HV Cable Pulling Procedure	43
Figure 2-9: Line Cable Interface Mast (LCIM) 44	
Figure 2-10: European Site Locations relative to the proposed Development	53

RECEIVED: 22/09/2025

1 Introduction

1.1 Project Overview

Mott MacDonald Ireland Limited (hereafter Mott MacDonald) have been commissioned by Gen7 Renewable Energy Limited (hereafter referred to as “the client”) to prepare an Appropriate Assessment Screening Report (AA) for the screening for AA and Natura Impact Statement (NIS) to accompany a planning application to Wexford County Council.

The Proposed Project comprises a photovoltaic (PV) solar energy farm which is split into three distinct solar array areas - A, B and C, and a co-located Battery Energy Storage System (BESS), collectively referred to as Shelburne Energy Farm, and together occupying a total area of approximately 121.5 hectares. A grid connection is required to connect Shelburne Energy Farm to the national electricity grid, with a co-located 220kV substation compound within the energy farm, measuring approximately 0.72 hectares, with an associated underground cable connection which will connect to an existing overhead transmission circuit.

1.2 Location of the Proposed Project

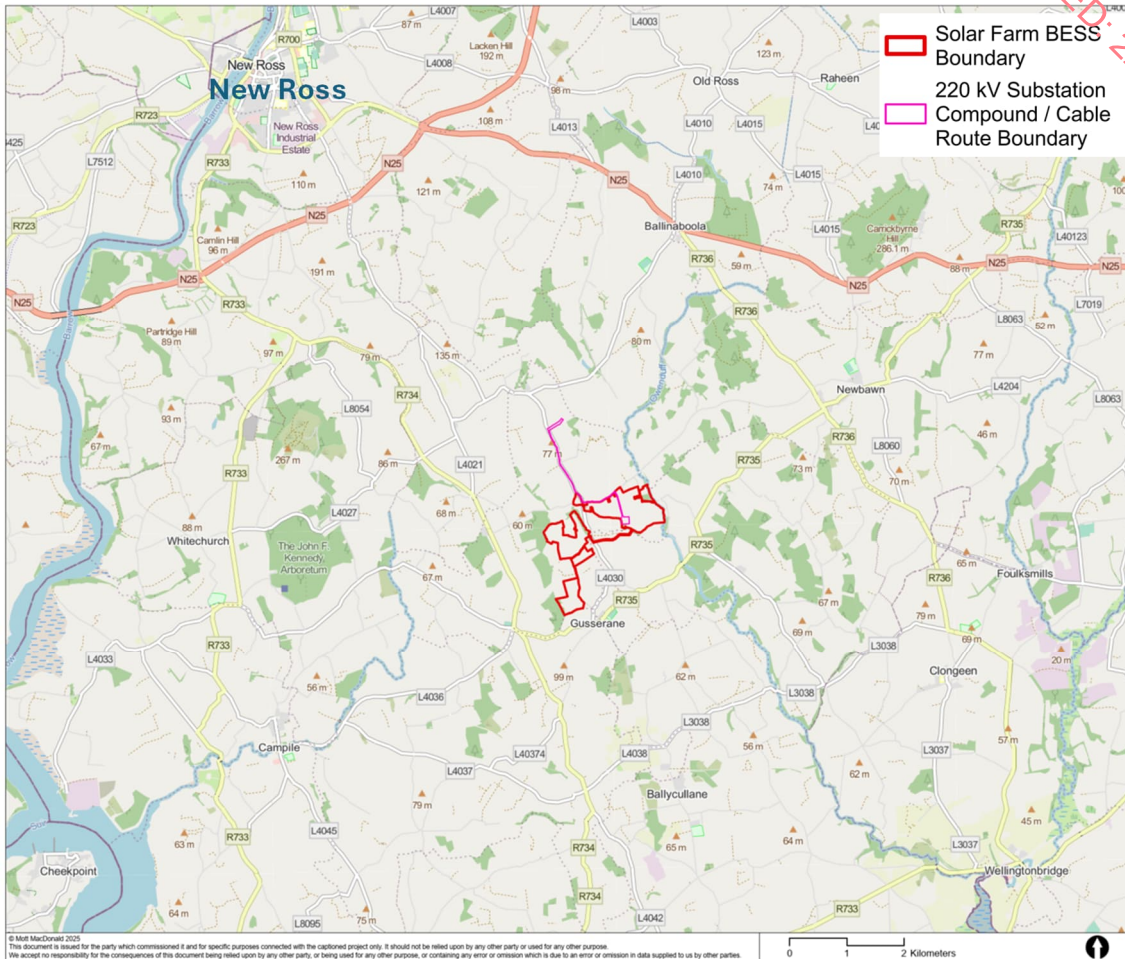
The Proposed Project is located in the townlands of Ballygarvan, Cloonagh and Nash, Gusserane, County Wexford, as illustrated in Figure 1.1. The local area in which the Proposed Project will be situated is characterised as predominantly rural agricultural lands with low density residential properties occurring throughout the locality.

The closest settlements include the town of New Ross located approximately 6.5km northwest, and the villages of Ballynaboola approximately 4.5km to the north, Newbawn 3.4km to the northeast and Ballycullane 3.5km to the south.

The Proposed Project is predominantly within agricultural lands with field boundaries delineated by mature hedgerows, with some limited areas of semi-natural woodland in the east of the project site. The solar energy farm is divided into three distinct array areas, occurring on either side of the local public road - L4030, while the L40232 bounds solar array Area A to the north. The Owenduff River (EPA code: 13O01) bounds areas of the Project site to the east of solar array Area A, while the Tellarought river (EPA code: 13T14) is crossed by the inter-array cables connecting solar array Area B and C to solar array Area A and onwards to the future 220kV substation

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Figure 1-1: Location of Proposed Project



Source: Mott MacDonald Ireland Limited

1.3 Requirement for Appropriate Assessment

1.3.1 European Law

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora ('the Habitats Directive') is European Community legislation aimed at nature conservation including the protection of European sites designated as Special Areas of Conservation under the Habitats Directive or as Special Protection Areas under the Birds Directive (79/409/ECC as codified by Directive 2009/147/EC).

The Habitats Directive requires that where a plan or project is likely to have a significant effect on a European site (s), (and where the plan or project is not directly connected with or necessary to the nature conservation management of the European site), the plan or project will be subject to 'Appropriate Assessment' (AA) to identify any implications for the European site(s) in view of the site's Conservation Objectives. Specifically, Article 6(3) of the Habitats Directive states:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the

site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Case law of the Court of Justice of the European Union (CJEU) has determined that AA is required, if likely significant effects cannot be excluded on the basis of objective information. Case law has also clarified that measures intended to avoid or reduce harmful effects on European sites, must not be considered when determining whether it is necessary to carry out an AA.

1.3.2 Irish Law

In the context of the Proposed Project (Development), the Habitats Directive is transposed into Irish law by Part XAB of the Planning and Development Act 2000 (as amended) ('the Planning Acts'), and the Planning and Development Regulations 2000 as amended ('the Planning Regulations').

Under Section 177U (1) of the Planning Acts, a screening for AA of an application for consent for proposed development shall be carried out by the competent authority (in this application, Wexford County Council) to assess in view of best scientific knowledge, if the proposed development, individually or in combination with another plans or projects, is likely to have a significant effect(s) on any European sites.

Under Section 177U (4) of the Planning Acts, the competent authority shall determine that an AA of a proposed development is required if it *cannot be excluded* [emphasis added], on the basis of objective information, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a European site(s).

AA is the process provided for under Article 6 (3) of the Habitats Directive to determine whether a project or plan could 'adversely affect the integrity' of any European sites, either alone or in combination with other plans or projects, in light of the conservation objectives of the European sites in question.

Under Section 177V (1), An Appropriate Assessment shall include a determination by the competent authority under Article 6.3 of the Habitats Directive as to whether or not a draft Land use plan or proposed development would adversely affect the integrity of a European site

Under Section 177V (2), the competent authority shall, in carrying out an Appropriate Assessment under subsection (1), "take into account each of the following matters:

- a. the Natura Impact Report or Natura Impact Statement, as appropriate;
- b. any supplemental information furnished in relation to any such report or statement;
- c. if appropriate, any additional information sought by the authority and furnished by the applicant in relation to a Natura Impact Statement;
- d. any additional information furnished to the competent authority at its request in relation to a Natura Impact Report;
- e. any information or advice obtained by the competent authority;
- f. if appropriate, any written submissions or observations made to the competent authority in relation to the application for consent for proposed development;
- g. any other relevant information."

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1.4 Definitions

1.4.1 European Sites and Features

A network of European sites of conservation importance has been identified by each Member State, hosting habitats and/or species identified in the Habitats and Bird Directives as needing to be either maintained at or returned to 'favourable conservation status'.

The sites of conservation importance known as European sites comprise the Natura 2000 network. European sites comprise areas designated as Special Areas of Conservation (SACs) and/or Special Protection Areas (SPAs) in Ireland. The process of designating cSACs as SACs is ongoing in Ireland. Candidate sites (In Ireland, comprising cSACs) have the same legal protection as those whose designation is complete.

The designation features of SACs are referred to as Qualifying Interests (QIs), and these comprise both species (excluding birds), and habitats.

The designation features of SPAs are referred to as Special Conservation Interests (SCIs), and these comprise bird species, as well as wetland bird habitats.

The designation features of European sites are identified in the Statutory Instruments for European sites where such sites have completed the designation process. In all cases, designation features are also identified in Conservation Objectives published by the National Park and Wildlife Service (NPWS). Any Conservation Objectives referred to in this Natura Impact Statement (NIS) are referenced to identify the date of publication and version number.

1.5 Statement of Competence

Authors

- **Dr Erin Johnston** BSc (Hons), MSc, PhD, MCIEEM (Principal Ecologist, Mott MacDonald). Erin is an Ecologist with more than ten years of post-graduate experience including three years in malacological (mollusc) research and nine years in Ecological consultancy. She has prepared Ecological Impact Assessments, and Appropriate Assessments Screening Reports, and Natura Impact Statements for a variety of projects. Erin has experience carrying out field surveys for protected gastropods, along with vegetation, extended phase 1 habitat surveys, and targeted invasive species surveys. Other protected species surveys Erin has experience of include smooth newt, crayfish, badger, otter, marsh fritillary and bats.
- **Roger Macnaughton:** MSc, BSc (Hons), MCIEEM (Senior Associate Ecologist, Mott MacDonald). Roger is a qualified and experienced environmental consultant specialising in ecology. He has over twenty-three year's professional experience in the environmental consultancy sector and an additional seven years of primarily research-based experience in freshwater and marine ecology. He specialises in the delivery of Ecological Impact Assessment (EclA) and Appropriate Assessment (AA) for a broad range of projects potentially affecting; terrestrial, freshwater and marine ecology. His project related experience to date includes; two 400kV overhead lines, five 110kV overhead lines, overhead line up-rates, electricity substations, underground power cables, 35 terrestrial wind farms, two marine wind farms and five solar farms. Roger has extensive experience carrying out and co-ordinating walkover field surveys for protected species (birds, mammals, amphibians), along with Fossitt (2000) botanic/ habitat surveys, aquatic and fishery assessment, and targeted invasive species surveys.

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Surveyors

Walkover surveys, mammal, and bird surveys were conducted by Fintan Damer, Eoin Underwood, Jamie Quirke, and Roger Macnaughton. All are competent experts in ecology surveys.

- **Fintan Damer** BSc (Ecologist, Mott MacDonald). Fintan Damer is a qualified and experienced ecologist with over 4 years full time experience in ecological consultancy. He has thirty years of practical knowledge in undertaking ornithological field studies and surveys, including breeding bird surveys, winter wetland surveys and marine seabird surveys. Fintan has conducted numerous baseline ecological surveys including those for otter, badger, invasive species, freshwater ecology, terrestrial botanical surveys, and bat surveys. He has been involved in preparation of Ecological Impact Assessments and Appropriate Assessments Screening Reports as well as more focused biotic Environmental Reports
- **Jamie Quirke** BSc (Hons), MSc, (Ecologist, Mott MacDonald). Jamie is an ecologist with 2 years post-graduate professional experience as a consultant ecologist. Jamie has experience in assisting the preparation of draft Natura Impact Statements, Environmental Impact Assessments, Appropriate Assessments and Biodiversity Chapters. Jamie has experience in surveying marine, terrestrial and freshwater environments. Jamie has also carried out extensive bird surveys ranging from general breeding species to target species, such as hen harrier.

1.6 Methodology

This report has been prepared in accordance with European Commission and Irish departmental guidance on AA methodologies including:

- EC (2021) Assessment of Plans and Projects in Relation to Natura 2000 Sites – Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC Commission Notice C (2018) 7621
- DEHLG (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities (Revised 2010).
- Environmental Protection Agency (EPA) (2013) Integrated Biodiversity Impact Assessment –
- Streamlining AA, SEA and EIA Processes: Practitioners Manual. Environmental Protection Agency.
- European Commission (2018), Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC, Office for Official Publications of the European Communities, Luxembourg.
- European Commission (2000a), Communication from the Commission on the Precautionary Principle, Office for Official Publications of the European Communities, Luxembourg.
- European Commission (2013), Interpretation Manual of European Union Habitats. Version EUR 28.
- European Commission (2006), Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities.
- Department of the Environment, Heritage and Local Government (DoEHLG, 2010b), Department of Environment Heritage and Local Government Circular NPWS 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities

This report has similarly been prepared with regard to relevant rulings by the Court of Justice of the European Union (CJEU), and the Irish courts.

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1.6.1 Desktop Study

This assessment includes a desk-based review of available records of protected species and habitats including the following sources (last accessed August 2025):

- Backing Documents and Maps prepared in accordance with Article 17 of the Habitats Directive;
- European site documentation including Conservation Objectives, NPWS
- NPWS Site Synopses, Natura Standard Data Forms available from NPWS;
- Published NPWS reports on protected habitats and species including Irish Wildlife Manual reports, and
- Existing relevant mapping and databases e.g. waterbody status, species and habitat distribution etc. (sourced from the Environmental Protection Agency - <http://gis.epa.ie/>, the National Biodiversity Data Centre - <http://maps.biodiversityireland.ie> and the NPWS - <http://www.npws.ie/mapsanddata/>)

1.6.2 Field Surveys

Ecological field surveys were carried out by suitably experienced Mott MacDonald ecologists as set out in the Statement of Competence (Section 1.4). Ecology surveys undertaken are listed below.

1.6.2.1 Walkover Surveys

Habitat surveys were carried out within the site and wider landholding (minimum 50m buffer of site where accessible) in accordance with 'Best Practice Guidance for Habitat Survey and Mapping'¹. Habitats were classified to level three according to the scheme outlined in "A Guide to Habitats in Ireland"². Fit to European Annex 1 habitats was informed with reference to the EU Interpretation Manual for EU Habitats³ having regard to the Irish Vegetation Classification⁴ where relevant.

Further botanical surveys were carried out in habitats which had links to Annex 1 habitats as determined during preliminary habitat surveys.

The area was searched for evidence of invasive plant species listed in Part 1 of the Third Schedule of Statutory Instrument No. 477 of 2011, European Communities (Birds and Natural Habitats) Regulations 2011 as amended. Species protected under the Flora (protection) Order, 2022 (S.I. No. 235 of 2022) or listed under the Irish Red Data List of Irish Plants were also included within the search.

Surveys carried out mainly to inform the Biodiversity Impact Assessment but of relevance to AA in some cases is outlined in Table 1.1 below:

¹ Smith G., O'Donoghue, P., O'Hora, K., Delaney, E., (2011) Best Practice Guidance for Habitat Survey and Mapping'

² Fossit, J (2000) A Guide to Habitats in Ireland

³ European Commission, (2013) Interpretation Manual of European Union Habitats. EUR 28.Nature ENV B.3

⁴ <https://biodiversityireland.shinyapps.io/vegetation-classification/>

Table 1-1: Field surveys conducted on the site and dates

Survey Type	Date	Survey Area (refer to Figure 7.1)
Ecological walkover	<ul style="list-style-type: none"> 15 February 2023 10 March 2023 7 May 2024 08 May 2024 09 May 2024 29 May 2024 	All numbered fields including fields not numbered within planning boundary,
Bat night time walkovers	Survey 1: 12 June 2024 Survey 2: 13 June 2024 Survey 3: 13 June 2024 Survey 4: 13 June 2024	Four transects conducted across the site including arable farmland (Fields 14 west to 3) woodland / hedgerow (Field 17, 18, 19, 23, 25 and 27, 16, 28, 30, 32, 29 and 31) edge and riparian areas (Field 9, 14 and south of substation site)
Bat static surveys	D4: 30 May – 13 June 2024 D5: 29 May – 13 June 2024 D6: 30 May – 13 June 2024 D7: 29 May – 13 June 2024 D8: 29 May – 13 June 2024 D2: 26 May - 31 May 2025 D6: 26 May - 31 May 2025 D7: 26 May - 31 May 2025 D8: 26 May - 31 May 2025	Field 17, e Field 14 (south substation site) Field 16 Field 26 Filed 5 Field 29 Field 10 Field 31 Field 11
Bat roost emergence/activity survey	<ul style="list-style-type: none"> 16 and 17 July 2024 24 July 2025 	Field 3 and 4. An emergent roost at a derelict farmyard with dilapidated buildings, overgrown with scrub (. Field 9. An activity survey at a revegetating field with scrub, wet grassland, treeline and drainage ditch habitats, adjacent to the River Owenduff (centred at 52.326320, - 6.845439).
Breeding bird survey	<ul style="list-style-type: none"> April 2025: 02/04/2025, 03/04/2025 May 2025: 14 May 2025, 15 May 2025 June 2025: 03 June 2025, 04 June 2025 	Surveys conducted throughout field, riparian and woodland edges of the site
Wintering bird survey	<ul style="list-style-type: none"> February and March 2023 January, February, and March 2025. 	Surveys conducted throughout field, riparian and woodland edges of the site
Woodcock survey	<ul style="list-style-type: none"> 7-8 May 2024 	<ul style="list-style-type: none"> Location 1: Woodland edge west Field 17C Location 2: Woodland edge west Fields 29 and 31.
Marsh fritillary survey	<ul style="list-style-type: none"> 16 August 2024 	Fields 15c, 15d, 15E, 17 and 27b.
Detailed botanical surveys	<ul style="list-style-type: none"> 28-30 May 2024 17-18 July 2024 16 August 2024 	Field 15, 17c, 17d, 17e, 18, 27b, 29, Field 27B, woodland east Field 16
Aquatic Survey	<ul style="list-style-type: none"> 03 May 2025 	Two locations on Owenduff River. One upstream (ITM 678761, 620033) and one downstream (678960, 619791) of Kilbrawey Bridge.

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Survey Type	Date	Survey Area (refer to Figure 7.1)
		One location on Tellarought stream (ITM 645801, 5798919)

1.6.2.2 Otter Surveys

The survey for evidence of otter was carried out during the walkover surveys in particular where water courses were crossed or encountered along the proposed route. These surveys followed Monitoring the Otter *Lutra lutra*⁵. The extent of survey area was defined with regard to ‘Guidelines for the Treatment of Otters during the Construction of National Road Schemes’⁶.

1.6.2.3 Bat Surveys

A daytime bat survey of the road culvert and trees was carried out in accordance with Collins, (2023)⁷. The visual assessment was carried out in line with Bat Tree Habitat Key (Andrews, H et al., 2013) to determine potential roost features. Trees which might be affected by the works were examined for potential roost features.

The suitability of habitat features for bats, within the survey area, were assessed in accordance with Collins (2023) as described in Table 1.2 below.

Table 1-2: Guidelines for Assessing Potential Bat Roosts in Structures

Suitability	Description/Roosting Habitats	Commuting and Foraging Habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevice/suitable shelter at all ground/underground levels)	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight lines or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious features on site likely to be used as flight paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).	Habitat that could be used by small numbers of bats as flightpaths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by another habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water.
High	A structure with one or more potential roost sites that could be used that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection,	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight paths such as river

⁵ Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.

⁶ NRA (2006) Guidelines for the Treatment of Otters during the Construction of National Road Schemes

⁷ Bat Surveys for Professional Ecologists: Good Practice Guidelines” (4th edn) (Collins, 2023).

conditions, and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses, and grazed parkland. Site is close to and connected to known roosts.

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Source: Collins 2023

Trees and buildings / structures were assessed as having a Moderate or High suitability for bats (structures) and potential tree roost features (PRF-I or PRF-M) were examined further for evidence of bat activity using an endoscope. **Bat Activity Surveys**

An array of night-time bat surveys were completed in 2023, 2024 and 2025 by two experienced surveyors. The methodology for each of these bat surveys is presented below.

Emergence Bat Surveys

Emergence surveys started 15 minutes prior to sunset and were undertaken for a minimum of 2 hours of surveying. Surveys were completed during mild and dry weather conditions. Handheld bat detectors, Anabat Walkabout Full Spectrum bat detectors, were used by both survey

Preparation for dusk survey started approximately 60 minutes prior to sunset and the following actions were undertaken:

- - Re-inspection of building to be surveyed to determine surveyor and filming locations (external and internal (where possible) inspections).
- - Internal inspection of building (applicable only to derelict structures and agricultural buildings) to document any visible bats or audible noises (bats are more audible prior to dusk activity).
- - Positioning of filming equipment and surveyors.
- - Completion of dusk survey.
- - Post surveys, a repeat internal inspection of the surveyed building was undertaken (only applicable to derelict structures and agricultural buildings) to document any visible bats within the structure.

Walking Transects

Walking transects involved surveyors walking accessible sections of the Proposed Project site (i.e. where landowner permission was provided) and adjacent local roads using Anabat Walkabout Full Spectrum bat detectors.

Walking transect surveys were completed from 20 minutes after sunset with the surveyors following transects within the Proposed Project site.

All walking transects were completed during weather conditions suitable for bat activity and walking transects tended to be at least 90 minutes long and varied in length depending on accessibility.

Static Detector Deployments

Four Anabat Express static detectors (Titley Scientific Inc.) fitted with omni-directional microphones were deployed at various locations across the Site between May and June in 2024 (5 detectors) and 2025 (4 detectors) to provide information on baseline bat activity on the site. These were set out on site for 6 nights (2024) and 15 nights (2025)

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Average night length was 7.5 hours during the sampling period, so this gives a total survey effort of 180 sampling hours. We consider this to provide a good representation of bat activity during the peak period of bat activity (typically between May and September).

Weather conditions were relatively warm and calm during the survey period, with air temperatures of between 12 and 20 °C, no rain and light winds. This provides a sample of bat activity in ideal weather conditions.

Sound Analysis

Sonograms from automated bat detectors were obtained in the ‘zero-crossing’ format and viewed using Anabat Insight software (Titley Scientific). Species were identified with reference to *British Bat Calls: A Guide to Species Identification* (Russ 2012), based primarily on frequency and call shape. Filters were initially used to provide an indicative classification, and then all sonograms were verified visually by the author. An automated bat classifier was not used.

Calculation and comparison of bat activity indices

At present there is no standardised system to categorise bat activity as low, moderate or high, because activity levels vary depending on the species involved and the surrounding landscape. In some parts of the British Isles the Ecobat tool (managed by the Mammal Society, Lintott et al. 2018) can be used to benchmark activity levels based on other data collected in the region, but at the time of writing the tool is offline for maintenance purposes.

Therefore, for the purposes of this report we use a bespoke system to discuss and compare levels of bat activity at the Site, as outlined in Table 1.3.

Table 1-3: Terminology and colour-scheme used to categorise bat activity levels

Category	Number of bat passes
Negligible	≤9
Low	10 - 49
Moderate	50 - 99
High	≥100

For ease of comparison, bat activity levels are classified into four categories - negligible, low, moderate, high - based on the total number of bat passes recorded per night.

For the avoidance of doubt, the number of bat passes recorded on a static detector does not accurately represent the number of bats present at a site. 100 bat passes may represent single passes from 100 different bats, but it may also represent a single bat that flew back and forth past the detector 100 times. In this context, bat activity data should be considered a proxy for the suitability of a habitat for bats, rather than an accurate count of the number of bats present in an area.

Potential Bat Roosts Activity Surveys

Potential bat roosts identified were subject to dusk surveys during summer 16th and 17th July 2024 and July 24th 2025 at two locations; an emergent roost and activity survey at a derelict farmyard with dilapidated buildings, overgrown with scrub. Equipment used include Anabat detectors and a night vision infrared camera.

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1.6.2.4 Wintering Bird Surveys

Wintering bird surveys of the entire site and surroundings were carried out in February and March 2023, and in January, February and March 2025. The surveys included counts of all waterfowl species and passerines on the site and areas visible from public roads surrounding the site. The focus of surveys included Special Conservation Interest Species (birds) of Special Protection Areas in the wider region including Bannow Bay SPA which is linked hydrologically. The surveys were conducted by an experienced ornithologist.

1.7 Consultation

Pre-application consultations were carried out with prescribed bodies. Key queries of relevance to this report are outlined in Table 1.2.

Table 1-4: Summary of Stakeholder Engagement

Consultee	Nature of Engagement	Key Responses/Comments
Development Applications Unit (DAU) – which includes NPWS	A consultation letter was sent via email on 10 June 2025	No response received to date (September 2025) in relation to Biodiversity/ Appropriate Assessment.
Inland Fisheries Ireland (IFI)	providing an overview of the Proposed Project	No response received to date (September 2025).

1.8 Limitations

No significant limitations occurred in relation to this report. Sufficient information was available via the desktop study and field surveys carried out.

2 Screening for Appropriate Assessment

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2.1 Process for Screening for Appropriate Assessment

The purpose of this screening stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in-combination with the other plans or projects, could have likely significant effects on a European site in view of the site's conservation objectives.

There is no necessity to establish such an effect; it is merely necessary for the competent authority to determine that there may be such an effect. The need to apply the precautionary principle in making any key decisions in relation to the tests of Appropriate Assessment (AA) has been confirmed by the case law of the Court of Justice of the European Union (CJEU). Plans or projects that are not likely to have a significant effect on a European site may be excluded. The threshold at this stage is a very low one and operates as a trigger in order to determine whether a Stage Two AA must be undertaken by the competent authority on the implications of the proposed development for the conservation objectives of a European site. Therefore, where significant effects are likely, uncertain or unknown at screening stage, a second stage AA will be required.

The European Commission Guidance 'Assessment of plans and projects significantly affecting Natura 2000 sites; Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC' (2021) prescribes a 4-step process in Screening for Appropriate Assessment as follows:

- Determine whether the project or plan is directly connected with or necessary to the management of the site.
- Describe the project or plan and describe and characterise other projects or plans that in combination have the potential for having significant effects on the Natura 2000 site.
- Identify the potential effects on the Natura 2000 site.
- Assess the significance of any effects on the Natura 2000 site.
- This report has been structured to reflect the 4-step screening process set out in the European Guidelines.

2.2 Management of European Sites

The Proposed Project (Development) is not directly connected with or necessary to the 'management' of European sites within the Natura 2000 Network having regard to Article 6 of the Habitats Directive. As such it is appropriate that the Proposed Development is subjected to screening for AA.

This screening assessment investigates, in view of best scientific knowledge, whether the Proposed Development, individually or in combination with other plans and projects, would be likely to have a significant effect on European sites. This report considers the likelihood of significant effects on European sites from the construction, operation, and decommissioning of the Proposed Development.

A summary of the Proposed Project has been described in Section 1.1.

The location of the Proposed Development in relation to European sites is presented in Figure 2.10.

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2.3 Baseline Environment

The key ecology baseline as relevant to Appropriate Assessment is summarised as follows:

2.3.1 Birds

No Special Conservation Interest (SCI) bird species of European sites in the region, including Bannow Bay SPA (the only SPA screened in for AA), were recorded during all site visits. The site is not an important bird area (as an ex situ foraging, nesting/roosting site or otherwise) based on desk information including Birdwatch Ireland IWebs data⁸ and Biodiversity Ireland data⁹. The site is unsuitable as a wintering hen harrier roost¹⁰.

No SCI bird species of European sites breed on the site. A number of non SCI species of conservation importance are discussed in the EIAR but are not relevant to AA screening and Appropriate Assessment. A number of non-SCI species of conservation importance are considered in the EIAR. However, this AA Screening Report and NIS relates only an assessment for the purposes of Article 6(3) of the Habitats Directive.

The Bannow Bay SPA is hydrologically linked approximately 8.1km downstream of the proposed development.

2.3.2 Mammals and other fauna

Possible Marsh Fritillary habitat in the west of the site has been avoided. Dedicated surveys here in 2024 noted the foodplant (Devils bit scabious) but no butterfly larvae.

Lesser Horseshoe bat do not occur in the area¹¹ and none were recorded in bat surveys conducted throughout the site in 2024 and 2025.

The Proposed Development is not located in a Freshwater Pearl mussel (*Margaritifera margaritifera*) catchment area¹².

While no otter (*Lutra lutra*) holts were recorded the Owenduff river is an important local habitat for otter. No instream works or disturbance to riparian habitats are proposed, and otter will not be affected by the proposed development.

2.3.3 Habitats

No qualifying interest (QI) habitats of Bannow Bay SAC, which is the only European site SAC possibly with the Zone of Influence (Zoi) of the Proposed Development, being hydrologically connected through rivers crossing the site. No remote QI of Bannow Bay SAC occur on the site as these are all marine intertidal habitats. The site habitats are terrestrial and no QI occur being located well upstream and well above maximum high tide levels for maintenance of intertidal marine habitats.

Potential non designated Annex habitat identified on the site including the following

- Watercourses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation (3260)

⁸ [I-WeBS Coverage](#)

⁹ [Maps - Biodiversity Maps](#)

¹⁰ : Barry Gerard O'Donoghue (2021): Hen Harrier *Circus cyaneus* ecology and conservation during the non-breeding season in Ireland, Bird Study, DOI: 10.1080/00063657.2021.1874871

¹¹ https://www.npws.ie/sites/default/files/general/Lesser%20horseshoe%20bat%20data%20NPWS_0.zip

¹² https://www.npws.ie/sites/default/files/general/Margaritifera_sensitive_areas_2020_v10.zip

- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) (6410)

The habitats are avoided and suitable pollution controls including silt ponds and emergency fire pond incorporated into the design and operational management.

The key consideration for the Proposed Development is hydrological connectivity and potential construction and operational indirect pollution impacts to Bannow Bay (SAC/SPA) features of interest (QI and SCI).

2.3.4 Aquatic Receptors (Owenduff and Tellarought Stream)

The aquatic surveys provided up to date information on the baseline ecological quality of the Owenduff and Tellarought River.

Owenduff River

Brown trout are present in the Owenduff River (2025 observation). Other fish species may include Salmon, Lamprey Species and Eels as habitat is suitable and water quality (Q3-4) is relatively good, albeit not currently of high quality. The May 2025 SSSRS assessment determined a score of >7.25 i.e. the river is “probably not at Risk”. The Q value (Toner et al 2005) assessment determined Q3-4 (Moderate) which is similar to the most recent EPA data (2022) at the closest monitoring point¹³ to the site. The River has floating river vegetation consistent with the Annex 1 habitat watercourses of plain to montane levels with the Ranunculus fluitantis and Callitriche-Batrachion vegetation (3260).

Tellarought River

This river is a tributary of the Owenduff river. It has similar water quality to the Owenduff and is likely an important salmonid (sp.) spawning stream. The SSSRS assessment determined a score of >7.25 i.e. the river is “probably not at Risk”. The Q value (Toner et al 2005) assessment determined Q3-4 (Moderate).

2.3.5 Invasive Species

No schedule III listed invasive species were recorded on the site in particular areas likely to be disturbed during construction of the proposed development. There is no likely risk of invasive species spread. There will be no direct disturbance to riparian and instream (river) habitats hence no risk of aquatic species that may possibly occur spreading off site to remote European sites.

2.4 Description of the Proposed Development

The layout of the Proposed Project is illustrated in Figure 2.1. Drawings referred to are provided in the accompanying Planning Application pack.

A summary of the Proposed Project, comprising the proposed solar farm and BESS the subject of the planning application to Wexford County Council as described in the statutory notices together with the associated substation and grid connection, is outlined below and described in further detail throughout this chapter.

A **solar energy farm** comprising;

¹³EPA Maps Station Code: RS13O010100

- Photovoltaic (PV) panels on ground mounted frames with a maximum height of 4m above ground level, and a minimum ground clearance of 1.0m above ground level, across three separate land parcels referred to as Array Areas A, B and C;
- 17 no. transformer centres each measuring approximately 6m L x 2.4m W x 3m H;
- Underground electrical cable ducting between solar array areas A, B and C, connecting to the future proposed 220kV substation, including 2no. wooden overhead electric poles, one placed on either side of the Tellarought River to facilitate its crossing;
- 4no. meteorological stations;
- All associated development including temporary construction compounds (one in each Array Area), 2m high perimeter fencing fitted with mammal passes and security gates, pole mounted CCTV system, and site drainage as appropriate,

A **Battery Energy Storage System** secured with 2.6m high palisade fencing and gates, and containing;

- 79no. of containerised battery storage modules (measuring approximately 6.82m length, 2.44m wide and 2.89m high);
- 17no. of containerised transformer and Power Conditioning Units (measuring approximately 6.82m length, 2.44m wide and 2.89m high) and ancillary equipment; and
- All associated development including lighting, site drainage, fire water tanks and pump house, acoustic barrier (8.5m high), internal access circulation area and landscaping, and all other works required to facilitate the proposed development.

A proposed **substation compound** measuring an area of approximately 0.72 hectare and will comprises the following:

- 1no. Air Insulated Switchgear (AIS) securely fenced compound, which includes 1no. control building (9m L x 7.5m W x 4m H), 1no. transformers, cable sealing ends and associated AIS equipment;
- 1no. Gas Insulated Switchgear (GIS) securely fenced compound, which includes a 220kV GIS building (49m L x 18.5m W x 17m H) housing GIS equipment;
- All associated development including lighting, substation compound site drainage, internal access circulation area, lightning rods, lighting, and all other works required to facilitate the proposed development.

A **grid cable connection** from the GIS building to the existing 220kV overhead line circuit to Great Island, comprising:

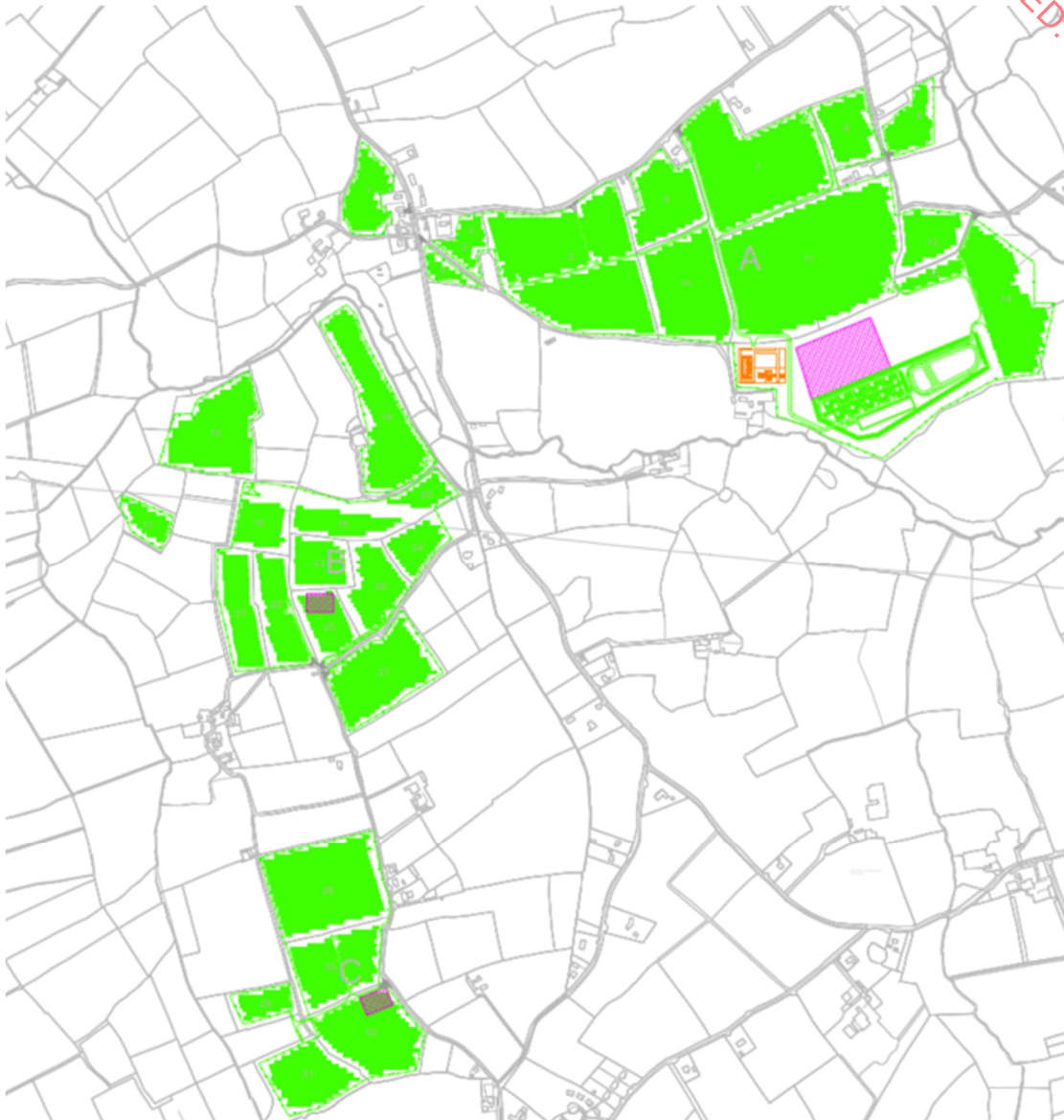
- 2no. 220kV underground cable circuits measuring approximately 2.9km in length;
- 2no. Line Cable Interface Masts (LCIMs) and stringing of new conductor to connect to the existing 220kV Great Island to Lodgewood overhead line circuit; and,
- all other works required to facilitate the proposed development.

The proposed 220kV substation compound and grid connection will be the subject of a separate planning application to An Coimisiún Pleanála under section 182A of the Planning and Development Act 2000 as amended.

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Figure 2-1: Proposed Project Layout



Source: Mott MacDonald Ireland Limited

2.4.1 Solar PV Infrastructure Description

Solar Arrays

The individual solar panels measure 1.3m wide by 2.58m long, and will be positioned in rows of three (overall length of PV rows varies based on their location) which will be erected on pre-erected galvanised steel mounting frames set at a height of 1m above ground level at the lowest point increasing to a maximum height above ground level of 4m, and tilted at 20 degrees to the horizontal. The solar panels will be positioned with appropriate gaps between modules implemented as to minimise the number of tables required and to reduce inter-row shading.

It is proposed that the solar panels will be fixed in place using earth screw/ pile driven steel framing. A cross section of a three-row solar panel is provided in the accompanying Planning Drawing Ref: 229101268-MMD-00-XX-DR-E-0301.

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Inverter Units and Transformers Centres

The inverter unit collects direct current (DC) and converts it into grid-compliant alternating current (AC), which is then fed to the transformer centres via underground electrical cabling (refer to Section 5.2.3). These inverter units are positioned on the support structures under the end of each row of solar panels. It is proposed to construct string inverters across the solar farm which will be mounted on brackets within the profile of the PV panel mounting structure. The dimensions for the proposed inverter units are approximately 1.15m L x 0.87m W x 0.36m H.

The transformers centres are integral to the solar farm, collecting the AC electricity from the invertors and increasing the voltage to 33kV before transferring this current to the proposed 220 kV substation. The units enclose the transformer, medium voltage switchboard and low voltage switchboard. The transformers are equipped with a weather station, ventilation vent and security light. The transformer units (including associated ancillary equipment) will be constructed as modular containerised units to facilitate efficient transport and installation. It is proposed to construct 17no. transformer and MV switchgear units across the solar farm, which will be modular containerised units to be placed on plinths suitably bunded. The dimensions for the proposed units are approximately 6.1m L x 2.9m W x 2.5m H.

A total of 17no. of transformers centres are proposed across the entire solar farm. The number of transformers in each solar array area is directly related to the AC electricity generated within each array area as such the number of transformers per solar array area is as follows;

- Area A: 9no.
- Area B: 5no.
- Area C: 3no.

The proposed transformers will be oil-filled transformers, which are the most commonly occurring type used in outdoor high voltage installations. Each transformer will include built-in leak containment to prevent leaks and protect the environment.

Array Cabling

An estimated total linear length of 9,700m of low voltage (LV) underground electrical cable trenching is required to connect the solar panels to the invertors, and from the invertors to the transformer centres. These cables will operate at a voltage below 1kV.

The medium voltage (MV) underground array cables from the transformer centres to the proposed substation will operate at 33kV and be directly buried except where crossing roads or other services in which case the cable will be installed in ducts covered in concrete. An estimated total of 5,400m linear metres of MV cable trench is required.

There are two parcels of land which comprise part of the overall Array Area A, but which are divided from the main Array Area A by public roads, namely the north-westerly parcel, referred to as parcel 1 in planning drawing titled Overall Site Location Map (drawing number 229101268-MMD-00-XX-DR-E-0100) is separated by the L4030. Parcel 10, to the northeast, is separated from the main Array Area A by the L80591.

The 33kV cabling for Array Area B and C will be required to be constructed within the public road, L-81411-1 and L4030, on its route to the proposed 220kV substation compound, the final section of the route will be off-road as it traverses through agricultural fields. A crossing of the Tellarought River, via an overhead section of cabling which will be strung between two wooden polesets on either side of the river (which can be seen in drawing number 229101268-MMD-00-XX-DR-E-0101), when it reaches Array Area A the MV cabling will be once again undergrounded and will connect to the AIS compound.

Access Tracks

The Proposed Project includes the construction of internal access tracks (total length measures approximately 2860m) to facilitate the movement of construction, operational, and maintenance vehicles throughout the solar farm. These tracks will be constructed using a compacted gravel surface, with a width of 4m, and will be adjusted to suit site-specific conditions and tie-in levels with the existing ground.

One internal access track provides shared access for the solar farm, the BESS compound and proposed substation compound, this track is 6m wide and has been developed to EirGrid Technical Standards for Customer Connections (this track runs from Site Access 4 as illustrated in Planning Drawing 229101268-MMD-00-XX-DR-E-0101 to the proposed substation compound).

The Proposed Project comprises three distinct solar array areas - A, B and C. All the elements of the drainage design have been developed in accordance with CIRIA Sustainable Drainage Systems (SuDS) Manual 2015. To ensure effective surface water management along the proposed access tracks within the solar farm, the project includes the construction of two dedicated drainage systems, namely the access tracks drainage and the perimeter drainage system.

Surface water drainage is required along the proposed access tracks to effectively manage runoff rates as the compacted gravel surface has reduced permeability compared to natural ground conditions. The design across Array Areas A to C includes the installation of filter drains alongside access tracks. These collect and convey surface runoff to soakaways, facilitating gradual infiltration into the subsoil.

The proposed system helps prevent washouts, minimise erosion, and mitigates long-term deterioration of the track infrastructure. The performance of infiltration-based systems is influenced by the geotechnical characteristics of the underlying soil.

The proposed perimeter drainage system is designed to manage flows from the identified grassed areas allocated for solar panels, which naturally slope towards the adjacent access tracks. The design varies across Array Areas A to C and comprises a combination of solutions that facilitate both infiltration and conveyance of surface water flows. In Lot A and Lot C, the system facilitates the discharge of surface water into downstream receiving waterbodies.

The solar farm is primarily situated on agricultural land with filed parcels defined by mature hedgerows that are to be retained and, if required, bolstered. These parcels generally slope towards the vegetated strips, which based on site topography, serve as natural conveyance features that discharge surface water into more defined downstream waterbodies. The hedgerows are anticipated to provide a high degree of natural infiltration

To effectively manage surface water across the solar farm Array Areas A, B and C, the design includes a range of mitigation measures aimed at maintaining pre-development hydrological conditions. These include appropriate vegetation management to preserve infiltration capacity, the implementation of SuDS measures to manage surface water at its source and suitable panel design to reduce runoff concentration.

The layout of solar panels has been designed to provide optimal separation distances between the solar panel array rows to avoid blanket coverage of the site and to allow for vegetation growth between them. The panels are designed with moderate slopes, and the installation frames are elevated at a height of 1.0 metre above ground level. This configuration offers dual benefits: it reduces the potential for elevated rainwater runoff rates and provides space for vegetation growth and maintenance beneath the panels.

As part of the overall drainage strategy, gravel-filled filter drains are proposed between the rows of solar panels. These are intended to intercept and manage surface water runoff, promote infiltration and to mitigate the risk of erosion and waterlogging.

The operation and maintenance of the solar farm will include regular monitoring of the vegetation beneath the panels. Where soil compaction is observed during operation of the site, the ground will be reinstated.

The topographical characteristics relative to respective solar energy farm Array Areas A to C are outlined below.

Array Area A

The overall landscape of Array Area A is relatively uniform, with gradients ranging between 1:20 and 1:30. These consistent slopes facilitate natural surface water conveyance across the site, which follows two primary drainage directions. The western portion of the site slopes predominantly from north to south, directing surface water toward an existing mature hedgerow strip. The eastern portion slopes towards the southeast and east, discharging naturally into the adjacent Owenduff River. This watercourse, along with associated floodplain, defines the eastern boundary of the development area.

During the site walkover, it was noted that there is no formal land drainage along the hedgerow strip running along the southern boundary. However, the topographical survey indicates the presence of a drainage ditch running parallel to the hedgerow. Surface water appears to flow eastwards into a more defined drainage waterbody that ultimately connects to the Owenduff River. The design includes a range of mitigation measures aimed at maintaining pre-development hydrological conditions to effectively manage surface water across the solar farm. These are included in the first part of this section (mainly vegetation management, SuDS filter drains between panels, panel design).

To ensure effective surface water management along the proposed access tracks within the solar farm, the project includes the construction of two dedicated drainage systems, namely the access tracks drainage and the perimeter drainage system.

The design across Array Areas A to C includes the installation of filter drains alongside access tracks. In Area A, the main access track is proposed to connect the substation compound and BESS compound to the local public road L-40232, which defines the northern boundary. In addition, a network of secondary access tracks is proposed to provide operational access throughout the solar farm. The access tracks drainage collects and conveys surface runoff to soakaways, facilitating gradual infiltration.

The proposed perimeter drainage system is designed to manage flows from the identified grassed areas allocated for solar panels, which naturally slope towards the adjacent access tracks. The system comprises French drains, filter drains and carrier drains. Surface water follows the existing topography and discharges through a headwall into an existing waterbody located downstream at the southeast part of Array Area A. The system includes a flow control chamber to ensure that discharged does not exceed greenfield runoff rates, therefore protecting the capacity of the downstream network.

The proposed surface water drainage layout is shown on Drawing No. 229101268-MMD-00-XX-DR-C-0101 to 105.

Array Area B

The Owenduff River, along with its floodplain and associated streams bound the Array Area B to the north, northeast and the northwest. The area generally features gently sloping topography, with average ground gradients of 1:50. An exception is the narrow section in the northeastern

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part, which has a steeper average slope of 1:20. Surface runoff from this catchment naturally discharges into the adjacent river.

The solar farm is primarily situated on agricultural land with filed parcels defined by mature hedgerows. These parcels generally slope towards the vegetated strips, which based on site topography, serve as natural conveyance features that discharge surface water into more defined downstream waterbodies. The design includes a range of mitigation measures aimed at maintaining pre-development hydrological conditions to effectively manage surface water across the solar farm. These are included in the first part of this section (mainly vegetation management, SuDS filter drains between panels, panel design).

To ensure effective surface water management along the proposed access tracks, the project includes the construction of a drainage system designed to collect runoff from both perimeter and access track catchments.

The proposed surface water drainage layout is shown on Drawing No. 229101268-MMD-00-XX-DR-C-0106 to 108.

Array Area C

Area C generally features gently sloping topography, which primary gradients ranging between 1:30 and 1:40, falling westward. These consistent slopes allow natural surface water conveyance across the site. An existing stream defines the western boundary of the development area. The design includes a range of mitigation measures aimed at maintaining pre-development hydrological conditions to effectively manage surface water across the solar farm. These are included in the first part of this section and include: vegetation management; SuDS filter drains between panels and panel design.

To ensure effective surface water management, the project includes the construction of a dedicated access tracks drainage system. This includes the installation of filter drains and soakaways. The main access track is proposed to run centrally through the site, connecting to the local public road that runs parallel to the eastern boundary of Area C.

The proposed perimeter drainage comprises French drains, filter drains and soakaway pits. Surface water overflow from the soakaways follows the existing topography and discharges through a dispersion area into an existing water feature located at the west. This ultimately connects to the stream located farther west.

The proposed surface water drainage layout is shown on Drawing No. 229101268-MMD-00-XX-DR-C-0109 and 110.

Water and Waste Water

There is no requirement for water or wastewater drainage infrastructure as neither are required for the operation of the solar energy farm.

Security Infrastructure

The perimeter of the overall project site will be required to be secured from unauthorised access to ensure protection of the solar equipment. The proposed perimeter fencing is typical deer fencing, structured of galvanised wire steel mesh fencing, measuring 2m high with 15cm wide apertures. The security fencing will have mammal access points to ensure species such as foxes, badgers, rabbits, hares etc. have unfettered movement throughout the solar farm. Fencing will also have the added benefit of ensuring sheep, which will be used to graze throughout the solar farm, will be contained within the solar farm site. Each site entrance will have a 2.0m high double leaf high chain link gate (moss green colour, RAL 6005) installed.

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A closed-circuit television camera (CCTV) system will be provided from various locations in each array area and will be erected on dedicated pole mounted stands at a height of 4.0m above ground level as detailed within planning drawing 229101268-MMD-00-XX-DR-E-0305. The CCTV be angled to record within the array areas only and will not capture any adjacent residential properties or roads. The CCTV system will be monitored remotely on a continual basis using infrared lighting as the solar facility will be unlit at night-time.

There is no lighting infrastructure required or proposed for the operational phase of the solar farm.

Landscaping

As an outcome of the landscape and visual impact assessment, mitigation in the form of additional hedgerow planting was proposed. This will bolster existing hedgerows within and on the boundaries of the Project site to provided further screening. The proposed landscaping is illustrated in the accompanying landscape drawing (refer to planning drawing 25WX01-DR-0100).

Landuse/Grazing Arrangements

At present the Project site comprises improved and wet agricultural grassland and is used for tillage production and animal grazing. It is proposed that all solar farm array areas (A, B and C) will continue to retain agricultural practices through the application of sheep grazing. Sheep grazing is a common agricultural practice at established solar energy farm locations for the maintenance of grassed areas. Sheep grazing has a mutual benefit of retaining agricultural practices and is a sustainable farming practice ensuring vegetation growth does not interfere with solar panels, while also improving biodiversity through the creation of conditions for the (re)establishment of native wildflower/meadow species.

Biodiversity Enhancement Measures

The biodiversity enhancements are based on the preservation of existing local habitats which support flora and fauna of local, regional or national importance. In this regard, areas of recovering remanent fen/ wet woodland habitats have been left undeveloped. Any retained habitats are best managed via low maintenance methods, i.e. reduced grazing or self-regeneration, while no pesticides or herbicide usage will be employed within the Project site.

Sheep grazing will be used to provide a natural form of grass management throughout the solar farm, this has biodiversity benefits to maintain meadow areas and prevent scrub encroachment.

The predominate enhancements are focused on bolstering existing hedgerows throughout the Project site, where current agricultural practices have resulted in rigorous management of hedgerows. Hedgerows will be bolstered with the planting of native hedgerow species, such as hawthorn, sloe, hazel, holly, spindle and guelder rose. Where trees will be planted within hedgerows these species include a mix of oak, crab apple, wild cherry and scots pine.

The proposed biodiversity enhancement measures are listed below.

- 2.01 hectares of existing wet grassland and scrub mix to be conserved and managed to protect existing habitats.
- 2.64 hectares of existing marsh and scrub mix to be conserved and managed to protect existing habitats.
- 5.33 hectares of existing marsh, wet grassland, and scrub mix to be conserved and managed to protect existing habitats.
- Retention of 0.73 hectares including an existing building and bat roost to be left undisturbed.
- Retention of 1.45 hectares of mixed woodland.

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- 3.21 hectares of former agricultural pasture and tillage land is to be planted with native woodland; Alder and Oak on lower lying ground adjacent streams and flood prone areas and Hazel and Oak woodland on drier ground.
- Additional mitigation planting adjoining dwellings will consist of dense native woodland and shrub planting and provides a cumulative area of 1.03 hectares.
- Replanting of degraded hedgerows over and a cumulative area of 1.35 hectares.

Tree planting will be conducted by hand under the supervision of an ecologist to ensure that tree planting is located outside remanent fen/ wet woodland, which will be retained. This will enhance biodiversity within the floodplain of the Owenduff River which forms a boundary of the Project site.

The perimeter fencing for the Proposed Project will have mammal gates installed at regular intervals (small mammal gates at every panel (between posts) and large mammal passes every tenth panel) to allow the mammal access points to ensure species such as foxes, badgers, rabbits, hares etc. have unfettered movement throughout the solar farm.

A key approach in the design of the project was to avoid species rich wet grassland on the western side of Array Area C. This species rich unimproved wet grassland is consistent with the Annex 1 habitat *Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)* (6410). No adjacent drainage works are proposed that will interfere with these habitats.

2.4.2 Battery Energy Storage System Description

2.4.2.1 BESS Units

The purpose of the BESS units is to store surplus energy generated during low demand periods and release this when demand is greater. Additionally, the stored energy is used to provide fast acting DS3 system¹⁴ services which contribute to the stability of the system as the penetration of renewable generation on the system increases.

The BESS units are modular and will be arrayed within the site along with associated transformers and inverters. The BESS unit incorporates a concrete base, battery modules, associated plant and equipment including transformers and inverters.

A BESS operates in either a charging mode or a discharging mode. During discharging mode power from the batteries is converted from direct current to alternating current by an inverter. Power from all the batteries is stepped up through a transformer to a 33 kV busbar which then connects to a main transformer and from there an underground cable connects the facility to the grid. During charging mode, the process is reversed and electricity is fed into the batteries and the energy is stored. For this development, energy for charging of the batteries will only be sourced from the co-located solar development.

The design adopted allows for minimising on-site construction as each modular component is manufactured off-site and transported to site for final assembly. Each BESS unit will be transported to site already built, the site works will include installation, connection via cables and commissioning. Inverters and transformers will also be transported to site as complete functional units ready for installation and connection on site.

2.4.2.2 Site Layout and Processes

The precise BESS arrangement, consisting of the containerised battery storage modules, the transformer and Power Conversion Systems (PCSs), to be used at the site will be finalised prior

¹⁴ DS3 is about operating the power system securely, while meeting renewable targets.

RECEIVED: 22/09/2025

to construction and will be dependent on commercial and technical considerations at the time of procurement. Dimensions of containerised modules produced by different manufacturers vary; however, designs have been over specified, and therefore, the total structure height and boundaries will not exceed that indicated in the accompanying planning drawings.

These containers will house the batteries, fire suppression equipment and associated electrical components. The cable routing between containers would be above ground.

Each battery module will be monitored and controlled through a Battery Power Facility Management System. The site will be monitored and controlled remotely and will be visited regularly for routine maintenance and security checks.

An example of a typical containerised battery storage module and associated transformer and PCU is provided in **Error! Reference source not found.** and **Error! Reference source not found.**.

Figure 2-2: Image of a typical container housing the battery storage modules



Source: Mott MacDonald

Figure 2-3: Image of a typical container housing the PCU



Source: Power Electronics

A certain number of the BESS containers may include 3m lightning finials, if required, as per the site lightning risk assessment. For the purpose of the planning application and associated drawings, it has been assumed that lightning finials will be provided on each BESS container. Details have been provided for standard approach for a BESS container in planning application drawing 229101268-MMD-00-XX-DR-E-0308.

A 8.5m high acoustic barrier surrounding the BESS compound is proposed to mitigate noise impacts to local residents.

For more details on the proposed location and layout of the BESS units, refer to planning application drawings 229101268-MMD-00-XX-DR-E-0200, 229101268-MMD-00-XX-DR-E-0203, 0205 and 0206.

2.4.2.3 Internal circulation tracks

Internal access is required throughout the BESS compound to allow safe vehicular access and movements to areas of the array for maintenance purposes throughout its operational lifespan. The access tracks will be 4.5m wide and will be excavated to a depth of 450mm. This will then be replaced with an aggregate base layer of soil that will be topped with a surface layer of gravel. The main access road leading to the proposed substation compound and BESS compound will be topped with tarmac.

The BESS compound will include for two access points (one to the west and one to the east) to ensure redundancy in the event of an obstruction and emergency [fire] services to attend in the event of a fire.

2.4.2.4 Water Supply

An on-site fire water supply will be provided due to distance from any Uisce Éireann water supply infrastructure. The water supply will be capable of supplying a minimum of 1900 litres / minute for at least two hours in accordance with National Fire Chiefs Council publication 'Grid Scale Battery Energy Storage System Planning – Guidance for FRS'¹⁵. Firefighting water is to be supplied from a bored well (the location of which will be subject to site investigation results) that will be located a minimum of 50m from any watercourse and 30m from the GIS building's foul holding tank. Two fire water supply tanks are proposed, each measuring a height of 4.2m and with a tank diameter of 6.1m, each providing a volume of 124m³. The tanks will be equipped with level monitoring and overflow protection. A dedicated pump house will be constructed to accommodate a fire pump capable of maintaining the required pressure and flow during emergency conditions, with backup power provision for grid outages.

There is no requirement for a potable water supply for the operation of the BESS.

2.4.2.5 Wastewater Drainage

No permanent welfare facilities are proposed for the BESS plant. As a result, there is no requirement for wastewater treatment or drainage infrastructure to be installed to facilitate the operation of the BESS plant.

2.4.2.6 Surface Water Drainage

To comply with established best practice, a surface water drainage system incorporating Sustainable Drainage System (SuDS) features will be constructed to manage the quantity and quality of runoff during rainfall events. The proposed drainage strategy will comply with the

¹⁵ <https://nfcc.org.uk/wp-content/uploads/2023/10/Grid-Scale-Battery-Energy-Storage-System-planning-Guidance-for-FRS.pdf>

recommendations as outlined in the Wexford County Development Plan 2022-2028 (Volume 2, Chapter 9) that include reference to the CIRIA SuDS Manual 2015.

Surface runoff from the narrow area along the north boundary of the BESS compound will naturally flow in a northwestern direction towards the proposed solar energy farm (Array Area A) access track drainage, following the geomorphology of the site.

The surface water runoff generated by the BESS facility will be collected via a gravity drainage system and managed using a dry detention basin. The proposed future substation will also be connected to main gravity drainage system serving the BESS compound. The basin will be unlined allowing for infiltration and it will be sized to ensure no flooding of the proposed site occurs for the critical storm with a 1 in 100-year return period, including a 30% allowance for climate change. The operational efficiency of infiltration systems is dependent on the geotechnical properties of underlying soil at the proposed location and should be confirmed through ground investigation. The dry detention basin will include a sediment forebay at the inlet of the basin that will provide sediment treatment by allowing particulates to settle out and preventing their resuspension within the main detention area. Furthermore, a permanently wet volume will be provided to enhance the treatment of surface water runoff by encouraging the adhesion of entrained contaminants to vegetation planted within the pond. The outfall from the basin will be discharged via a headwall into the existing drainage ditch located to the southeast. The headwall is positioned approximately 5 metres from the perimeter fencing of the BESS compound. Based on site walkover, the ditch maintains hydrological connectivity with the Owenduff River, which flows in a south-westerly direction, running parallel to the site's boundary. The discharge to a watercourse is to be restricted in accordance with sustainable drainage principles and limited to the greenfield runoff rate.

In case of a fire event, surface water from the hardstanding BESS area will be automatically redirected to a firewater storage tank via an automated penstock. The tank will be sized to accommodate flows during a critical storm event with a 1 in 10-year return period, including a 30% allowance for climate change.

A perimeter drainage system, comprising a filter drains and soakaways system, will be installed to collect and infiltrate surface water runoff from the access track located in the western section of the Project Site, as well as from the adjacent unpaved area between the BESS compound and the substation compound. In the southwestern area, the surfacing surrounding the fire tank will be served by the filter drains running parallel to the acoustic wall that connect to main gravity drainage system of the BESS compound.

The proposed surface water drainage system will incorporate the following features to reduce the risk of pollution and improve the quality of surface water which will be discharged from the site:

- Silt trap chamber and oil/fuel interceptor located upstream of the dry detention basin to help remove pollutants which may have become entrained in runoff from any hardstanding areas that may be at risk of contamination from oil or fuel spills associated with vehicles;
- Flow control chamber downstream of the dry detention basin regulates the flow at the discharge point from the basin;
- Forebay within the dry detention basin to promote treatment and settlement; and,
- Emergency shut-off valve chambers located upstream of the dry detention basin to prevent discharge from the drainage network in an emergency event and during periodic maintenance.

The proposed surface water drainage layout is shown on Planning Drawing No. 229101268-MMD-00-XX-DR-C-0100. The proposed firewater storage tank plan and sections are included

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on Drawing No. 229101268-MMD-00-XX-DR-C-0017 and the proposed pumphouse plan and sections are on Drawing No. 229101268-MMD-00-XX-DR-C-0018.

2.4.2.7 Lighting

Internal site lighting is proposed within the centre of the BESS compound, there will be no perimeter lighting. A total of 14 no. double head lamp post positions are indicated on the proposed site layout plans. Lighting will be sensor activated. The lamp posts will be inward facing and approximately 6.0m in height, the details of which are shown in the planning application drawing 229101268-MMD-00-XX-DR-C-0100.

2.4.2.8 Acoustic barrier

An acoustic barrier is required around the BESS compound and a further section will extend internally. The acoustic barrier will measure a height of 8.5m and will have full absorptive noise capacity to ensure there is no exceedance of background noise levels at the closest residential receptors.

2.4.2.9 Embedded Fire Protection

There are a number of levels of fire protection built into the BESS units. The BESS plants are comprised of a number of individual battery container units called 'cubes', each cube has racks, each rack contains a number of battery modules and each module is comprised of a number of battery cells.

At a module and cell level, the battery temperature and voltage are constantly monitored. If these parameters are measured outside the safe operating range, the module is automatically disconnected from the system in order to prevent any further issues.

Should the module level protections fail to prevent a fire each cube contains gas, temperature and smoke detection sensors. If smoke or oxidation gases are detected within the cube, all cubes linked in the same string are disconnected from the system and a solid aerosol fire suppressant is automatically released within the cube.

As a final layer of protection the battery modules are designed to so that in the event the first two layers of fire protection do not prevent a fire igniting, any fire will remain contained within that module and will not spread to other modules within the container and thereby will not spread to adjacent containers.

In line with best practice guidance, a water-based fire suppression system is proposed to provide defensive cooling. This involves the strategic application of water to adjacent units and surrounding infrastructure to prevent fire spread and reduce thermal escalation. Direct application of water onto burning battery modules is to be avoided due to electrical hazards. Firewater containment measures are incorporated into the site design to manage runoff and prevent contamination.

2.4.2.10 Security Infrastructure

The BESS compound will be required to be secured from unauthorised access to ensure protection of the BESS units. The proposed fencing comprises 2.6m high steel palisade fencing (moss green colour, RAL 6005).

The closed circuit television cameras (CCTV) system will be provided around the perimeter of the solar farm from various locations in each array area and will be erected on dedicated pole mounted stands at a height of 3.5m above ground level as detailed within planning drawing titled Ancillary Details (Drawing number 229101268-MMD-00-XX-DR-E-0305). The CCTV cameras will be angled to record within the array areas only and will not capture any adjacent

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residential properties. The CCTV system will be monitored remotely on a continual basis using infrared lighting as the facility will be unlit at night-time.

2.4.3 Grid Connection Description

Shelburne Energy Farm as an electricity generation and storage project, requires a connection to the national grid to enable the export of the electricity generated or stored. The connection to the national grid will comprise a 220kV Gas Insulated Switchgear substation compound with two transformers, one for the BESS storing electricity generated by the solar energy farm and a second for the BESS storing electricity from the national grid.

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2.4.3.1 220kV Substation Compound

The substation compound will house two separately fenced compounds, to the west the GIS compound (EirGrid operated compound) and to the east the AIS compound (customer operated compound). Both compounds have been designed to EirGrid technical specifications and are further detailed herein.

2.4.3.2 GIS Compound

The GIS compound which will be securely fencing with palisade fencing, with an independent and separate gated compound entrance. The 220kV GIS Building housing all associated GIS equipment will be the solitary above ground structure within the GIS compound. The 220kV GIS building will comprise a two-storey over partial basement structure. It will house the new gas insulated switchgear, comprising Sulphur Hexafluoride (SF6) insulated circuit breakers, disconnectors and other high voltage equipment. Auxiliary services equipment, such as control and telecoms equipment, low voltage switchgear, an emergency diesel generator, and batteries. Welfare facilities (i.e. toilets, sinks, messroom, workshop.) will also be located within the GIS substation building in line with EirGrid Functional Specifications. The underground cables will connect with the substation via the partial basement, which will be designed to prevent any water ingress.

A below ground earth grid will be installed in a grid arrangement approximately 600-750 mm below the finished surface. The earth grid will consist of bare stranded copper conductor with an outside diameter of approximately 95mm². The purpose of the earth grid is to ensure personnel and public safety during electrical faults that may occur on the transmission grid.

Fencing around the entire EirGrid substation compound, with the exception of the site entrances/gates, will comprise 2.6m high galvanised steel palisade security fencing, with black powder coat.

The building will comprise a typical industrial form, with a structural steel frame clad with profiled metallic sheet wall and roof cladding. Internal walling of masonry will be adopted, except where specific load carrying requirements necessitate the use of reinforced concrete walls.

Industrial claddings will be factory finished according to EirGrid specification. The roof will be shallow pitched and constructed of profiled metal decking on purlins spanning between rafters. The buildings will have access gantries and walkways for access to equipment. These will be constructed of stainless/galvanised steel open grating type flooring supported on steel beams and columns.

External doors and escape doors will generally comprise metal flush doors and mild steel frames. Fire doors will comply with BS 476-22:1987 - Fire tests on building materials and structures.

The ultimate choice of finish and colour of the metal cladding coating will be made considering the specified service life, resistance to degradation under long term exposure to climatic

conditions and will comply with the requirements of the statutory approval, if granted. A typical 220kV GIS Substation Building is shown in Figure 2.4.

Figure 2-4: Typical 220kV GIS Substation Building



Directional light fittings have been incorporated within the plan in order to minimise light pollution in the surrounding area. External light fittings will be mounted to the cladding of the GIS building facing downwards to minimise impacts to areas outside the substation compound. A total of 20no. external lights will be mounted to the GIS building, six lights will be positioned on each long edge of the building, and two lights on each short edge.

2.4.3.3 AIS Compound

The AIS Compound contains two individually fenced compounds, the southern compound will contain the AIS structures and equipment which related to the transfer of electricity from the solar farm and BESS. The northern compound will be left unoccupied (i.e. no AIS equipment/control building will be installed) and may be utilised in the future should any future expansion of the facility be developed, subject to all necessary development consents and assessments. The dimensions of the AIS structures are detailed in Table 2.1.

The AIS compound will contain a single control building which will contain a switchgear room that houses the 33kV switchgear and a transformer. The security and control room will house the cabinets used for SCADA, telecommunications, security and fire, CCTV and LV distribution. A storage room will also be provided within the control building. A total of four lighting poles will be provided in the AIS compound.

Table 2-1: Approximate Dimensions of AIS structures

Structure	Number of Structures	Length (m)	Width (m)	Height (m)
Transformers	1	10.8	6.9	5.72
Lightning monopoles	2	n/a	n/a	18.5
Cable Sealing Ends (with associated steelwork)	3	n/a	n/a	4.1
Voltage Transformers	3	n/a	n/a	4.1
Current transformers	3	n/a	n/a	4.1

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Structure	Number of Structures	Length (m)	Width (m)	Height (m)
Disconnectors	3	2.8	n/a	4.1
Post insulators	6	n/a	n/a	4.1
Control Building	1	9	7.5	4
Lightning Rods (mounted to the roof of the control building)	4	n/a	n/a	2
Palisade Fence	1	n/a	n/a	2.6

2.4.3.4 Surface Water Drainage

The proposed substation compound will include a range of hardstanding surfaces, comprising building roofs, vehicle access tracks, parking areas and compacted granular zones within the compound. These surfaces will generate stormwater runoff, which will be intercepted and managed through a gravity-fed drainage system designed to collect and convey flows efficiently across the site. The drainage will consist of a combination of filter drains used to capture and promote infiltration of surface water from permeable areas and carrier pipes that will convey collected runoff. The proposed substation drainage system is designed to discharge into the main BESS drainage network. This integrated approach ensures that surface water flows generated within the substation compound are effectively managed within the overall site-wide drainage strategy. The BESS drainage system has been sized to accommodate the additional runoff from the substation. This allows for consolidated flow conveyance, attenuation, and controlled discharge in accordance with sustainable drainage principles and regulatory requirements.

Additionally, measures to protect water quality will have to be a considered within the design of the substation compound drainage. In accordance with standards practice, drainage from oil filled bunds will require an oil-sensitive bund pump. As a backup measure to ensure no oil can escape it is proposed that all storm water generated on the site will gravity flow to the outfall via a full retention petrol / oil interceptor.

A perimeter drainage comprising a French drain will be constructed parallel to the western and southern site boundary to intercept and infiltrate surface water runoff to prevent surface water from descending from the adjacent areas towards the site. The proposed surface water drainage layout is shown on Drawing No. 229101268-MMD-00-XX-DR-C-0100.

2.4.3.5 Water and Wastewater

A new potable water connection is required for welfare facilities within the proposed GIS substation. Due to the distance from existing potable water infrastructure the proposed water supply will be taken from the bored well that is designed to supply also the firefighting water for the BESS compound.

This borehole will be constructed with regard to the Environmental Protection Agency Drinking Water Advice Note No.14, Borehole Construction and Wellhead Protection (Version 1, 2013)37. The volumes required from the well during the operational phase will be limited, as staff visiting for operational and maintenance purposes are likely to not exceed five persons twice per month.

The only sources of wastewater on site will be the basic welfare facilities located in the GIS building. There is an absence of existing wastewater infrastructure in the locality of the substation. Therefore, an underground foul holding tank is proposed to collect wastewater. This is a standard solution that require regular scheduled emptying. Appropriate separation distance to be provided to comply with the EPA’s Code of Practice for Domestic Waste Water Treatment Systems (Population Equivalent ≤ 10) (2021).

2.4.3.6 220kV Cable Connection

The proposed underground cable development will comprise two 220kV electricity cables and fibre optic cables to facilitate the connection of electricity generated at the solar and battery plant to the national grid.

The grid connection is proposed via two 220kV underground cables (UGC) approximately 2850m in length, the initial section will extend from the GIS building and along access tracks within the Project site until it reaches the L40232, turning westwards until it reaches the junction with the L4030 where it will continue northwards before once again travelling off-road, as it passes through agricultural land to connect to the existing Great Island-Lodgewood 220kV overhead transmission circuit. Each 220kV circuit will have a total of four joint bays and accompanying each joint bay will be a communication chamber and a link box.

The underground section of the cable will have a trefoil formation. The assessment included in this NIS is based on a trefoil formation which has a standard width.

The final section of each 220kV cable will be above ground, as each cable will connect to a proposed Line Cable Interface Mast, which allows each circuit to connect to the existing Great Island-Lodgewood 220kV overhead transmission circuit providing a "looped-in connection".

2.4.4 Construction Phase Activities

2.4.4.1 Solar Farm

Site Preparation

Localised vegetation removal will be required, and any removal of hedgerow, trees or scrub will take place outside of the bird nesting season (01 March - 31 August). There is no requirement for site levelling to be undertaken for the proposed solar farm with the exception of minor re-structuring to provide a flat platform for the containerised transformer systems.

Solar PV Civil Works

Access Tracks

The construction methodology will include the following materials and steps:

- Topsoil stripping along the route of the proposed track, with the excavated soil stored on-site for later reinstatement or landscaping.
- Installation of a permeable geotextile membrane (e.g., Terram 1000 or equivalent) to allow water infiltration while preventing the upward migration of fines from the subgrade.
- In areas with weaker subsoil, a soil-reinforcing geogrid (e.g., Tensar TX160 or similar) or high-strength geotextile will be installed to enhance load-bearing capacity and reduce the required thickness of aggregate layers.
- Placement of a minimum 200 mm thick Clause 804 sub-base (a well-graded granular material composed of crushed rock, gravel, or recycled concrete), compacted in layers to provide structural support and durability.
- Application of a surface layer of crushed stone (typically 6F2 or similar), compacted in layers to form a durable, low-dust running surface suitable for regular vehicle use.
- The access tracks are designed to be semi-permeable and semi-permanent, supporting sustainable drainage and minimising surface runoff. Surface water drainage will be installed alongside the tracks to manage surface water and prevent erosion. Tracks are typically aligned along field boundaries or existing farm routes to minimise land take and ecological disturbance.

To further reduce environmental impact:

- Access to most of solar panels will not require access tracks and will use tractors or 4-wheel drive vehicles as the vast majority of the site is well drained with low risk of soil rutting etc.
- Tracks are allowed to grass over post-construction to blend with the surrounding landscape and reduce visual impact.
- No concrete is used in the track construction unless required for specific load-bearing areas such as crane pads or substation access points.
- Construction is staged to minimise soil disturbance and protect biodiversity, particularly during sensitive ecological periods.

At the end of the solar farm's operational life, the access tracks will be decommissioned, with all materials removed and the land restored to its original agricultural condition, including the reinstatement of topsoil and reseeded where appropriate.

Drainage

The construction methodology will include the following materials and steps:

- No drainage works are proposed in the vicinity of wet grassland and marsh habitats which are generally down slope of proposed works areas.
- Ensure safe excavation practices, including shoring or benching as required. Where dewatering is required, water will be treated and appropriately attenuated, before being discharged to vegetation or surface water drainage feature
- Conduct geotechnical surveys to assess soil type, soil permeability, bearing capacity, groundwater levels and contamination risk through site investigation.
- Surface water carrier pipes. Excavate pipe trenches to the specified depth, ensuring a minimum cover. Ensure trench base is flat and follows the designed slope. Fill the trench with bedding material below, around and above the pipe. Pipes shall be laid at specified design grade using approved methods. Ensure proper joint assembly. Backfill trenches in layers using suitable materials.
- Install inspection chambers at appropriate intervals for maintenance access. Regular inspection and maintenance are essential to prevent clogging and ensure long-term performance.
- Assess ground conditions to determine the feasibility of implementing an infiltration system
- French drains and filter drains: Excavate the trenches to the specified depth, ensure trench base is flat and follows the designed slope. Use a geotextile membrane to separate the trench from surrounding soil and prevent migration of fines. For non-infiltrating designs, use an impermeable liner to contain flow and direct it to downstream SuDS components. Install a perforated carrier pipe at the base of the filter drain trench. Backfill the trench/ French drain with clean, angular stone (Clause 505 Type B coarse and light weight aggregate to Table 5/5 MCDRW Series 500). Fill to within 150 mm of the surface. Top with crushed stone or gravel to match levels of adjacent surfacing.
- Soakaway: Excavate to the required dimensions based on design calculations. Provide a level bedding layer of compacted granular material. Wrap the stone fill in a geotextile membrane to prevent soil ingress while allowing water to pass through. Fill the soakaway pit with clean, angular stone (Clause 505 Type B) to the specified depth. Ensure uniform distribution and compaction of the stone to prevent settlement. Connect the inlet pipe to the soakaway, ensuring it discharges above the stone layer. Install a perforated vertical observation tube for monitoring water levels. Maintain a minimum cover depth for the soakaways. Backfill the top layer with permeable material or topsoil, depending on surface finish requirements. Restore the surface above the soakaway.
- Headwall and dispersion outlet installation. Evaluate existing waterbody/ditch location, direction of flow and soil conditions in advance of works. Use shoring or trench boxes if

required to prevent collapse and protect the ditch. Ensure the base is level and compacted to prevent settlement. Place a layer of compacted granular material or lean concrete to form a stable base. Install any required anti-scour measures to protect the ditch banks. Position the headwall to required depth and dimensions, ensuring a level base and to provide alignment with the existing ditch to guide interrupted water flow. Backfill around the headwall with suitable material, compacted in layers. Restore the ditch profile and surrounding area.

- It is required that all grassed areas will be reinstated by either seeding or by replacing with grass turves.

To further reduce environmental impact:

- Weather conditions are to be considered when planning construction activities to minimise risk of run off from site.
- The contractor will carry out visual examinations of local watercourses during the construction phase. In the unlikely event of water quality concerns, the Environmental Manager will be consulted.
- Materials storage and storage tanks etc, shall not be located near any surface water features and will be located beyond the 50m exclusion zone.
- Appropriate containment facilities will be provided to ensure that any spills from vehicles are contained and removed off site. Use spill kits and follow pollution prevention protocols.
- Welfare facilities will be provided within the designated construction compound for duration of works. All generated effluent will be contained in a sealed holding tank, which will be emptied and disposed of off-site by a licenced contractor. Water will be supplied to the site via tanker as required. No impacts on existing site conditions are anticipated.
- Temporary works will be designed to avoid increasing flood risk from overland flow by limiting excavation lengths and providing suitable drainage provision.
- Silt control measures, including silt traps and fences, will be implemented to prevent construction site-generated sediment from entering surface drainage and nearby waterbodies.

Solar panel installation

- The metal support structure which the PV panels will be bear the PV panels will be secured in-situ with piles will be driven into the ground and no additional foundation will be required. However, this aspect should be confirmed once the geotechnical studies are completed, and the structure is selected.
- The installation of the piles is carried out using specialised machinery that will drive them into the ground. The length of embedding (depth into the ground) may vary depending on the ground characteristics.
- PV modules are often attached to mounting rails using module clamps or directly bolted. The mounting rails provide a stable base, while the clamps or the bolts secure the modules in place.
- String inverters can be mounted on piles driven into the ground or integrated into the PV panel support structures. For this project, it is proposed that they be located along the roads.

LV/MV cabling

Civil works for trenching within the solar plant will be required to accommodate all necessary cabling and ducting between the string inverters, transformer containers, and associated electrical infrastructure.

- Trenches will typically range in depth and width according to cable specification and installation standards and will be excavated to ensure sufficient separation between circuits as required by design codes and cable section calculations.

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- All trenches will be lined with sand bedding, with marker tape installed above the cables prior to backfilling.
- Backfilling materials will be free of rocks, roots, vegetation or any element that could damage the cables or create cavities after compaction or during project lifetime.
- The alignment of the trenches will be coordinated with the overall site layout to minimise crossings and maintain clear access routes for installation and operational activities.
- Upon completion of cable installation, trenches will be reinstated to match the finished surface levels.

38kV poleset

- Transport 2 no. wooden poles, crossarm, insulators, and fittings to the area immediately adjacent to the intended location. The wooden poles are between 16m - 23m in length and weigh ca. 2.0 - 2.5 tonnes.
- Excavate for each pole using a tracked excavator. The topsoil layer will be excavated first and placed at a location adjacent to the construction area. The soil below will be stockpiled separately.
- Line up the 2 no. poles with the excavated holes. Attach the new crossarm to 1 no. pole. The machine operator will then drive forward pushing each pole up until the pole is in an almost vertical position. The pole will be supported at all times while the excavation is backfilled to a minimum depth by using a smaller tracked excavator.
- Insert each new wooden pole in the ground at a depth of 2.3m bgl.
- After erection of the poleset, excavate a further 0.8m bgl in between the poles. This is a small linear excavation necessary to install wooden sleepers. These sleepers add additional stability to the new poleset and are attached to the poleset using a U-bolt.
- Attach the crossarm to the second pole.
- Backfill the soil arisings (spoil) with the turf layer placed on top.

Transformer centres

The modular containerised transformer centres will be placed on suitably bunded concrete plinths. Soil will be excavated and stored on-site for later reinstatement or landscaping, following which, the bund will be poured

2.4.4.2 Battery Energy Storage System

BESS Civil Works

The BESS site will be required to be levelled. The existing site slopes southwards from a high level of +43.4 OD to a low point of +34.7m OD to the south East of the site. It is proposed that the development site is set at a gradual slope of 1:150 from +39.495m OD to +36.800m OD. The proposed site will follow the natural slope southwards to facilitate the drainage design intent to follow the natural drainage south-westwards. A cut & fill analysis estimates a cut quantity of 23,541.32m³ (accounting for a bulk factor of 1.15) and a fill quantity of 17805.874 m³. As much of the cut quantity as practicable will be used for fill, with the balance to be retained on site. The need for a level platform for the BESS is the trigger for the need for an EIAR in conjunction with the levelling required for the substation.

A minimum 300mm concrete platform will be constructed under each of the BESS and PCS containers, and this will support the BESS containers and equipment. An access track is proposed to the east and west of the BESS compound to access track which will have a tarmac finish, while the areas between containers will be hardstanding concrete.

An absorptive acoustic barrier will be installed at the BESS location to reduce noise impacts to local receptors. The barrier will be formed by a set of 4m wide panels each with its own

foundation and support designed for the appropriate design loads. Foundation construction will commence after the completion of BESS site clearance and grading. The foundation installation will involve excavation, form work, steel reinforcement, and concrete placement. Foundations will be designed in accordance with the appropriate design loads and specifications.

Civil works for trenching within the BESS compound will be required to accommodate all necessary cabling and ducting between the DC containers, PCSs, and associated electrical infrastructure. Trenches will typically range in depth and width according to cable specification and installation standards, and will be excavated to ensure sufficient separation between circuits as required by design codes and cable section calculations. All trenches will be lined with sand bedding, with marker tape installed above the cables prior to backfilling. Backfilling materials will be free of rocks, roots, vegetation or any element that could damage the cables or create cavities after compaction or during project lifetime. The alignment of the trenches will be coordinated with the overall site layout to minimise crossings and maintain clear access routes for installation and operational activities. Upon completion of cable installation, trenches will be reinstated to match the finished surface levels.

The BESS units will be delivered to site, pre-integrated with internal components such as battery racks, HVAC systems, fire suppression, and Battery Management Systems (BMS). Using cranes or other lifting equipment, the BESS units are carefully placed onto their designated foundations and anchored securely. Mechanical connections, such as HVAC ducting and fire system interfaces, is also done afterwards.

Drainage

The construction methodology will include the following materials and steps:

Drainage pipework

- Ensure safe excavation practices, including shoring or benching as required. Where dewatering is required, water will be treated and appropriately attenuated, before being discharged to vegetation or surface water drainage feature
- Conduct geotechnical surveys to assess soil type, soil permeability, bearing capacity, groundwater levels and contamination risk through site investigation.
- Surface water carrier pipes. Excavate pipe trenches to the specified depth, ensuring a minimum cover. Ensure trench base is flat and follows the designed slope. Fill the trench with bedding material below, around and above the pipe. Pipes shall be laid at specified design grade using approved methods. Ensure proper joint assembly. Backfill trenches in layers using suitable materials.
- Install inspection chambers at appropriate intervals for maintenance access. Regular inspection and maintenance is essential to prevent clogging and ensure long-term performance.
- Assess ground conditions to determine the feasibility of implementing an infiltration system
- French drains and filter drains. Excavate the trenches to the specified depth, ensure trench base is flat and follows the designed slope. Use a geotextile membrane to separate the trench from surrounding soil and prevent migration of fines. For non-infiltrating designs, use an impermeable liner to contain flow and direct it to downstream SuDS components. Install a perforated carrier pipe at the base of the filter drain trench. Backfill the trench/ French drain with clean, angular stone (Clause 505 Type B coarse and light weight aggregate to Table 5/5 MCDRW Series 500). Fill to within 150 mm of the surface. Top with crushed stone or gravel to match levels of adjacent surfacing.

Soakaway

- Excavate to the required dimensions based on design calculations.
- Provide a level bedding layer of compacted granular material.

- Wrap the stone fill in a geotextile membrane to prevent soil ingress while allowing water to pass through.
- Fill the soakaway pit with clean, angular stone (Clause 505 Type B) to the specified depth.
- Ensure uniform distribution and compaction of the stone to prevent settlement. Connect the inlet pipe to the soakaway, ensuring it discharges above the stone layer.
- Install a perforated vertical observation tube for monitoring water levels. Maintain a minimum cover depth for the soakaways.
- Backfill the top layer with permeable material or topsoil, depending on surface finish requirements.
- Restore the surface above the soakaway.

Attenuation basin

- Clear vegetation, debris, and obstructions from the site. Set out pond boundaries and access routes in accordance with approved drawings.
- Excavate to the required depth and shape. Dewater the excavation if groundwater is encountered.
- Grade and compact the base to design levels. Use a geotextile permeable membrane to separate the base from surrounding soil and prevent migration of fines.
- Construct headwall inlet and outlet structures and forebay berm to manage flows.
- Install flow control chamber at the outlet to regulate discharge rates.
- Fit overflow to manage exceedance flows safely.
- Install fencing and access paths if required.
- Inspect inlet/outlet structures and liner integrity. Confirm pond capacity and flow control performance.

Headwall installation

- Evaluate existing waterbody/ditch location and direction of flow, soil conditions, and environmental constraints in advance of works.
- Use shoring or trench boxes if required to prevent collapse and protect the ditch. Ensure the base is level and compacted to prevent settlement.
- Place a layer of compacted granular material or lean concrete to form a stable base. Install any required anti-scour measures to protect the ditch banks.
- Position the headwall to required depth and dimensions, ensuring a level base and to provide alignment with the existing ditch to guide interrupted water flow.
- Backfill around the headwall with suitable material, compacted in layers.
- Restore the ditch profile and surrounding area.
- Access ground conditions to determine measures for the underground structures including oil / fuel interceptor, fire water storage tank, foul water holding tank to withstand earth pressure, hydrostatic pressure, and uplift forces.

Underground structures including oil / fuel interceptor, fire water storage tank, foul water holding tank

- Excavate to the required depth, allowing for base slab thickness and working space. Ensure safe excavation practices, including shoring or benching as required. Dewater the excavation if groundwater is present. Install anti-floatation measures in high groundwater areas. Install formwork and reinforcement of the underground tank as per structural design. Install inlet/outlet pipework, access covers, and ventilation systems. Fit internal components such as baffles or pump chambers if specified. Perform water tightness testing to confirm integrity. Inspect structural elements, pipe connections, and access fittings. Backfill around the tank

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with suitable material in compacted layers. Restore surface finishes and ensure proper drainage away from the tank.

Firefighting water supply tanks

- Conduct a site survey to confirm location, access, and ground stability. Clear vegetation and debris, and level the area.
- Construct a reinforced concrete or compacted gravel base, ensuring it is level and sized to support the tank footprint.
- Install foundation, anchor bolts or base plates as per tank design. Assemble the tank according to manufacturer specifications. Install inlet, outlet, overflow, and drain connections as per design.
- Fit access ladders, inspection hatches and safety railings if required.
- Conduct hydrostatic testing to confirm structural integrity.
- Inspect all fittings and connections for proper function.

Water supply system

- Conduct hydrogeological surveys to support selection of appropriate bored well location. The well to be installed with third party contractor. Use submersible or jet pumps to be installed depending on the well depth and yield. Conduct test pumping to evaluate performance.

Watermain pipe

- Excavate pipe trenches to the specified depth, ensuring a minimum cover. Ensure trench base is flat and follows the designed slope.
- Fill the trench with bedding material below, around and above the pipe. Pipes shall be laid at specified design grade using approved methods.
- Ensure proper joint assembly. Install thrust blocks or mechanical joint restraints at bends, joints and valves. Install service connections, scour and air release valves as per design.
- Backfill trenches in layers using suitable materials.

Pump house

- Excavate for foundations, sump pits, and pipelines as per design drawings.
- Construct the foundation using reinforced concrete, ensuring proper waterproofing. Build the superstructure with associated utilities.
- Install pumps, base frames, and connect raising mains and discharge pipelines as per design specifications.
- Complete electrical works including control panels, cable laying, earthing, and safety systems.
- Conduct thorough testing and commissioning of mechanical and electrical systems.

To further reduce environmental impact:

- Weather conditions are to be considered when planning construction activities to minimise risk of run off from site.
- The contractor will carry out visual examinations of local watercourses during the construction phase. In the unlikely event of water quality concerns, the Environmental Manager will be consulted.
- Materials storage and storage tanks etc, shall not be located near any surface water features and will be located beyond the 50m exclusion zone.
- Appropriate containment facilities will be provided to ensure that any spills from vehicles are contained and removed off site. Use spill kits and follow pollution prevention protocols.

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- Concrete or concrete contaminated water run-off will not be allowed to enter any watercourses, drainage channels and other surface water features.
- Welfare facilities will be provided within the designated construction compound for duration of works. All generated effluent will be contained in a sealed holding tank, which will be emptied and disposed of off-site by a licenced contractor. Water will be supplied to the site via tanker as required. No impacts on existing site conditions are anticipated.
- Temporary works will be designed to avoid increasing flood risk from overland flow by limiting excavation lengths and providing suitable drainage provision.
- Silt control measures, including silt traps and fences, will be implemented to prevent construction site-generated sediment from entering surface drainage and nearby waterbodies.

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BESS electrical works

Following the placement of the BESS units on their foundations, electrical installation begins. Internally, battery strings are connected and routed to the PCS, which converts DC power from the batteries to AC for grid export. AC cabling is then installed to connect PCS units to medium-voltage transformers and onward to the MV switchgears in the substation throughout the MV circuits. Control and communication cabling is laid to integrate the BMS, PCS, and SCADA systems. Auxiliary systems such as lighting, security, and emergency shutdown circuits are wired and tested. All electrical works are carried out in accordance with local electrical codes and standards.

BESS Commissioning

Prior to shipment and installation, Factory Acceptance Tests (FAT) are conducted at manufacturer's facility, verifying that the system meets all technical specifications, safety standards, and performance requirements outlined during the design phase. FAT typically includes visual inspections, functional tests of components like battery modules, power conversion systems (PCS), and battery management systems (BMS), as well as validation of thermal management and fire safety systems. Once equipment is fully installed on site the commissioning phase begins with pre-functional checks, including visual inspections, insulation resistance testing, and validation of protection settings. Once systems are energized, functional testing is conducted on the BMS, PCS, HVAC, fire suppression, and SCADA interfaces. Site Acceptance Tests (SAT) include verifying system performance under various operating conditions such as charge/discharge cycles, grid response tests (e.g., frequency regulation, reactive power support), and fault simulations. Communication protocols are tested to ensure reliable data exchange between site equipment and remote monitoring centres. Final SAT documentation is compiled, including test reports, calibration certificates, and compliance records. Upon successful completion, the system is handed over to operations.

2.4.4.3 Substation Compound

General construction phase activities associated with the substation are set out below.

Civil works

- Demarcation of construction works areas, clearance, and site levelling to prepare the works area. As the substation is to be located on an area set aside within the Shelburne Energy Farm project area, the site levelling works will be completed as part of the site groundworks.
- Topsoil will be stripped using excavators. The topsoil will be stockpiled within the demarcated boundary. The grounds will be built up to a finished ground level of 37.3 to 39.4 metres above ordnance datum.
- Stone for compound surfacing will be graded into place using excavator.

The main civil works for constructing the new GIS building will include:

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- Foundations works
- Structural steelwork erection
- Cladding and building finishing works
- Permanent water supply and drainage works
- Miscellaneous civil works: paving, landscaping, permanent fencing and completion of works.

Foundation Works

Foundation construction will commence after the completion of Shelburne Energy Farm site clearance and grading. The foundation installation will involve excavation, form work, steel reinforcement, and concrete placement. Foundations will be designed in accordance with the appropriate and relevant EirGrid Technical Specifications. Excavated material will either be reused on-site or disposed of off-site in accordance with applicable requirements under the Waste Management Act 1996, as amended and associated regulations.

When the foundations have been set, the copper earth mat will be installed into the soil in and around the foundation and will cover the entire substation compound. The earth mat installation and permitted operating limits will be designed in accordance with the appropriate and relevant EirGrid Technical Specifications.

Structural Steelwork Erection

Following the installation of the foundation and earth mat, construction activities will shift to the erection of structural steelwork. The GIS Building will be a steel portal two storey building over partial basement constructed in accordance with EirGrid technical specification. The ground floor level will include service rooms, loading bay, generator room, relay room, battery room and access to the cable basement area. The first-floor area of the building will be constructed to accommodate the 220kV switchgear assembly and a storeroom.

Cladding and Building Finishing Works

Cladding and building finishing works and the installation of building services, e.g. drainage, internal circulation road, will be undertaken once the structural frame and steel support structures are completed.

A fire detection and alarm system will be specified during the detail design of the substation in compliance with EirGrid requirements. A Fire Safety certificate application to Wexford County Council will be made in advance of construction in accordance with the standard approach for the construction of substations.

Miscellaneous Civil Works: Permanent Fencing and Completion of Works

Fencing around the entire substation compound, except for the site entrances, will comprise a 2.6m high palisade security fencing. The installation of this fencing will comprise root mounted posts (posts driven into ground). There will be negligible ground borne vibration due to relatively small diameter of these posts. This would negate the requirement for pad footings below each post.

Electrical Installation of GIS plant will be delivered to the substation compound and unloaded within the GIS building loading bay. The gantry crane located within the hoisting area will lift the GIS plant to the first storey of the building and position it appropriately within the GIS Equipment Room. The plant will then be bolted together in place. Following the installation of plant within the GIS building, wiring and cabling of GIS plant and associated protection and control cabinets will be undertaken to the specifications and standards set out by the manufacturer.

Drainage

The construction methodology will include the following materials and steps:

- Ensure safe excavation practices, including shoring or benching as required. Where dewatering is required, water will be treated and appropriately attenuated, before being discharged to vegetation or surface water drainage feature
- Conduct geotechnical surveys to assess soil type, soil permeability, bearing capacity, groundwater levels and contamination risk through site investigation.
- Surface water carrier pipes. Excavate pipe trenches to the specified depth, ensuring a minimum cover. Ensure trench base is flat and follows the designed slope. Fill the trench with bedding material below, around and above the pipe. Pipes shall be laid at specified design grade using approved methods. Ensure proper joint assembly. Backfill trenches in layers using suitable materials.
- Install inspection chambers at appropriate intervals for maintenance access. Regular inspection and maintenance is essential to prevent clogging and ensure long-term performance.
- Access ground conditions to determine the feasibility of implementing an infiltration system
- French drains. Excavate the trenches to the specified depth, ensure trench base is flat and follows the designed slope. Use a geotextile membrane to separate the trench from surrounding soil and prevent migration of fines. For non-infiltrating designs, use an impermeable liner to contain flow and direct it to downstream SuDS components. Install a perforated carrier pipe at the base of the filter drain trench. Backfill the trench/ French drain with clean, angular stone (Clause 505 Type B coarse and light weight aggregate to Table 5/5 MCDRW Series 500). Fill to within 150 mm of the surface. Top with crushed stone or gravel to match levels of adjacent surfacing.
- Access ground conditions to determine measures for the underground structures including oil / fuel interceptor, foul water holding tank to withstand earth pressure, hydrostatic pressure, and uplift forces. Excavate to the required depth, allowing for base slab thickness and working space. Ensure safe excavation practices, including shoring or benching as required. Dewater the excavation if groundwater is present. Install anti-floatation measures in high groundwater areas. Install formwork and reinforcement of the underground tank as per structural design. Install inlet/outlet pipework, access covers, and ventilation systems. Fit internal components such as baffles or pump chambers if specified. Perform water tightness testing to confirm integrity. Inspect structural elements, pipe connections, and access fittings. Backfill around the tank with suitable material in compacted layers. Restore surface finishes and ensure proper drainage away from the tank.
- Watermain pipe. Excavate pipe trenches to the specified depth, ensuring a minimum cover. Ensure trench base is flat and follows the designed slope. Fill the trench with bedding material below, around and above the pipe. Pipes shall be laid at specified design grade using approved methods. Ensure proper joint assembly. Install thrust blocks or mechanical joint restraints at bends, joints and valves. Install service connections, scour and air release valves as per design. Backfill trenches in layers using suitable materials.

To further reduce environmental impact:

- Weather conditions are to be considered when planning construction activities to minimise risk of run off from site.
- Appropriate containment facilities will be provided to ensure that any spills from vehicles are contained and removed off site. Use spill kits and follow pollution prevention protocols.
- Concrete or concrete contaminated water run-off will not be allowed to enter any watercourses, drainage channels and other surface water features.
- Welfare facilities will be provided within the designated construction compound for duration of works. All generated effluent will be contained in a sealed holding tank, which will be emptied and disposed of off-site by a licenced contractor. Water will be supplied to the site via tanker as required. No impacts on existing site conditions are anticipated.

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220kV Cable Connection

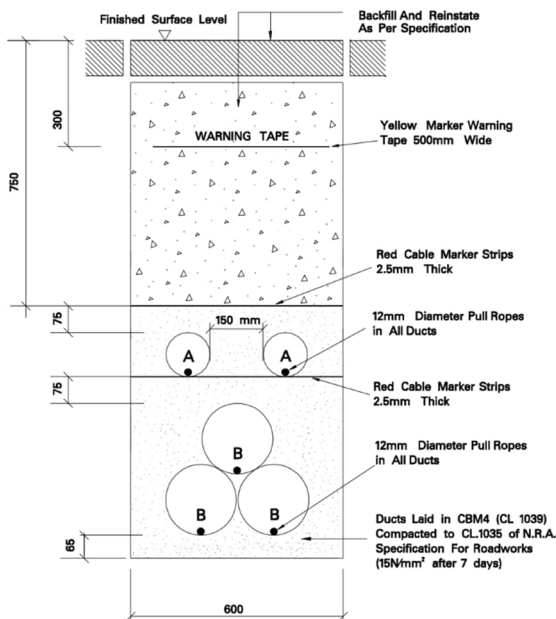
This section describes the proposed construction phase activities associated with the installation of the two proposed underground cables.

Subject to any grant of planning approval of the Grid Connection by An Coimisiún Pleanála there will be a process of pre-construction detailed design and micro-siting of the grid infrastructure. This will occur within the parameters and assessments of the approved development; any micro-siting which extends outside such parameters, for example outside the red line application area, will be subject to post-consent modification in accordance with the provisions of statutory legislation, as required. Throughout the design and assessment process, all reasonable and practically achievable measures have been taken to minimise and avoid impacts.

Trenching and Ducting

The standard trench dimensions for a single 220kV cable circuit in trefoil formation installed within an existing road is a width of 0.6m and a minimum depth of 1.45m. These cable trenches are to be installed on sections of the L40232 and L4030 on both sides of the road. Refer to Figure 2.5.

Figure 2-5: Standard Trefoil Arrangement Cross Section



Source: EirGrid PE424-D7001-019-001-000

The standard trench dimensions for a single 220kV cable circuit in trefoil formation installed on agricultural land is a width of 0.7m and a minimum depth of 1.75m, as per EirGrid drawing XDC-CBL-STND-F-016. These cable trenches are to be installed on the final section between the L4030 and the LCIM's.

Following excavation of the trench and bedding material, Cement Bound Granular Material (CBGM) will be laid, the ducts put in place, protection strips laid on top and the trench will be backfilled.

The duct installation will progress sequentially starting at one joint bay and moving towards the next joint bay along the route. The construction area will move in tandem with the progress of

the duct installation, with only the relevant portion of the section cordoned off while under construction.

If there are excavations required where there are existing utilities, hand digging and the use of smaller excavators may also be required.

For cross-country sections, a temporary working strip of approximately 37m in width is proposed. The working strip is required for the following reasons:

- To facilitate the storage of topsoil which must be removed from:
 - The footprint of the temporary construction access track (typically up to 5m in width).
 - The footprint of the cable trench.
 - A buffer strip between the temporary access track and the trench (for safety).
 - Subsoil storage area.
 - Materials storage areas.
- To facilitate the laying of the temporary construction access track alongside the cable trench to allow for the movement of construction equipment and materials along the section of the route on the farmland.
- To facilitate the excavation of the cable trench and the installation of the cable ducting.
- To facilitate the storage of distinct layers of subsoils excavated from the cable trench in segregated piles for later reinstatement to the original soil profile.

Approximately 30-50 m of trenching and ducting is completed in a day, dependent on conditions and location. Figure 5.6 illustrates a trench within agricultural lands.

Cable Installation and Jointing

The cables will be brought to site on cable drums which will then be placed into position. Once the drum is set up, a winch system at the remote joint bay location(s), including pulling cable, will be attached to the nose of the cable and rollers will be used to guide the cable end towards the duct. The cables will then be pulled into the duct with lubrication being applied to the cable and duct throughout the process in order to control pulling tensions.

A bend radius of typically 20m or greater is used to navigate changes in direction for the cable route. The bend radius can be reduced to 6m to navigate very tight corners however as this introduces increased pulling tensions when installing the cable, it is used sparingly and only where required.

As detailed previously, joint bays will be required to be installed along the cable route to join consecutive lengths of cable and to facilitate cable pulling.

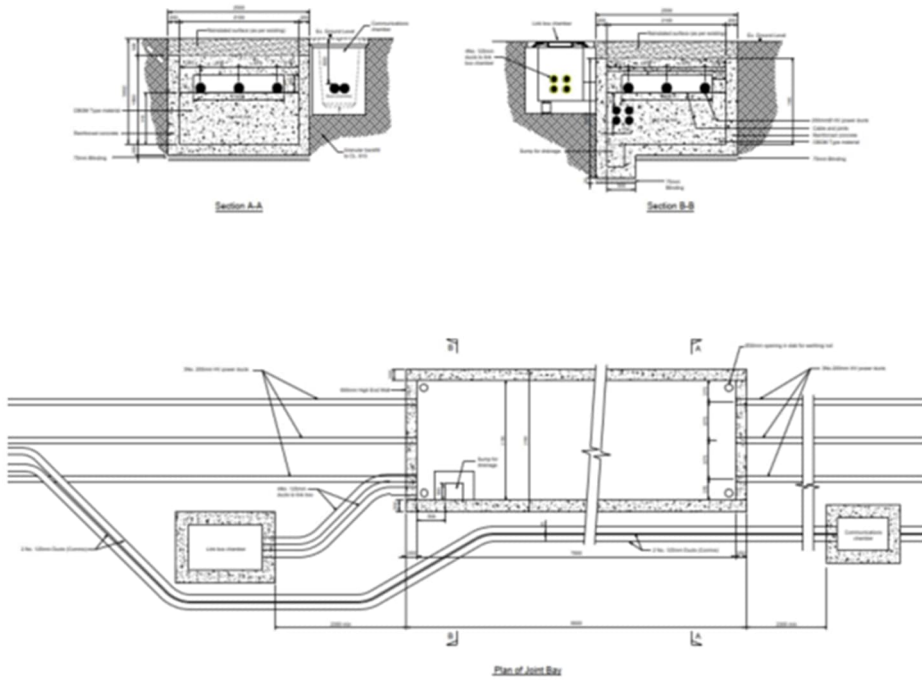
The width of the joint bays and the nature of the road network in the area means that partial road closures and diversions may be required in some areas along the route during cable installation. However, all reasonable and practically achievable measures, such as moving of equipment and placing temporary covers over the joint bays to allow essential access for vehicles, will be implemented to facilitate local access requirements for emergency services, residential and commercial purposes. Specific traffic management requirements and localised arrangements will be developed by the appointed contractor(s) and will be agreed in advance of implementation with the appropriate local authority.

Joint bays generally consist of precast concrete walls and base located below ground with typical approximate dimensions of 8m length x 2.5m width x 2.3m depth for 220kV joint bays. The length of the joint bays may be longer subject to the requirements of the cable manufacturer. Sand or lean mix concrete will be used as required as a blinding layer to the underside of the chamber. The ducts will be installed to each end of the chamber, then proven,

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cleaned and sealed. Figure 2.6 illustrates an indicative joint bay; Figure 2.7 illustrates a pre-cast joint bay and Figure 2.8 illustrates the cable pulling set up.

Figure 2-6: Indicative Joint Bay



Source: Mott MacDonald

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Figure 2-7: Pre-cast Joint Bay prior to Cable Installation



Figure 2-8: Typical Set-Up of HV Cable Pulling Procedure



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High Voltage transmission crossings

Crossing underneath overhead power lines will require mitigation during the construction phase ensuring that a suitable distance from the cabling is maintained by construction equipment and staff, and staff welfare and safety is maintained.

Connection to Great Island - Lodgewood 220kV circuit

The two underground cables will connect to the national transmission network via two separate LCIM connections. An example of an LCIM is shown in Figure 2.9.

Figure 2-9: Line Cable Interface Mast (LCIM)



Both underground cables will be jointed to a conductor on a newly constructed LCIM from which they will connect to the Great Island and Lodgewood substations via an existing overhead line.

From the Great Island and Lodgewood substations there will be connection to the wider existing grid network.

The installation of the underground cable is expected to take approximately 15 months.

Dismantling of existing 220kV tower

A single existing 220kV steel tower carrying the conductor for the Great Island – Lodgewood transmission circuit in the townland of Nash, will be required to be dismantled as part of the Proposed Project. The following details the construction methodology for its removal.

- Set up of temporary working area with fencing installed around the tower location.
- Removal of overhead line conductors – This involves releasing the line tension and winching of conductors onto drums.
- Removal of hardware and insulators – Using Mobile Elevating Work Platforms the fittings and hardware such as spacers, dampers and insulators will be removed from the towers.
- The towers will be dismantled and lowered in sections using a suitably sized crane and removed from site to an approved recycling facility.

- Using an excavator and a rock breaker if required, the tower will be dismantled to shear block level, the concrete base will be left in-situ.
- Material from the dismantled overhead line infrastructure will be removed from the site for recycling to a licensed recycling facility.

2.4.4.4 Construction Schedule

Construction of the Proposed Project is expected to take ca. 21-23 months, and is anticipated to commence in 2027, subject to grant of planning permission. An indicative schedule for each element is set out in Table 2.2.

Table 2-2: Project Construction Schedule

Construction Activity	Approximate Duration (weeks or months as appropriate)
GIS Substation Compound	
Site Preparation	3 -4 months
Civil Works	5 months
Electrical works	4 – 5 months
Energisation	2 months
Total	14 - 16 months
220kV Cable Connection	
Pre-construction	2 months
Civil Works	5 - 6 months
Electrical works	5 - 6 months
Commissioning	1 month
Joint Bay re-instatement	1 month
Total	14 - 16 months
Solar PV farm	
Civil works	6 months
Mechanical works	6 months
Electrical works	6 months
Commissioning	3 months
Total	12 - 18 months
BESS	
Site Clearance and enabling works	2 - 3 months
Civil works	3 - 4 months
Electrical Installation	3 months
BESS container installation	2 months
Commissioning and testing	2 months
Total	12 -14 months
Overall Construction Phase Timeframe	21 – 23 months

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Table 2-3: Construction Timeline

Construction Programme	Year 1				Year 2			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Substation compound	█	█	█	█	█			
220kV Cable connection		█	█	█	█	█		
Solar farm			█	█	█	█	█	
BESS				█	█	█	█	█

2.4.4.5 Construction Personnel

The total number of construction staff on-site will vary during the construction phase of the works but are expected to reach a weekly peak at ca.130 persons. It has been assumed that construction personnel will travel to site using van/minibus or private passenger vehicle (in some cases accommodating more than one occupant).

2.4.4.6 Hours of Work

Construction activities will be undertaken during 07:00 – 19:00 Monday to Friday and 08:00 – 14:00 on Saturday, subject to agreement with Wexford County Council and An Coimisiún Pleanála respectively.

No construction works will take place outside these hours, unless such work:

- is required under exceptional circumstances; or
- is carried out with the prior written approval of Wexford County Council.

2.4.4.7 Construction Access

All construction traffic will arrive via the regional roads R735 and R754 and the local tertiary roads to the north (L4030 and L40232), east, (L4030) and south (L-8141-1 and L-8141-2).

The main construction access for the Proposed Project is site access number located in Array Area A and access via the L40232. Construction site access will not be undertaken to the east of site access no.3 to ensure that construction traffic does not utilise the L-80591-1. In order to access parcel 10 located in the north eastern corner of the Project site a temporary construction access will be provided in parcel 8 to provide direct access to site.

Site entrances have a minimum width of 4.50m with 12.50m turning radius are provided to account for HGVs entering the site.

2.4.4.8 Construction Traffic

It is conservatively assumed that the average vehicle occupancy for construction personnel travelling to/from the study area (i.e. to/from a home location) will be 1.25 persons. This will result in an additional 70 additional vehicles (140 additional movements) using the surrounding road network on a daily basis during the period of peak construction.

It is anticipated that the peak daily number of HGVs required to facilitate construction activity will be 80, resulting in a maximum of 62 additional HGV movements for proposed construction works.

It is understood that there will be a requirement for the movement of abnormal loads (for the proposed GIS/AIS substation equipment) during the construction phase of proposed development works. The assessment of abnormal loads is presented in Chapter 14 Roads, Traffic and Transportation.

2.4.4.9 Temporary Construction Compounds/Laydown Areas

A temporary construction compound is proposed in each Array Area – A, B and C. The main temporary construction compound and laydown area will be located in Array Area A, and will include the construction staff parking area. This temporary construction compound will be utilised during all stages of the construction programme for the Proposed Project.

The temporary construction compounds in Area B and C are limited in their spatial extent, measuring 2700sqm (30m by 90m).

The location of the temporary compound/laydown areas is indicated on drawing 229101532-MMD-01-XX-DR-C-1012.

The appointed contractor(s) will be responsible for organising site compounds in consultation with the Environmental Manager or Ecological Clerk of Works (ECoW).

In areas where the potential temporary construction compounds are not currently hardstanding, the ground will be stripped and levelled and replaced with hardstanding. The ground will be reinstated to its original condition following the proposed works.

The Contractor's Environmental Manager will be responsible for the management of the site compounds in accordance with the CEMP. The contractor's compounds will be used for storage of construction materials, as well as construction equipment and machinery.

The contractor will ensure that the proposed compound is secured, either with existing hedgerows/treelines, or new palisade fencing.

2.4.4.10 Construction Environmental Management Plan (CEMP)

A CEMP has been prepared and submitted as part of this planning application. The CEMP will be implemented during the construction phase in consultation with Wexford County Council. The CEMP will remain a 'live' document which will be reviewed regularly and revised as necessary in consultation and agreement with the local authority to ensure that the measures implemented are effective.

The CEMP will be a key contract document, which will ensure that all mitigation measures, which are considered necessary to protect the environment are implemented. The primary objective of the CEMP is to safeguard the environment, site personnel and nearby sensitive receptors from site activity which may cause harm or nuisance. As such, the CEMP sets out a project framework to ensure that key mitigation measures and conditions set out as part of the planning consent process are translated into measurable actions and are appropriately implemented during the construction phase of the proposed development. As part of this framework, transparent and effective monitoring of the receiving environment during construction will be used to inform and manage on-going activities on site and to demonstrate effectiveness of the measures outlined therein.

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Resource and Waste Management Plan (RWMP)

Prior to commencement of the development, the appointed Contractor will implement the construction phase Resource and Waste Management Plan (RWMP) (included as Appendix A to the CEMP) which will ensure that optimum levels of waste prevention, reduction, reuse, recycling, and recovery are achieved throughout the duration of the proposed development. As with the CEMP, the RWMP will remain a 'live' document and will be reviewed regularly and revised as necessary in consultation and agreement with Wexford County Council to ensure that the measures implemented are effective.

The plan has been prepared in accordance with waste management guidance and principles as outlined in *Best practice guidelines for the preparation of resource & waste management plans for construction & demolition projects* (EPA, 2021) and *Design Out Waste: A design team guide to waste reduction in construction and demolition projects* (EPA, 2015). All operations at the site will be managed and programmed in such a manner as to prevent/minimise waste production and maximise upper tier waste management (i.e. reuse, recycle, and recovery) in line with the Waste Hierarchy where technically and economically feasible.

The requirement to develop, maintain and operate the construction phase RWMP will form part of the contract documents for the proposed development and will be updated by the appointed Contractor in advance of the commencement of construction activities on site. Waste sent off site for recovery or disposal will only be conveyed by an authorised waste contractor and transported from the proposed development site to an authorised site of recovery/disposal in a manner which will not adversely affect the environment. All employees will be required to comply with the obligations under this RWMP.

Traffic Management Plan (TMP)

The appointed Contractor will implement and develop the Traffic Management Plan (TMP) during construction phase, in ongoing consultation with Wexford County Council. A TMP is included as Appendix B to the Construction Environmental Management Plan (CEMP) submitted as part of the planning application. The TMP will remain a 'live' document and will be reviewed regularly and revised as necessary in consultation and agreement with Wexford County Council to ensure that the measures implemented are effective.

The implementation of the TMP will mitigate potential construction traffic impacts on the public road network. All construction activities, including construction traffic, will be managed through the CEMP.

Environmental Supervision and Monitoring

An Environmental Manager will be employed by the Contractor to oversee implementation of mitigation. The Environmental Manager will be a suitably qualified, competent and experienced professional to perform the necessary tasks, review environmental procedures and consult with the members of the construction team and stakeholders as required. This will include monitoring and auditing the works and contractor programmes and works method statements, to ensure mitigation is correctly implemented. For further detail on the role and responsibilities of the Environmental Manager, refer to the CEMP (submitted as part of this planning application).

An Ecological Clerk of Works (ECoW) will be employed by the Contractor to oversee implementation of mitigation measures. This will include monitoring and auditing the works and contractor programmes and works method statements, to ensure mitigation is correctly implemented.

The ECoW will be a full member of a relevant environmental institute, such as the Chartered Institute of Ecology and Environmental Management (CIEEM) and have demonstrable experience in ecological supervision.

The Contractor's ECoW will also ensure any disturbance licenses, if required are arranged based on relevant details outlined in the PECR. The Contractor's ECoW will advise on mitigation measures implementation including the scheduling of works and will be included in regular liaison meetings between project teams to ensure that plans are co-ordinated, and effects are minimised. For further detail on the role and responsibilities of the ECoW, refer to the CEMP.

All monitoring reports will be provided to the Employer's Representative team, and to the local authorities or other parties where required by condition.

In addition to the above, the CEMP includes an Emergency Incident Response Plan. In the unlikely event of an incident, the Emergency Incident Response Plan will ensure that any incident is dealt with effectively, and that the response is timely and appropriate. This plan will be further developed by the appointed Contractor, in line with the mitigation measures detailed in the CEMP, to describe the procedures, lines of authority and processes that will be followed to ensure that all incident response efforts are prompt, efficient and appropriate to the particular incident. Inland Fisheries Ireland and the EPA will be notified in the event of an incident or accident.

2.4.5 Operation and Maintenance

2.4.5.1 Solar Farm

During operations, the proposed solar farm will be monitored and operated remotely by a management team and will be visited regularly by security and/or maintenance personnel.

Maintenance activities associated with the solar farm will comprise the following:

- Supplementary grass cutting (only in identified areas where sheep grazing has not ensured that vegetation growth has been maintained)
- Preventative inspections and maintenance inspections (i.e identification of damage, where identified further visits will be undertaken, cleaning of panels as when required)
- Electricity meter readings
- Maintenance of drains, attenuation pond and security fencing
- Maintenance of access tracks, including grading, weed control, and surface repairs to maintain safe vehicle access
- Maintenance of hedgerows (where there is an obstruction of solar panels)

There is no waste generation or wastewater (foul) generation during the operational phase, as such there is no waste/wastewater collection required for the solar farm.

This will typically result on average of two visits every six months.

2.4.5.2 Battery Energy Storage System

During operations, maintenance of BESS follows a similar approach, but oriented to the particularities of BESS equipment, comprising mainly the following activities;

- Preventative inspections and maintenance checks (e.g. visual inspection of battery containers, PCS units, HVAC systems, and fire suppression equipment; follow-up visits for cleaning filters or replacing worn components as needed). Particularly, regular checks for corrosion, structural damage, door seals, and ventilation grilles to ensure weatherproofing and thermal performance.
- Energy meter readings and system performance logging (including verification of state-of-charge, round-trip efficiency, capacity and degradation, and inverter output)

- Clearing of vegetation or debris near air intakes, exhausts, and cooling units (to maintain thermal performance and prevent overheating risks)
- Grounding and earthing system verification: Periodic testing of grounding connections for all containers to maintain electrical safety and reduce fault risks.
- Maintenance of drains, attenuation pond and security fencing
- Maintenance of access tracks, including grading, weed control, and surface repairs to maintain safe vehicle access

2.4.5.3 Grid Connection

The GIS substation compound is expected to be operated remotely by EirGrid and maintained by ESB. Welfare facilities will be provided in the GIS substation for ESB personnel attending the site. Monthly attendance by a team of ESB technicians is anticipated. The GIS substation will require the maintenance of the foul holding tank.

The AIS substation compound will also be operated remotely and will require infrequent visits, which will be conducted on average once every six months.

There is no required maintenance activities related to the 220kV cable connection.

2.4.6 Decommissioning

2.4.6.1 Solar Farm

The decommissioning of the solar array areas involves ceasing all electrical output. All electrical works will be disconnected before the removal of any site equipment.

The site decommissioning and restoration plan will be executed in line with the environmental conditions of the Planning Permission.

Given the nature of the solar farm development and the small amount of infrastructure required, it is considered highly unlikely that any adverse effects would occur as a result of decommissioning works.

Following the decommissioning of the site the agricultural land will be restored to its original state. Should the access tracks be removed, the affected areas will be regraded, covered with topsoil, and seeded with an appropriate grass mixture .

2.4.6.2 Battery Energy Storage System

The decommissioning of the BESS site involves the safe cessation of all electrical output and the isolation of both AC and DC systems. All electrical works, including disconnection of grid interfaces, battery modules, and power conversion systems, will be completed prior to the removal of any equipment. A comprehensive lockout-tagout (LOTO) procedure will be followed to ensure safety during dismantling.

The site decommissioning and restoration plan will be carried out in accordance with the environmental conditions set out in the Planning Permission and relevant regulations in place at the time. Given the modular and containerised nature of BESS infrastructure, and the controlled handling of hazardous components such as lithium-ion batteries and fire suppression systems, no environmental impacts are expected to result from decommissioning activities.

Following the removal of all containers, cabling, and ancillary infrastructure, the site will be restored to its original condition. Where access tracks are removed, the affected areas will be regraded, covered with topsoil, and seeded with an appropriate grass mixture.

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All battery modules will be transported to licensed recycling or treatment facilities, with documentation retained to demonstrate compliance with end-of-life obligations.

2.4.6.3 Grid Connection

The design life of the GIS substation is approximately 40 years. It is expected that the substation site will remain a permanent part of the national electricity transmission network and will be refurbished and / or redeveloped as required rather than be decommissioned.

The AIS substation is expected to have a design life of 40 years. Where decommissioning takes place, all above-ground components associated with the substation will be disassembled and removed from the site and effects are likely to be similar or of a lesser magnitude than the construction effects.

2.4.7 Health and Safety Considerations

2.4.7.1 Project Supervisor for Design Phase

A Project Supervisor for the Design Phase (PSDP) will be appointed. The PSDP ensures co-ordination of the work of designers throughout the proposed development. This is to ensure effectiveness in addressing and co-ordinating safety and health matters from the very early stages of the proposed development.

2.4.7.2 Project Supervisor for the Construction Stage

A Project Supervisor for the Construction Stage (PSCS) will be appointed. The PSCS will be responsible for developing the construction stage Safety and Health Plan, co-ordinating the work of Contractors and providing PSDP with information required in the Safety File.

2.5 European Sites in the Zone of Influence

2.5.1 Introduction

In the context of an ecological impact assessment generally (CIEEM, 2018) the zone of influence (Zol) for a Proposed Development is defined as that:

“the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries” and that “the zone of influence will vary for different ecological features depending on their sensitivity to an environmental change.”

The Zol varies depending on the construction and operational activity and the sensitivity of the receptor (e.g., flora, birds, terrestrial mammals) to the effect encountered.

The Zol identified for various ecological receptors, having regard to the potential for impact as outlined previously are as detailed below:

- The footprint of the Proposed Development for direct damage to habitats
- No significant dust effects are likely based on the Proposed Development. However localised dust deposition may occur during construction. Dust effects to ecological receptors was identified as 50m based on guidance from the Institute of Air Quality Management¹⁶. As such, the Zol is taken as 50m for dust effects within this NIS.

¹⁶ Institute of Air Quality Management (2024) Guidance on the assessment of dust from demolition and construction.

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- 34m for high noise effects¹⁷ to wetland bird species, based on noise modelling carried out for similar overhead line refurbishment projects, which indicates that the noise levels drop to below 72dB within 34m of the proposed. This is based on worst case scenario noise effects associated with the installation of the new angle towers and new LCIMs. Noise levels will be below 55dBA (imperceptible levels) within 194m of the Proposed Development.
- 300m for visual disturbance to waterfowl¹⁸
- 150m for breeding otter holts¹⁹
- Catchment wide Zol for surface waterbodies
- 250m for groundwater dependant terrestrial ecosystems (GWDTEs)²⁰
- 8km for marsh fritillary (*Euphydryas aurinia*)²¹
- 1km for breeding raptors²²

No other mobile Qualifying Interest species are likely to be within the Zol.

2.5.2 Source Pathway Receptor and Impact Assessment

Projects have the potential to impact on European sites beyond the footprint of the project itself. National Guidance²³ states that screening for AA should be carried out for any European site within the likely Zol of a plan or project. For projects, the guidance recommends that Zol must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, the sensitivities of the ecological receptors, and the potential for in-combination effects.

In order to establish the Zol of the Proposed Development, desktop and field survey data on protected habitats and species was mapped using a Geographic Information System (GIS). The potential Zols associated with the project are outlined in Section 2.5.1. GIS data was then interrogated for source-pathway-receptor connectivity.

The source (potential impacts from the Proposed Development), pathways (hydrological, physical or ecological connectivity) and receptors (QIs and SCIs of the European sites) were identified through a combination of bespoke field survey, and desktop survey including use of GIS software and through examination of aerial photography. Having regard to these Zols, any European sites identified to have a viable source-pathway-receptor link to the Proposed Development were then examined further to determine the potential for significant effects.

The location of the application site boundary for the Proposed Development in relation to European sites is provided in Figure 2.10

¹⁷ Cutts, N., Phelps, A., & Burdon, D. (2009). Construction and waterfowl: Defining sensitivity, response, impacts and guidance. Report to Humber INCA by the Institute of Estuarine and Coastal Studies, University of Hull. EN (2003) The Humber Estuary European Marine Site: English Nature's advice given under Regulation, 33(2).

¹⁸ Cutts, N., Hemingway, K., Spencer, J., (2013) Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning and Construction Projects.

¹⁹ National Roads Authority (2006). Guidelines for the Treatment of Otters prior to the Construction of National Road Schemes.

²⁰ Kilroy G, Dunne F, Ryan J, O'Connor A, Daly D, Craig M, Coxon C, Johnston P and Henning M (2008). A Framework for the Assessment of Groundwater Dependent Terrestrial Ecosystems under the Water Framework Directive. Environmental Research Centre Report. Environmental Protection Agency Ireland.

²¹ Zimmermann K, Fric Z, Jiskra P, Kopeckova M, Vlasanek P, Zapletal M, Konvicka M (2011) Mark-recapture on large spatial scale reveals long distance dispersal in the Marsh Fritillary, *Euphydryas aurinia*. *Ecol Entomol* 36:499–510

²² Ruddock, M. and Whitfield, D.P. (2007). A Review of Disturbance Distances in Selected Bird Species. A Report from Natural Research (Projects) Ltd to Scottish Natural Heritage. Scottish Natural Heritage.

²³ Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government, 2009

Figure 2-10: European Site Locations relative to the proposed Development

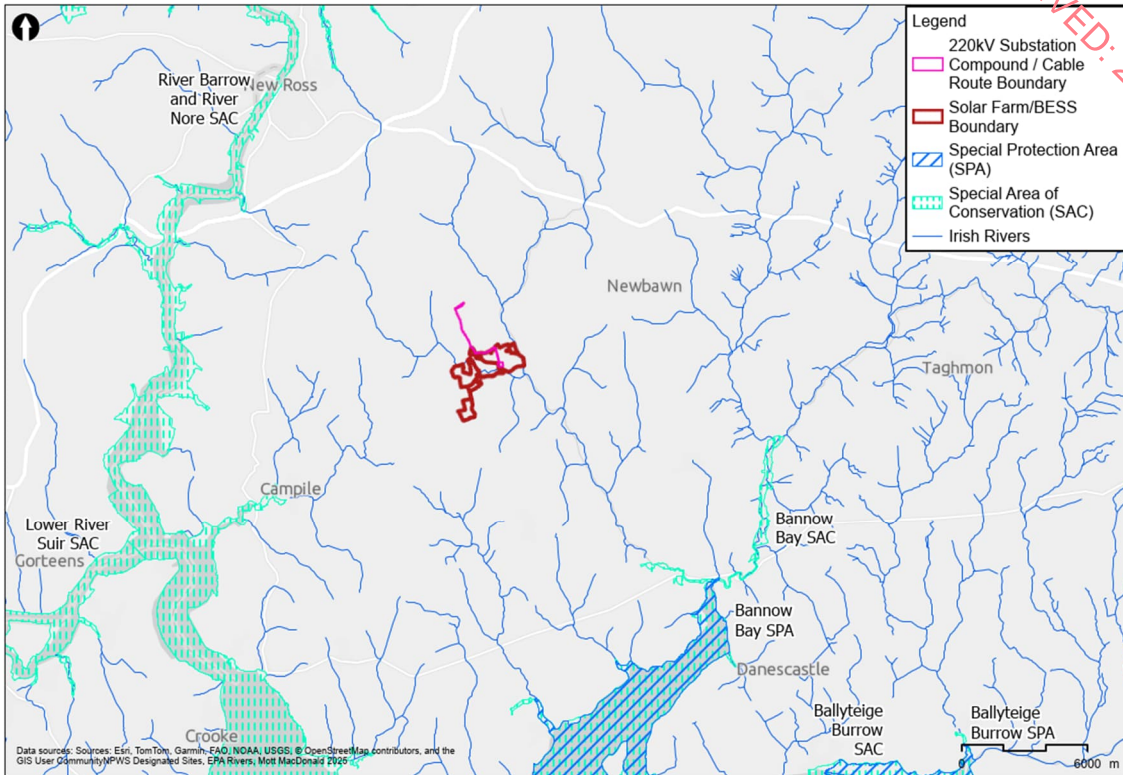


Table 2.4 below includes the source-pathway-receptor assessment for the Proposed Development. All European sites within the Natura 2000 network were considered in the course of compiling Table 2.5.

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Table 2-4: Source Pathway Receptor Assessment

Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Special Area of Conservation (SAC)			
River Barrow & River Nore SAC (002162) ²⁴	5.6km (direct distance)	<ul style="list-style-type: none"> • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Reefs [1170] • <i>Salicornia</i> and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260] • European dry heaths [4030] • <i>Hydrophilous</i> tall herb fringe communities of plains and of the montane to alpine levels [6430] • Petrifying springs with tufa formation (<i>Cratoneurion</i>)* [7220] • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)* [91E0] • Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>) [1016] 	<p>The Proposed Development is located a significant distance from the River Barrow and River Nore SAC with no downstream hydrological connectivity although it is within the same catchment area.</p> <p>Given the location of the SAC in relation to the Proposed Development, and the nature of the qualifying interests for which it is designated, no viable source pathway receptor links are identified, and therefore no potential for significant effects to this European site</p>

²⁴ NPWS (2011) Conservation Objectives: River Barrow and River Nore SAC 002162. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht. Cit

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Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Bannow Bay SAC (000697) ²⁵	8.1km (hydrological - river distance)	<ul style="list-style-type: none"> • Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) [1029] • White-clawed crayfish (<i>Austropotamobius pallipes</i>) [1092] • Sea lamprey (<i>Petromyzon marinus</i>) [1095] • Brook lamprey (<i>Lampetra planeri</i>) [1096] • River lamprey (<i>Lampetra fluviatilis</i>) [1099] • Twaité shad (<i>Alosa fallax fallax</i>) [1103] • Salmon (<i>Salmo salar</i>) [1106] • Otter (<i>Lutra lutra</i>) [1355] • Killarney fern (<i>Trichomanes speciosum</i>) [1421] • Nore pearl mussel (<i>Margaritifera durrovensis</i>) [1990] <ul style="list-style-type: none"> • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • <i>Salicornia</i> and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] 	<p>Owenduff River (EPA code: 13001) which flows immediately adjacent to the eastern side of the proposed development, and River Tellarought (EPA code: 13T14) which flows alongside the site boundary and through the Proposed Development boundary.</p> <p>The River Tellarought is a tributary which joins the River Owenduff 270m south of the proposed development before flowing south for a further 8.1km, into Bannow Bay SAC.</p> <p>It is considered highly unlikely that standard operations of the Proposed Development works will have any significant direct or indirect adverse effects on these QIs during either the construction or operation phase of this development given the distance to the site. However, given the hydrological link, on a precautionary basis a viable source pathway receptor link is identified based on potential additional pollution load in</p>

²⁵ NPWS (2012) Conservation Objectives: Bannow Bay SAC 000697. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

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Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Lower River Suir SAC (002137) ²⁶	10.2km (direct distance)	<ul style="list-style-type: none"> • Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) [1420] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes)* [2130] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260] • Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] • Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>)* [91E0] • <i>Taxus baccata</i> woods of the British Isles*[91J0] • Freshwater pearl mussel (<i>Margaritifera margaritifera</i>) [1029] • White-clawed crayfish (<i>Austropotamobius pallipes</i>) [1092] 	<p>rivers during construction and risk of toxic spill if a fire arises during operation phase that justify precautionary design mitigation.</p> <p>The Proposed Development is located a significant distance from the Lower River Suir SAC with no downstream hydrological connectivity.</p> <p>Given the location of the SAC in relation to the Proposed Development, and the nature of the qualifying interests for which it is designated, no viable source pathway receptor links are identified, and therefore no potential for significant effects to this European site.</p>

²⁶ NPWS (2017) Conservation Objectives: Lower River Suir SAC 002137. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs

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Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Ballyteige Burrow SAC (000696) ²⁷	14.3km (direct distance)	<ul style="list-style-type: none"> • Sea lamprey (<i>Petromyzon marinus</i>) [1095] • Brook lamprey (<i>Lampetra planeri</i>) [1096] • River lamprey (<i>Lampetra fluviatilis</i>) [1099] • Twaité shad (<i>Alosa fallax fallax</i>) [1103] • Salmon (<i>Salmo salar</i>) [1106] • Otter (<i>Lutra lutra</i>) [1355] <hr/> <ul style="list-style-type: none"> • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Coastal lagoons* [1150] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) [1420] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes)* [2130] 	<p>The Proposed Development is located a significant distance from the Ballyteige Burrow SAC with no downstream hydrological connectivity.</p> <p>Given the location of the SAC in relation to the Proposed Development, and the nature of the qualifying interests for which it is designated, no viable source pathway receptor links are identified, and therefore no potential for significant effects to this European site.</p>

²⁷ NPWS (2014) Conservation Objectives: Ballyteige Burrow SAC 000696. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

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Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Hook Head SAC (000764) ²⁸	18km (hydrological distance)	<ul style="list-style-type: none"> Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>)* [2150] Humid dune slacks [2190] Large shallow inlets and bays [1160] Reefs [1170] Vegetated sea cliffs of the Atlantic and Baltic coasts[1230] <i>Tursiops truncatus</i> (common bottlenose dolphin) [1349] <i>Phocoena phocoena</i> (harbour porpoise) [1351] 	<p>The Proposed Development is located a significant distance from the SAC boundary. A hydrological link has been identified to the SAC via the River Owenduff (EPA code: 13001) which flows immediately adjacent to the eastern side of the proposed development, and River Tellarought (EPA code: 13T14) which flows alongside and through the proposed development boundary.</p> <p>The River Tellarought is a tributary which joins the River Owenduff 270m south of the proposed development before flowing south for a further c.a. 9.6km, into Hook Head SAC.</p> <p>Given the total hydrological distance (c.a. 18km) to the SAC from the proposed development, and the marine nature of the Qis (relatively insensitive to effects of possible diluted pollutants), no viable source pathway receptor links are identified to these habitats.</p>
Special Protection Areas (SPA)			
Bannow Bay SPA (004033) ²⁹	8.4 (hydrological – river distance)	<ul style="list-style-type: none"> Light-bellied brent goose (<i>Branta bernicla hrota</i>) [A046] Shelduck (<i>Tadorna tadorna</i>) [A048] Pintail (<i>Anas acuta</i>) [A054] Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Golden plover (<i>Pluvialis apricaria</i>) [A140] Grey plover (<i>Pluvialis squatarola</i>) [A141] Lapwing (<i>Vanellus vanellus</i>) [A142] Knot (<i>Calidris canutus</i>) [A143] 	<p>The Proposed Development is located a significant distance from the Bannow Bay SPA. A hydrological link has been identified to the SPA via the River Owenduff (EPA code: 13001) which flows immediately adjacent to the eastern side of the proposed development (POC Lands), and River Tellarought (EPA code: 13T14) which flows alongside (POC Land) and in places within (Tina Noonan Lands) the proposed development boundary.</p> <p>There is potential for SCI species to occur outside of the SPA boundary. However, the footprint of the Proposed Development has not been identified as an ex-situ foraging, roosting or breeding area for any SCI species based on desk and field surveys conducted for the project.</p>

²⁸ NPWS (2011) Conservation Objectives: Hook Head SAC 000764. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

²⁹ NPWS (2012) Conservation Objectives: Bannow Bay SPA 004033. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

RECEIVED: 22/09/2025

Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Seas off Wexford SPA (004237) ³⁰	12.1	<ul style="list-style-type: none"> • Dunlin (<i>Calidris alpina</i>) [A149] • Black-tailed godwit (<i>Limosa limosa</i>) [A156] • Bar-tailed godwit (<i>Limosa lapponica</i>) [A157] • Curlew (<i>Numenius arquata</i>) [A160] • Redshank (<i>Tringa totanus</i>) [A162] • Wetlands and Waterbirds [A999] 	<p>The River Tellarought is a tributary which joins the River Owenduff 270m south of the proposed development before flowing south.</p> <p>There is potential for pollutants (soil water runoff) to the Owenduff River during the construction phase and toxic materials could be released in the event of a fire in the absence of design and operational mitigation.</p> <p>Estuaries have poor dilution and there is a risk of localised effects on wintering birds in particular if toxic materials reach the SPA due to no specific mitigation.</p> <p>Given the hydrological connectivity, on a precautionary basis, a viable source pathway receptor link is identified based on potential additional pollution load in rivers during construction and operation phase that justify precautionary mitigation.</p>
		<ul style="list-style-type: none"> • Red-throated diver (<i>Gavia stellata</i>) [A001] • Fulmar (<i>Fulmarus glacialis</i>) [A009] • Manx shearwater (<i>Puffinus puffinus</i>) [A013] • Gannet (<i>Morus bassanus</i>) [A016] • Cormorant (<i>Phalacrocorax carbo</i>) [A017] • Shag (<i>Phalacrocorax aristotelis</i>) [A018] • Common scoter (<i>Melanitta nigra</i>) [A065] • Mediterranean gull (<i>Larus melanocephalus</i>) [A176] • Black-headed gull (<i>Chroicocephalus ridibundus</i>) [A179] • Lesser black-backed gull (<i>Larus fuscus</i>) [A183] 	<p>The Proposed Development is located a significant distance from the SPA boundary. A weak hydrological connectivity link has been identified to the SPA via the River Owenduff (EPA code: 13001) which flows immediately adjacent to the eastern side of the proposed development, and River Tellarought (EPA code: 13T14) which flows alongside (POC Land) and in places within (Tina Noonan Lands) the proposed development boundary.</p> <p>The River Tellarought is a tributary which joins the River Owenduff 270m south of the proposed development before flowing south for a further 19.3km, into Seas Off Wexford SPA in the Celtic Sea.</p> <p>There is potential for pollutants (soil water runoff) to the Owenduff River during the construction phase and toxic materials to be released in the event of a fire in the absence of design and operational mitigation.</p> <p>There is potential for SCI species to occur outside of the SPA boundary. However, the footprint of the Proposed</p>

³⁰ NPWS (2024) Conservation Objectives: Seas off Wexford SPA 004237. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

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Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
		<ul style="list-style-type: none"> Herring gull (<i>Larus argentatus</i>) [A184] Kittiwake (<i>Rissa tridactyla</i>) [A188] Sandwich tern (<i>Sterna sandvicensis</i>) [A191] Roseate tern (<i>Sterna dougalli</i>) [A192] Common tern (<i>Sterna hirundo</i>) [A193] Arctic tern (<i>Sterna paradisaea</i>) [A194] Little tern (<i>Sterna albigrons</i>) [A195] Guillemot (<i>Uria aalge</i>) [A199] Razorbill (<i>Alca torda</i>) [A200] Puffin (<i>Fratercula arctica</i>) [A204] 	<p>Development has not been identified as an ex-situ foraging, roosting or breeding area for any SCI species.</p> <p>The SCI species associated with the site are marine and will use habitats (sea) with huge and rapid dilution capabilities. Hence no risks are identified even in absence of design and operational pollution controls.</p> <p>Given the relatively distant location in relation to the Proposed Development and marine nature of the SPA no viable source pathway receptor links are identified, and therefore there is no potential for significant effects to this European site.</p>
Keeragh Islands SPA (004118) ³¹	14.5	<ul style="list-style-type: none"> Cormorant (<i>Phalacrocorax carbo</i>) [A017] 	<p>The Proposed Development is located a significant distance from the SPA boundary. A hydrological connectivity link has been identified to the SPA via the River Owenduff (EPA code: 13001) which flows immediately adjacent to the eastern side of the proposed development and River Tellarought (EPA code: 13T14) which flows alongside (POC Land) and in places within the proposed development boundary.</p> <p>The River Tellarought is a tributary which joins the River Owenduff 270m south of the proposed development before flowing south for a further 23.7km, into Keeragh Islands SPA in the Celtic Sea.</p> <p>There is potential for pollutants (soil water runoff) to the Owenduff River during the construction phase and toxic materials to be released in the event of a fire in the absence of design and operational mitigation.</p> <p>There is potential for SCI species to occur outside of the SPA boundary. However, the footprint of the Proposed Development has not been identified as an ex-situ foraging, roosting or breeding area for any SCI species.</p>

³¹ NPWS (2022) Conservation objectives for Keeragh Islands SPA [004118]. First Order Sitespecific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.

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Designated Site	Distance at Closest Point (km)	Qualifying Interest (QI) / Special Conservation Interest (SCI) *indicates priority habitat	Source-Pathway-Receptor
Ballyteige Burrow SPA (004020) ³²	14.7	<ul style="list-style-type: none"> • Light-bellied brent goose (<i>Branta bernicla hrota</i>) [A046] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Golden plover (<i>Pluvialis apricaria</i>) [A140] • Grey plover (<i>Pluvialis squatarola</i>) [A141] • Lapwing (<i>Vanellus vanellus</i>) [A142] • Black-tailed godwit (<i>Limosa limosa</i>) [A156] • Bar-tailed godwit (<i>Limosa lapponica</i>) [A157] 	<p>The SCI species associated with the site are marine and will use habitats (sea) with huge and rapid dilution capabilities. Hence no risks are identified even in absence of design and operational pollution controls.</p> <p>Given the location of the SPA in relation to the Proposed Development, and the nature of the qualifying interests for which it is designated, no viable source pathway receptor links are identified, and therefore no potential for significant effects to this European site</p> <p>The Proposed Development is located a significant distance from the Ballyteige Burrow SPA with no downstream hydrological connectivity.</p> <p>There is potential for SCI species to occur outside of the SPA boundary. However, the footprint of the Proposed Development has not been identified as an ex-situ foraging, roosting or breeding area for any SCI species.</p> <p>Given the distant location of the SPA in relation to the Proposed Development, and the nature of the qualifying interests for which it is designated, no viable source pathway receptor links are identified, and therefore no potential for significant effects to this European site</p>

³² NPWS (201x) Conservation Objectives: Ballyteige Burrow SPA 004020. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

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Likely significant effects arising from the “lake effect” can be excluded based on objective evidence.

2.6 Plans and Projects that May Act in Combination

Article 6(3) of the Habitats Directive requires that:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site’s conservation objectives.

It is therefore required that the potential impacts of the Proposed Development are considered in combination with any other relevant plans or projects.

177U.—(1) A screening for appropriate F918[assessment of a draft Land use plan or application for consent for proposed development] shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

An assessment of plans and projects with the potential for in combination effects in association with the Proposed Development was undertaken.

A search of planning applications³³ submitted within the last 5 years within 15km of the Proposed Development was undertaken in August 2025 to examine projects with potential for in combination effects. Five years is considered an acceptable timeframe for this search given the rural location, potential impacts identified for the project alone (pollution and hydrological connectivity to Bannow Bay) and relatively small scale and localised nature and extent of impacts associated with the proposed development. Applications which were made typically consisted of extensions, demolitions and renovations to existing houses and agricultural buildings, and retention of existing developments.

Given the location of these projects in outside European sites, and the Proposed Development and relatively small scale there is no potential for in-combination effects.

Other larger scale projects which were identified are outlined in Appendix A.

In the absence of mitigation, the potential for likely significant effects on European sites has been identified from the Proposed Development alone noting potential pollution risks of excessive soil water/ pollutant runoff to the Owenduff river during construction, and operational risks of toxic material runoff due to a fire type event.

No specific significant effects have been identified to any European sites from other plans or projects based on available information. However, it is noted that the Owenduff River (hydrologically connected to Bannow Bay SAC/SPA) is at Risk³⁴ from wider catchment pollution effects. Therefore, the importance of ensuring water quality risk is minimised from the project and precautionary mitigation outlined.

³³ Planning Websites: [Map Search | An Bord Pleanála \(pleanala.ie\)](#), <https://www.eplanning.ie/WicklowCC/searchtypes>

³⁴ [River Waterbodies RiskIE SE 13O010100. EPA Maps](#)

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2.7 Summary of Potentially Significant Effects

The proposed development is not directly connected with or necessary to the management of a European site and must therefore be assessed for the likelihood for significant effects i.e screened for the need to be subjected to Appropriate Assessment.

Table 2.5 provides a summary screening assessment of the proposed development.

Table 2-5: Screening Matrix of the Project (Development)

Project Plan	
Brief description of the project or plan	<p>The Proposed Project comprises a photovoltaic (PV) solar energy farm which is spilt into three distinct solar array areas - A, B and C, and a co-located Battery Energy Storage System (BESS), collectively referred to as Shelburne Energy Farm, and together occupying a total area of approximately 121.5 hectares. A grid connection is required to connect Shelburne Energy Farm to the national electricity grid, with a co-located 220kV substation compound within the energy farm, measuring approximately 0.72 hectares, with an associated underground cable connection which will connect to an existing overhead transmission circuit.</p> <p>The Proposed Project is located in the townlands of Ballygarvan, Cloonagh and Nash, Gusserane, County Wexford, as illustrated in Figure 5.1. The local area in which the Proposed Project will be situated is characterised as predominantly rural agricultural lands with low density residential properties occurring throughout the locality.</p> <p>The closest settlements include the town of New Ross located approximately 6.5km northwest, and the villages of Ballynaboola approximately 4.5km to the north, Newbawn 3.4km to the northeast and Ballycullane 3.5km to the south.</p> <p>The Proposed Project is predominantly within agricultural lands with field boundaries delineated by mature hedgerows, with some limited areas of semi-natural woodland in the east of the project site. The solar energy farm is divided into three distinct array areas, occurring on either side of the local public road - L4030, while the L40232 bounds solar array Area A to the north. The Owenduff River (EPA code: 13O01) bounds areas of the Project site to the east of solar array Area A, while the Tellarought river (EPA code: 13T14) is crossed by the inter-array cables connecting solar array Area B and C to solar array Area A and onwards to the future 220kV substation.</p>
Natura 2000 Site	
Brief description of the Natura 2000 site(s)	<p>The application site is located close to 9 European sites (Refer to Figure 3.4). These sites are considered the only European sites possibly within the Zone of Influence of the proposed development and re outlined as follows:</p> <ul style="list-style-type: none"> ● River Barrow & River Nore SAC ● Bannow Bay ● Lower River Suir SAC ● Ballyteige Burrow SAC ● Hook Head SAC ● Bannow Bay SPA ● Seas off Wexford SPA ● Keeragh Islands SPA ● Ballyteige Burrow SPA <p>The project has hydrological connectivity to the River Owenduff which is hydrologically linked to Bannow Bay SAC/ SPA downstream. Based on the desk and field surveys conducted the project does not support connectivity to any other European Sites.</p> <p>Nationally available data on protected habitats and species and hydrological pathways was mapped using Geographical Information Systems. This data plus aerial photography was interrogated for source-pathway-receptor connectivity</p>

RECEIVED: 22/09/2025

between the Project and European Sites. Winter bird surveys were conducted on the site to determine SCI bird usage of the site.

It was determined that the Bannow Bay SAC/SPA has the potential to be affected by the project due to its hydrological connectivity with the proposed development site (closest point being ca. 8.1km downstream following natural flow of the river). There is potential that uncontrolled surface water and pollutant runoff from the site during construction works could add pollution load within the overall Owenduff River catchment during construction and also potential for release of contaminated water during operation in the event of a fire, and further adversely affect particularly intertidal wetland habitats used by SCI birds.

Considering the location of the project site boundary and absence of connectivity (hydrological, physical or ecological), no source-pathway-receptor link was identified between the project site and any other European site.

Assessment Criteria

Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Natura 2000 site.

Construction Phase

- The Project will require vegetation clearance and excavation of lands to accommodate. Vegetation clearance and excavation activities can result in soil erosion, dust and runoff from site.
- Construction material such as concrete and hydrocarbons will be used on site during the construction phase. The release of construction pollution, in particular concrete, can be particularly harmful in aquatic environments where it can cause sudden change in alkalinity.
- The construction works will require use of heavy machinery which will cause an increase in noise levels in the locality. A temporary increase in noise levels within the site may result in disturbance to wildlife within the immediate vicinity of the site. However, no QIs of the River Barrow and River Nore SAC were identified within the immediate vicinity of the site during surveys.
- It is likely that construction lighting will be required during the construction works. Fugitive lighting can act to deter movement of species in the area.
- No potential for foul water will arise during construction as sewage will be taken off-site.

Operational Phase

- During the operational phase, there are no predicted direct noise impacts from the proposed development, noise levels will be minimal in light of the baseline noise levels in the area which are dominated by the M8/M7.
- No potential for foul water will arise as new facilities will tie into the existing town sewerage system.
- Permanent lighting is proposed. There will be an increase in artificial lighting when the compound is manned.
- The proposed new stormwater outfall will incorporate interceptors and silt traps in accordance with 'SuDs' standards and will discharge at the allowable greenfield run-off rate which will not result in any alteration of the Owenduff River hydrological regime.
- The proposed firewater storage is specific mitigation required for this site to prevent risk of contaminated water entering the Owenduff River and downstream European sites.

Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Natura 2000 site by virtue of:
Size and scale;
Land-take;
Distance from the Natura 2000 site or key features of the site;

- There will be no land take within the European site boundaries.
- Water and other resources will not be taken from the site.
- No impacts are predicted as a result of transportation.
- The construction phase work has the potential to result in the degradation of water quality in the River Owenduff which it outfalls into, due to runoff of sediment/construction pollution from the works area.
- The construction works have the potential to result in the disturbance of wildlife due to an increase in noise, lighting and visual disturbance locally but not in any European site.

Resource requirements
(water abstraction etc);
Emissions (disposal to land,
water or air);
Excavation requirements;
Transportation
requirements;
Duration of construction,
operation, decommissioning
etc;
Other.

Describe any likely changes
to the site arising as a result
of:
Reduction in habitat area;
Disturbance to key species;
Habitat or species
fragmentation;
Reduction in species
density;
Changes in key indicators of
conservation value (water
quality etc.);
Climate change.

- Degradation of water quality during the construction phase is likely to occur if mitigations are not in place.
- Vegetation clearance and excavation of lands to accommodate the works will increase soil erosion, dust and runoff from site resulting in increased sedimentation.
- Release of construction pollution may cause a sudden change in the chemical composition of the site e.g. change in alkalinity from concrete runoff.
- Operational discharge of contaminated water is possible in the absence of a suitable contaminated storage tank incorporated in the design and maintenance of same.
- Impacts to intertidal mud prey species of SCI birds due to excessive pollution loading or contamination affecting bird health and fitness.

Describe any likely impacts
on the Natura 2000 site as a
whole in terms of:
Interference with the key
relationships that define the
structure of the site;
Interference with key
relationships that define the
function of the site.

- Impacts to intertidal mud prey species of SCI birds due to excessive pollution loading or contamination affecting bird health and fitness.

Provide indicators of
significance as a result of
the identification of effects
set out above in terms of:
Loss;
Fragmentation;
Disruption;
Disturbance;
Change to key elements of
the site.

- A change in water quality due to pollution could have significant impacts on QI species in terms of temporary displacement, alteration of favourable condition for foraging SCI birds and degradation of habitat quality,

Describe from the above
those elements of the
project or plan, or
combination of elements,
where the above impacts
are likely to be significant or
where the scale or
magnitude of impacts is not
known

- A change in water quality due to pollution could have significant impacts on QI species in terms of temporary displacement, alteration of favourable condition for foraging SCI birds and degradation of habitat quality,

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2.8 Appropriate Assessment Screening Conclusion

The current assessment investigates the potential for the Proposed Development to have significant effects on the following European sites within the Natura 2000 network, alone and in combination with other plans or projects on the following projects which are relatively close and/or hydrologically connected to the proposed development:

- River Barrow & River Nore SAC
- Bannow Bay
- Lower River Suir SAC
- Ballyteige Burrow SAC
- Hook Head SAC
- Bannow Bay SPA
- Seas off Wexford SPA
- Keeragh Islands SPA
- Ballyteige Burrow SPA

This AA Screening report concludes that likely significant effects on the following European sites cannot be excluded on the basis of best scientific knowledge, from the Proposed Development alone, and in combination with other plans or projects:

- Bannow Bay SAC
- Bannow Bay SPA

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3 Natura Impact Statement

This Natura Impact Statement (NIS) has been produced in support of the Appropriate Assessment of the Proposed Development to be undertaken by the competent authorities. The NIS considers the likely or possible significant effects of the Proposed Development. Mitigation measures are identified to avoid adverse effects on the integrity of European sites.

3.1 Description of the Development

The development is described in detail in Section 2.4 of this report and includes;

- A description of Solar PV infrastructure in Section 2.4.1
- A description of Battery Energy Storage System (BESS) infrastructure in Section 2.4.2
- A description of Grid Connection infrastructure in Section 2.4.3
- Construction phase activities are outlined in Section 2.4.4
- Operational and maintenance phase activities are outlined in Section 2.4.5
- Decommissioning phase activities are outlined in Section 2.4.6

3.2 Description of the Receiving Environment

The baseline environment as relevant to Appropriate Assessment is detailed in Section 2.3.

In summary based on desk and field surveys conducted the site is not used by significant numbers of ex situ wintering birds and does not have supporting habitat for any European site possibly within the Zone of Influence of the proposed development.

3.2.1 European Sites

Viable source pathway receptor links were identified to the following European sites:

- Bannow Bay SAC (000697)
- Bannow Bay SPA (004033)

3.2.1.1 Bannow Bay SAC (000697)

The site synopsis for Bannow Bay SAC³⁵ describes the site as: “... a large, very sheltered, estuarine system with a narrow outlet to the sea, situated on the south coast of Co. Wexford. It is up to 14 km long along its north-east/south-west axis and has an average width of about 2 km. A number of small- to medium-sized rivers flow into the site, the principal being the Owenduff and the Corock which enter at the top end of the estuary. Very extensive intertidal mud and sand flats are exposed at low tide.”

The Natura 2000 Standard Data Form for the Bannow Bay SAC³⁶ identified the following most important impacts and activities with negative effect on the site:

- Discharges
- Disposal of household / recreational facility waste
- Erosion
- Intensive fish farming, intensification
- Off-road motorized driving
- Bait digging / collection
- Dumping, depositing of dredged deposits
- Invasive non-native species
- Paths, tracks, cycling tracks
- Removal of beach materials
- Removal of sediments (mud...)
- Forest planting on open ground

The Proposed Development will not involve any of the activities outlined above.

The QIs for which the SAC is designated, the conservation objectives identified for the QIs, and their current national conservation status and trend are outlined in Table 3.1.

Table 3-1: Qualifying Interests for Bannow Bay SAC

Qualifying Interest (*indicates priority habitat)	Conservation Objective ³⁷	National Conservation Status and Trend ^{38,39}
Estuaries [1130]	To maintain the favourable conservation condition of Estuaries in Bannow Bay SAC	The overall conservation status for the habitat is inadequate and the conservation status trend is deteriorating .
Tidal Mudflats and Sandflats not covered by seawater at low tide [1140]	To maintain the favourable conservation condition of Mudflats and sandflats not covered by	The overall conservation status for the habitat is inadequate and the

³⁵ NPWS (2014) Site Synopsis Bannow Bay SPA Site Code 004033

³⁶ <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0000697>

³⁷ NPWS (2012) Conservation Objectives: Bannow Bay SAC 000697. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht

³⁸ NPWS (2019) Article 17 Habitats Conservation Assessments 2019 Volume 2

³⁹ NPWS (2019) Article 17 Species Conservation Assessments 2019 Volume 3

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Qualifying Interest (*indicates priority habitat)	Conservation Objective ³⁷	National Conservation Status and Trend ³⁸³⁹
	seawater at low tide in Bannow Bay SAC	conservation status trend is deteriorating .
Annual vegetation of drift lines [1210]	To maintain the favourable conservation condition of annual vegetation of drift lines in Bannow Bay SAC	The overall conservation status for the habitat is inadequate and the conservation status trend is stable .
Perennial vegetation of stony banks [1220]	To maintain the favourable conservation condition of perennial vegetation of stony banks in Bannow Bay SAC	The overall conservation status for the habitat is inadequate and the conservation status trend is stable .
Salicornia and other annuals colonising mud and sand [1310]	To restore the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Bannow Bay SAC	The overall conservation status for the habitat is favourable and the Conservation Status trend is stable .
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	To restore the favourable conservation condition of Atlantic salt meadows (<i>Glauco - Puccinellietalia maritimae</i>) in Bannow Bay SAC	The overall conservation status for the habitat is inadequate and the Conservation Status trend is deteriorating .
Mediterranean salt meadows (<i>Juncetalia maritim</i>) [1410]	To restore the favourable conservation condition of Mediterranean salt meadows (<i>Juncetalia maritim</i>) in Bannow Bay SAC	The overall conservation status for the habitat is inadequate and the Conservation Status trend is deteriorating .
Mediterranean and thermos-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) [1420]	To restore the favourable conservation condition of Mediterranean and thermo - Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) in Bannow Bay SAC	The overall conservation status for the habitat is bad and the Conservation Status trend is deteriorating .
Embryonic shifting dunes [2110]	To restore the favourable conservation condition of embryonic shifting dunes at Bannow Bay	The overall conservation status for the habitat is inadequate and the conservation status trend is stable .
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	To restore the favourable conservation condition of shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) in Bannow Bay SAC	The overall conservation status for the habitat is inadequate and the conservation status trend is stable .
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	To restore the favourable conservation condition of fixed coastal dunes with herbaceous vegetation (grey dunes) in Bannow Bay SAC	The overall conservation status for the habitat is bad and the Conservation Status trend is deteriorating .

The known extents of a number of the QIs of the Bannow Bay SAC, have been mapped in the Site-Specific Conservation objectives or referenced in the site synopsis. The closest extents of these QIs inside of the SAC as mapped in the conservation objectives are outlined in Table 3.2 hereunder:

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Table 3-2: Qualifying Interests for Bannow Bay SAC

Qualifying Interest (* indicates priority habitat)	Known Location in Relation to the Proposed Development
Estuaries [1130]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 6.6km southeast of the proposed development. Downstream hydrological connectivity to this habitat is identified.
Tidal mudflats and sandflats not covered by seawater at low tide [1140]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 8.4km southeast of the proposed development. Downstream hydrological connectivity to this habitat is identified.
Annual vegetation of drift lines [1210]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 11.4km south of the proposed development.
Perennial vegetation of stony banks [1220]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 11.5km south of the proposed development.
Salicornia and other annuals colonising mud and sand [1310]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 8.3km southeast of the proposed development.
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 8.3km southeast of the proposed development.
Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 8.3km southeast of the proposed development.
Mediterranean and thermos-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>) [1420]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 11.7km south of the proposed development.
Embryonic shifting dunes [2110]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 11.3km south of the proposed development.
Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 11.4km south of the proposed development.
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	The site is non marine, and this habitat does not occur. The closest mapped extent for this habitat is located 11.8km south of the proposed development.

As outlined above the site does not have potential for any of these habitats to occur as they are associated with marine environments.

There is, however, the potential for impact to wetland habitat via a hydrological link from possible pollution runoff from the site.

3.2.1.2 Bannow Bay SPA (004033)

This site synopsis⁴⁰ for Bannow Bay SPA describes the site as a large, very sheltered, estuarine system with a narrow outlet to the sea, situated on the south coast of Co. Wexford. It is up to 14 km long along its north-east/south-west axis and has an average width of about 2 km. A number of small- to medium-sized rivers flow into the site, the principal being the Owenduff and the Corock which enter at the top end of the estuary. Very extensive intertidal mud and sand flats are exposed at low tide. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: light-bellied brent goose,

⁴⁰ <https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004033.pdf>

RECEIVED: 22/09/2025

shelduck, pintail, oystercatcher, golden plover, grey plover, lapwing, knot, dunlin, black-tailed godwit, bar-tailed godwit, curlew and redshank. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for wetland & waterbirds.

The Natura 2000 Standard Data Form for the Bannow Bay SPA⁴¹ identified the following most important impacts and activities with high negative effect on the site:

- Dispersed habitation
- Fertilisation
- Grazing
- Marine and Freshwater Aquaculture
- Hunting
- Outdoor sports and leisure activities, recreational activities
- Roads, motorways

The impacts and activities as outlined above will not arise from the Proposed Development.

The SCIs for which the SPA is designated, the conservation objectives identified for the SCIs, and their current national conservation status and trend are outlined in Table 3.3.

Table 3-3: Special Conservation Interests for Bannow Bay SPA

Special Conservation Interests	Conservation Objective ²⁹	Population Change ⁴²
Light-bellied brent goose (<i>Branta bernicla hrota</i>) [A046]	To maintain the favourable conservation condition of Light-bellied Brent Goose in Bannow Bay SPA	The ten year population change shows a decrease in population.
Shelduck (<i>Tadorna tadorna</i>) [A048]	To maintain the favourable conservation condition of Shelduck in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Pintail (<i>Anas acuta</i>) [A054]	To maintain the favourable conservation condition of Pintail in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]	To maintain the favourable conservation condition of Oystercatcher in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Golden plover (<i>Pluvialis apricaria</i>) [A140]	To maintain the favourable conservation condition of Golden Plover in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Grey plover (<i>Pluvialis squatarola</i>) [A141]	To maintain the favourable conservation condition of Grey Plover in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Lapwing (<i>Vanellus vanellus</i>) [A142]	To maintain the favourable conservation condition of Lapwing in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Knot (<i>Calidris canutus</i>) [A143]	To maintain the favourable conservation condition of Knot in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Dunlin (<i>Calidris alpina</i>) [A149]	To maintain the favourable conservation condition of Dunlin in Bannow Bay SPA	The twelve year population change shows a decrease in population.

⁴¹ <https://natura2000.eea.europa.eu/natura2000/SDF.aspx?site=IE0004033>

⁴² Lesley Lewis, Brian Burke, Niamh Fitzgerald, David Tierney and Seán Kelly Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10 – 2015/16

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Special Conservation Interests	Conservation Objective ²⁹	Population Change ⁴²
Black-tailed godwit (<i>Limosa limosa</i>) [A156]	To maintain the favourable conservation condition of Black-tailed Godwit in Bannow Bay SPA	The twelve year population change shows an increase in population.
Bar-tailed godwit (<i>Limosa lapponica</i>) [A157]	To maintain the favourable conservation condition of Bar-tailed Godwit in Bannow Bay SPA	The twelve year population change shows a slight increase in population.
Curlew (<i>Numenius arquata</i>) [A160]	To maintain the favourable conservation condition of Curlew in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Redshank (<i>Tringa totanus</i>) [A162]	To maintain the favourable conservation condition of Redshank in Bannow Bay SPA	The twelve year population change shows a decrease in population.
Wetland and Waterbirds [A999]	To maintain the favourable conservation condition of the wetland habitat in Bannow Bay SPA as a resource for the regularly - occurring migratory waterbirds that utilise it	Not applicable

The known extents of a number of the SCIs of the Bannow Bay SPA, have been mapped in the Site-Specific Conservation objectives or referenced in the site synopsis. It is of note that some species may extend beyond and occur outside the European site boundary as they utilise riverine corridors. As outlined previously, wintering bird surveys did not identify any SCI species within the Zol of the Proposed Development, also refer to Section 2.3.1.

There is, however, the potential for impact to wetland habitat via a hydrological link from possible pollution runoff from the site.

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3.3 Impact Prediction

The layout of the section is such that the overarching potential for impact types is outlined first initially and in greater detail in Section 3.3.1. Site impacts to specific European sites are then outlined in Section 3.4.

3.3.1 Construction Phase Impact Types

The potential for impacts to each European site is outlined in the relevant section hereunder. In-combination effects are provided in Section 3.3.7. Where the potential for impact is identified this is assessed against the conservation objectives below.

3.3.1.1 Direct Impact to Qualifying Interests/Special Conservation Interests

No works are proposed within the boundary of the Bannow Bay SAC or SPA. No QI habitats or supporting habitat for same was recorded within the Zol for Direct Impact. As such, no potential for direct impacts was identified.

3.3.1.2 Noise, Vibration and Visual Disturbance

Construction phase of the Proposed Development will result in locally elevated noise levels associated with the Proposed Development. The proposed development is not located within the boundaries of any European site and as such there are no direct disturbance impacts expected to occur to QI/SCI habitats or features. No records or evidence of *ex situ* SCI waterfowl bird species for the Bannow Bay SPA have been observed on site or within the Zol of the proposed development for noise. As such, there is no potential for impacts to European sites as a result of noise, vibration, or visual disturbance.

3.3.1.3 Pollution/Sedimentation Associated with Construction

Vegetation clearance and excavations have potential to pose a risk to surface water quality through surface water run-off and the release of sediment laden waters into watercourses. Ground damage from construction vehicles and machinery has potential to cause rutting and increased erosion of soils. Access tracks used during construction may additionally alter surface run-off patterns, creating alternative flow paths, promoting erosion.

The Proposed Development site is hydrologically linked to the SAC and SPA with the proposed works on site requiring earthworks to facilitate the proposed development consisting of excavations up to 1.5m and breaking out of hardstanding areas which will increase dust production on site as well as increase the risk of silt and sediment production on site which could enter into the Owenduff River, via surface water run off entering the Tellarought River, which are hydrologically connected to the Bannow Bay SAC and SPA via a tenuous hydrological network link. There is potential, therefore, for additional generation of sediment laden water associated with the construction phase of the works.

Works will require the general use of concrete which carries the potential for accidental release or spill of concrete as well as accidental spill or leaks from concrete water from washout areas due to the Tellarought River flowing through the proposed development site which is a tributary of the Owenduff River that is hydrologically connected to the Bannow Bay SAC and SPA.

The potential for impacts to specific QIs/SCIs caused by pollution and sedimentation caused by the works is discussed below in Section 3.3.2 in the context of each European site.

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3.3.1.4 Dust

The proposed construction works will include excavation activities, stripping of soil and the storing of spoil material. Breaking out of surfaces may also be required. All activities have the potential to result in the generation of dust over the duration of the construction works.

As outlined previously the Zol of dust is taken to be 50m from the proposed works. While the proposed development works are not within the boundaries or close proximity of the identified European sites, there is potential for dust to be deposited within European sites where works are proposed within or in close proximity to nearby identified watercourses which are hydrologically linked to the Bannow Bay SAC and SPA.

The deposition of dust into a watercourse can increase suspended solid content of the watercourse which can result in a degradation of water quality and aquatic vegetation downstream. These sediments can become remobilised and traverse long distances downstream. There is potential therefore, in the absence of mitigation for impacts to the Bannow Bay SAC and SPA from pollution runoff including dust.

The potential for impacts to specific QIs/SCIs caused by dust caused by the works is discussed below in Section 3.3.2 in the context of each European site.

3.3.2 Effect Pathways During Construction

3.3.2.1 Bannow Bay SAC (000697)

There is no potential for direct impact to Bannow Bay SAC or QIs thereof associated with the Proposed Development.

As outlined previously, there is potential for the release of surface-water emissions concrete, and sediment laden water into watercourses with connectivity into the SAC. Likewise, dust emissions may be deposited into adjacent watercourses and mobilised downstream over time. Given the location of estuary and mudflat and sand flat habitat with downstream hydrological connectivity to the proposed development (albeit over a significant distance) the potential for impacts to these habitats has been identified.

Estuary habitat, and mudflat and sandflat habitat is associated with communities of invertebrates within the sediment. A degradation of water quality caused by pollution of watercourses from the proposed development has the potential to result in damage to these communities.

3.3.2.2 Bannow Bay SPA (004033)

There is no potential for direct impact to Bannow Bay SPA or SCIs thereof associated with the proposed development.

As outlined previously, there is potential for the release of surface-water emissions concrete, and sediment laden water into watercourses with connectivity into the SPA. Likewise, dust emissions may be deposited into adjacent watercourses and mobilised downstream over time.

Estuary habitat, and mudflat and sandflat habitat is associated with communities of invertebrates within the sediment. A degradation of water quality caused by pollution of watercourses from the proposed development has the potential to result in damage to these communities. These habitats form core supporting habitat for SCI bird species associated with the SPA. As such, there is potential for impact to the Wetland and Waterbirds SCI associated with the proposed development.

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3.3.3 Effect Pathways during Operation

During operations, the Proposed Development will be monitored and operated remotely by a management team and will be visited regularly by security and/or maintenance personnel. The design of the proposed development includes a fire water storage system to store contaminated runoff in the event of a fire which will mean no runoff is likely to rivers linking the site to downstream European sites. The site also has surface water silt ponds to control surface water runoff rates and maximise settlement of silt before discharge to rivers. This design mitigation to minimise risk of contaminated runoff is outlined in Section 3.5 below.

The presence of a large array of solar panels potentially attracting waterbirds is discussed herein. No measurable adverse effects are likely to remote SCI birds that may possibly fly/migrate over the site from the new solar and other developments (including additional overhead line and other infrastructure for the new substation and BESS). It is acknowledged that migrating waterfowl may potentially fly over the site, but in general based on the field surveys conducted, and desk study, the baseline is that the area of the proposed development is not attractive to wetland birds. The only waterfowl species of note using the site in winter is the locally common snipe which are widespread across Ireland in the winter. Habitat for snipe on the site (wet grassland and marsh) will be retained.

Studies on “lake effect hypotheses” i.e. solar park looking like a lake which may attract waterfowl which collide with solar panels, were reviewed. Studies include Diehl *et al* (2021)⁴³ identify that solar parks can influence flight patterns in that birds may fly closer to “look” at solar arrays in arid areas, but generally reorientate and continue flights. No dead birds were found in solar facilities for this study. As the Proposed Development is well removed from wetlands in the wider region it is likely that risks to migrating birds from “lake effect hypothesis” are imperceptible and not a significant risk to maintenance of SCI birds in European sites at “favourable conservation status”. Likely significant effects arising from the “lake effect” can be excluded based on objective evidence.

3.3.4 Decommissioning Phase Impacts

The design life of the Proposed Development is approximately 40 years. It is anticipated that any effects associated with decommissioning would mirror those of the construction phase.

3.3.5 Summary

A summary of potential impacts identified in Section 3.3, above, is outlined in Table 3-47.

Table 3-4: Potential for Impact in the Absence of Mitigation

European Site	Impact to QIs/SCIs Identified
Bannow Bay SAC	Potential for degradation of the QI Estuaries [1130] associated with surface water emissions at the Construction and Operation Phase of the development
	Potential for degradation of the QI Mudflats and sandflats not covered by seawater at low tide [1140] associated with surface water emissions at the Construction and Operation Phase of the development
Bannow Bay SPA	Potential for degradation of wetland habitats through surface water emissions resulting in significant effects to the SCI Wetland and Waterbirds [A999] at the Construction, Operation and decommissioning Phase of the development

⁴³ Diehl, Robert, Bruce Robertson, Karl Kosciuch. 2021. Investigating the “Lake Effect” Influence on Avian Behavior From California’s Utility-Scale Photovoltaic Solar Facilities . California Energy Commission. Publication Number: CEC-500-2024-055.

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3.3.6 Plans and Projects which Might Act In-Combination

Article 6(3) of the Habitats Directive requires that:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.

It is therefore required that the potential impacts of the Proposed Development are considered in combination with any other relevant plans or projects. As set out above, a search of plans and projects in the vicinity of the Proposed Development was undertaken in August 2025 to identify and examine those with potential for in combination effects.

3.3.6.1 Plans

Wexford County Development Plan 2022-2028

An Appropriate Assessment Screening was carried out for the Wexford County Development plan. The Appropriate Assessment Screening Report concluded that the possibility of significant effects on European sites could not be ruled out and that an Appropriate Assessment was required.

An NIS presented potential impacts on European sites arising from the plan. These included:

- Habitat loss, fragmentation and degradation
- Species loss disturbance and displacement
- Changes in key indicators of conservation status

A number of objectives have been identified as part of the NIS which set out strategies to ameliorate impacts to European sites as a result of the implementation of the development plan. Two key objectives in this regard are:

- Objective EM02 (Appropriate Assessment of development proposals)

“To ensure that planning permission will only be granted for a development proposal that, either individually or in combination with existing and/or proposed plans or projects, will not have a significant effect on a European site, or where such a development proposal is likely or might have such a significant effect (either alone or in combination), the planning authority will, as required by law, carry out an appropriate assessment as per requirements of Article 6(3) of the Habitats Directive 92/43/EEC of the 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, as transposed into Irish legislation. Only after having ascertained that the development proposal will not adversely affect the integrity of any European site, will the planning authority agree to the development and impose appropriate mitigation measures in the form of planning conditions. A development proposal which could adversely affect the integrity of a European site may only be permitted in exceptional circumstances, as provided for in Article 6(4) of the Habitats Directive as transposed into Irish legislation.”

- Objective EM04 (Appropriate Assessment of plans)

“To ensure that plans, including land use plans, will only be adopted, if they either individually or in combination with existing and/or proposed plans or projects, will not have a significant effect on a European site, or where such a plan is likely or might have such a significant effect (either alone or in combination), Wexford County Council will, as required by law, carry out an appropriate assessment as per requirements of Article 6(3) of the Habitats Directive 92/43/EEC of the 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, as transposed into Irish legislation. Only after having ascertained that the plan will not adversely affect the integrity of any European site, will Wexford County

Council adopt the plan, incorporating any necessary mitigation measures. A plan which could adversely affect the integrity of a European site may only be adopted in exceptional circumstances, as provided for in Article 6(4) of the Habitats Directive as transposed into Irish legislation.”

Given that the requirements set out for developments and plans in the Wexford County Development plan will require that there is no potential for significant effects to any European sites (except in exceptional circumstances as outlined above) there is no potential for in-combination effects in association with the Proposed Development. The site is zoned for agriculture hence there are limited developments in the area and these are also discussed in Section 2.6.

3.3.6.2 Planned and Permitted Development

A search of planning applications⁴⁴ submitted within the last 5 years within 15km of the Proposed Development was undertaken in August 2025 to examine projects with potential for in combination effects. Applications which were made typically consisted of extensions, demolitions and renovations to existing houses and agricultural buildings, and retention of existing developments. Other, larger scale, projects which were identified are outlined in Appendix A.

No spatial overlap with any other development was determined. The closest is 1.8km away and this relates to the uprate of an existing overhead transmission circuit - Great Island – Kellis.

Given the location of these works in relation to the European sites, and the Proposed Development no projects with the potential for in-combination effects were identified.

3.3.6.3 In-Combination Effects

Bannow Bay SAC

As outlined previously, the Natura 2000 Standard Data Form for the Bannow Bay SAC⁴⁵ identified the following most important impacts and activities with negative effect on the site:

- Discharges
- Disposal of household / recreational facility waste
- Erosion
- Intensive fish farming, intensification
- Off-road motorized driving
- Bait digging / collection
- Dumping, depositing of dredged deposits
- Invasive non-native species
- Paths, tracks, cycling tracks
- Removal of beach materials
- Removal of sediments (mud...)
- Forest planting on open ground

⁴⁴ Planning Websites: [Map Search | An Bord Pleanála \(pleanala.ie\)](#), <https://planning.agileapplications.ie/wexford/search-applications/>, <https://planning.kilkennycoco.ie/searchexact>, <https://www.eplanning.ie/WaterfordCCC/searchexact>,

⁴⁵ <https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0000697>

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These activities are not associated with the proposed development. No activities were noted in the site synopsis or other supporting documentation in addition to these which might cause an in-combination effect associated with the Proposed Development.

Bannow Bay SPA

The Natura 2000 Standard Data Form for the Bannow Bay SPA⁴⁶ identified the following most important impacts and activities with high negative effect on the site:

- Dispersed habitation
- Fertilisation
- Grazing
- Marine and Freshwater Aquaculture
- Hunting
- Outdoor sports and leisure activities, recreational activities
- Roads, motorways

As outlined previously, these activities are not associated with the proposed development. No activities were noted in the site synopsis or other supporting documentation in addition to these which might cause an in-combination effect associated with the Proposed Development. However, water quality risks from the proposed development are a potential impact considered in this report.

3.4 Potential for Adverse Effects on Site Integrity

3.4.1 Potential for Adverse Effects on Bannow Bay SAC

It has been determined through desk-based assessment and ecological field surveys that the Proposed development is likely to impact the QIs of Bannow Bay SAC as follows:

- Potential for impact to the following QIs via surface water emissions
 - Estuaries
 - Mudflat and Sandflat habitat

Site Specific Conservation Objectives have been developed for Bannow Bay SAC. These have been listed in Section 3.2.1. An assessment of the potential for adverse effects on the integrity of Bannow Bay SAC, in the absence of mitigation, is presented hereunder in the tables below.

⁴⁶ <https://natura2000.eea.europa.eu/natura2000/SDF.aspx?site=IE0004033>

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Table 3-5: Assessment of Potential for Adverse Effects on the site Integrity (in the absence of mitigation) of Bannow Bay SAC – Estuaries

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	The Proposed development will not require any works within the Estuary habitat area. There are no works or impacts identified that would result in the permanent habitat area decreasing.	No potential for adverse effects on site integrity have been identified.
Community distribution	Hectares	Conserve the following community type in a natural condition: Fine sands with <i>Pygospio elegans</i> and <i>Corophium volutator</i> community complex.	As outlined previously, there is potential for surface water emissions to be released into the habitat during the construction and operation phase of the Proposed development. Release of pollutants has potential to result in impacts to the invertebrate communities within the sediments.	Impacts on the community distribution would constitute an adverse effect on the site's integrity .

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Table 3-6: Assessment of Potential for Adverse Effects on the site Integrity (in the absence of mitigation) of Bannow Bay SAC – Mudflat and Sandflat

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes.	The Proposed Development will not require any works within the mudflat and sand flat habitat area. There are no works or impacts identified that would result in the permanent habitat area decreasing.	No potential for adverse effects on site integrity have been identified.
Community distribution	Hectares	Maintain the extent of the <i>Zostera</i> -dominated and the <i>Barnea candida</i> communities, subject to natural processes.	As outlined previously, there is potential for surface water emissions to be released into the habitat during the construction and operation phase of the Proposed development. Release of pollutants, has potential to result in impacts to the invertebrate communities within the sediments in a worst case scenario.	Impacts due on the invertebrate community distribution would constitute an adverse effect on the site's integrity .
<i>Zostera</i> shoot density	Shoots/m ²	Conserve the high quality of the <i>Zostera</i> -dominated community, subject to natural processes	The pProposed Development will not require any works to take place within the <i>Zostera</i> community. There is potential for the release of surface water emissions, but these are not expected to cause an impact on the <i>Zostera</i> community such that there is a reduction in shoot density.	No potential for adverse effects on site integrity have been identified.
<i>Barnea candida</i> density	Individuals/m ²	Conserve the high quality of the <i>Barnea candida</i> community, subject to natural processes	As outlined previously, there is potential for surface water emissions to be released into the habitat during the construction and operation phase of the Proposed development. Release of pollutants, has potential to result in impacts to the <i>Barnea candida</i> communities within the sediments in a worst case scenario.	Impacts due on the <i>Barnea candida</i> community distribution would constitute an adverse effect on the site's integrity .

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22/09/2025

Attribute	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Community distribution	Hectares	Conserve the following community complexes in a natural condition: Fine sands with <i>Pygospio elegans</i> and <i>Corophium volutator</i> community complex; and Intertidal sand dominated by polychaetes community complex.	As outlined previously, there is potential for surface water emissions to be released into the habitat during the construction and operation phase of the Proposed development. Release of pollutants has potential to result in impacts to the community complexes within the sediments in a worst case scenario. This is unlikely, however, to result in a loss of community distribution within the site.	No potential for adverse effects on site integrity have been identified.

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3.4.2 Potential for Adverse Effects on Bannow Bay SPA

It has been determined through desk-based assessment and ecological field surveys that the Proposed development is likely to impact the SCIs of Bannow Bay SPA as follows:

- Potential for impact to the following SCI via surface water emissions
 - Wetlands and Waterbirds

Site Specific Conservation Objectives have been developed for Bannow Bay SPA. These have been listed in Section 3.2.1 An assessment of the potential for adverse effects on the integrity of Bannow Bay SPA, in the absence of mitigation, is presented hereunder in the tables below.

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Table 3-7: Assessment of Potential for Adverse Effects on the site Integrity (in the absence of mitigation) of Bannow Bay SPA – Wetlands

SCI	Attribute(s)	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
Light-bellied brent goose (<i>Branta bernicla hrota</i>) [A046]	Population Trend Distribution	Percentage Change Range, timing and intensity of use of areas	Long term population trend stable or increasing No significant change	Increased pollution load in River (temporary impact) and potential contamination if fire occurs (operational phase). Noting habitat includes mudflats in areas of very limited tidal exchanges and poor dilution i.e. sheltered estuaries including parts of inner Bannow Bay.	Uncertain localised impacts likely to be temporary in a worst-case scenario and imperceptible regarding attribute effects. Precautionary mitigation proposed to rule out uncertainty.
Shelduck (<i>Tadorna tadorna</i>) [A048]					
Pintail (<i>Anas acuta</i>) [A054]					
Oystercatcher (<i>Haematopus ostralegus</i>) [A130]					
Golden plover (<i>Pluvialis apricaria</i>) [A140]					
Grey plover (<i>Pluvialis squatarola</i>) [A141]					
Lapwing (<i>Vanellus vanellus</i>) [A142]					
Knot (<i>Calidris canutus</i>) [A143]					
Dunlin (<i>Calidris alpina</i>) [A149]					
Black-tailed godwit (<i>Limosa limosa</i>) [A156]					
Bar-tailed godwit (<i>Limosa lapponica</i>) [A157]					
Curlew (<i>Numenius arquata</i>) [A160]					
Redshank (<i>Tringa totanus</i>) [A162]					
		Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of		

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SCI	Attribute(s)	Measures	Targets	Potential Impact	Potential for Adverse Effects on Site Integrity
			1,364ha, other than that occurring from natural patterns of variation	<p>the potential to result in a degradation of wetland habitats associated with the SPA. These habitats form key foraging habitat for a large number of birds associated with the SPA.</p> <p>The associated reduction in wetland quality has the potential to result in a lowering of the carrying capacity for wetland birds. However, this will not constitute a reduction in the permanent area occupied by wetland habitats.</p>	permanent area occupied by wetland habitats.

3.5 Mitigation Measures

Mitigation is prescribed hereunder to address the impacts identified such that adverse effects on site integrity of the European site do not occur.

Mitigation measures are set out in accordance with the European Commission (2021) guidance on the 'Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC'.

Mitigation is described with respect to:

- How the measures will avoid / prevent / reduce the adverse impacts on the site to an acceptable level;
- The degree of confidence in their likely success;
- The timescale, relative to the Proposed Development, when they will be implemented;
- How and when the measures will be monitored.

A requirement for mitigation has been identified with respect to control of surface water emissions associated with the Proposed Development.

All mitigation prescribed in this NIS will be implemented by the appointed Contractor for the works, in consultation with the Developer's Ecologist, and the relevant statutory bodies identified hereunder. The Contractor will incorporate the mitigation measures being outlined below into a Construction Environmental Management Plan (CEMP) for the Proposed Development and agree the CEMP with the Developer and the local authority in advance of mobilisation.

A CEMP has been produced for the Proposed Development to support the planning application.

3.5.1 Mitigation to Control Surface Water Emissions

3.5.1.1 Design Mitigation Approach

The drainage design has been developed in accordance with Sustainable Drainage Systems (SuDS) principle, consequently the solar farm will continue to drain to the existing greenfield run-off rates. In order to reduce sediment erosion and flow velocity gravel-filled filter drains are proposed along the proposed access tracks. All new cable infrastructure will be located below-ground and will not interface with surface water receptors. The land will continue to drain as per the existing arrangements along the proposed MV and 220kV cable routes.

Within the surface water drainage system for the BESS and substation compound it is proposed to locate a silt trap chamber and oil/fuel interceptor located upstream of the dry detention basin to help remove pollutants which may have become entrained in runoff from any hardstanding areas that may be at risk of contamination from oil or fuel spills associated with vehicles. An emergency shut-off valve chambers located upstream of the dry detention basin to prevent discharge from the drainage network in an emergency event and during periodic maintenance. In case of a fire event, surface water from the hardstanding areas within the BESS compound will be automatically redirected to an underground firewater storage tank via an automated penstock. This storage tank will ensure any contaminated water from a fire is controlled and not mixed with surface water drainage and therefore will not ultimately be discharged to offsite water courses including the Owenduff River.

With regard to the transformer centres within the solar farm, this will be bunded and fitted with an in-bund interceptor to prevent any oil spillage to ground. Similarly, the transformer within the AIS compound will be an oil filled transformer. This transformer will be bunded and will have the capacity to hold 110% of the volume of oil.

Mitigation for stormwater is embedded in the design, refer to accompanying EIAR. It includes design so that surface water runoff will flow through a silt trap chamber and oil/fuel interceptor and be conveyed to the underground fire water retention tank before discharging to the existing drainage.

As wastewater from the GIS building foul holding tank will be tankered and removed off site, no mitigation is required.

3.5.1.2 Construction Phase Mitigation

The following mitigation measures will be implemented prior to commencement and throughout the duration of the proposed works for protection of watercourses with fishery value on the site and protection of downstream hydrologically connected European sites namely Bannow Bay SAC/ SPA.. These measures will also be incorporated into the Construction and Environmental Management Plan (CEMP), which the Contractor will develop based on the CEMP which accompanies this application.

Mitigation measures will ensure all impacts associated with construction are controlled and managed.

The measures prescribed are best practice measures and are proven technologies/methods. Mitigation and monitoring will be legally binding and outlined as a requirement in contracts.

Pollution prevention measures will be in place before the construction works commence and maintained throughout the construction and post construction including landscaping stages.

Daily monitoring of all pollution control measures will be required to be carried out and recorded by the Contractor. As outlined monitoring and maintenance of effective pollution prevention measures based on standard best practice outlined herein will be legally binding and detailed in contracts in advance of project authorisation.

All pollution control measures will be designed, installed, and maintained in accordance with CIRIA guidance for '*Environmental Good Practice on Site*' (C741) and '*Control of water pollution from linear construction projects. Technical guidance*' (C648).

The following shall apply with regard to contractor responsibility:

- A waste management plan to ensure that waste generated during the project will be managed in a way that ensures the relevant provisions of the Waste Management Act 1996 and associated amendments and regulations are met, particularly with regard to the use of appropriately permitted Waste Contractors and destinations for waste materials.
- A Sediment Erosion and Pollution Control Plan will be implemented for all construction works. This includes measures to manage soil and silt-laden water on site, accidental leaks/spills to ground and water quality monitoring to ensure compliance with environmental quality standards specified in the relevant legislation. The plan for erosion and sediment control will also specifically deal with the potential impacts of material deposition areas during the construction phase of the project;
- All construction staff will be properly trained to respond to accidental discharge or leaks and appropriate spill management kits will be in place to allow rapid response on site. An Incident Response Plan will be in place detailing the procedures to be undertaken in the event of spillage of chemical, fuel or other hazardous substances or wastes, logging of non-compliance incidents and any such risks that could lead to a pollution incident at any point over the proposed working areas.
- Prior to commencement of construction, the contractor will prepare method statements for discharge of construction water discharges. Further discussions will take place with the

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relevant authority to determine the required permit licence agreements to permit the discharge of water during the construction phase to either sewer or to ground.

- Under no circumstances will treated water be discharged to a water course without the respective water quality meeting the statutory limits as set under the relevant EU environmental objectives for surface water.
- A groundwater monitoring plan will be in place, to provide early warnings and prevent possible impacts on groundwater resource during constructions works and to monitor post construction conditions;
- Some of the standard mitigation measures proposed to minimise effects of impacts involved with the proposed construction activities comprise of:
 - The provision of boundary treatments such as silt fencing and berms will be installed prior to the commencement of any construction works in order to enhance the protection of surrounding environment during the full construction phase.
 - Refuelling of construction vehicles and the addition of hydraulic oils or lubricants to vehicles, will take place in a designated and controlled area. Furthermore, temporary stockpiles of excavated material will be managed on a site-per-site basis and designated areas will be suitably sized and isolated from open excavations or sensitive receptors.
 - Where possible excavated material will be reused within the project for the construction of embankments, in backfill, for bunding and landscaping requirements.
 - If any potentially contaminated material is encountered, it will need to be segregated from clean/inert material, tested and classified as either non-hazardous or hazardous using an approved classification method.
 - Excavated contaminated soils will be segregated and stored in an area where there is no possibility of runoff generation or infiltration to ground or surface water drainage. Care will be taken to ensure no cross-contamination with clean soils elsewhere throughout the site.
 - If the water table is encountered during excavation works, groundwater management measures (sheet piles installation, dewatering, etc..) will be implemented to provide a dry working environment. Silt fencing will be installed around the works to prevent silt / suspended solid run off.
 - If a daily abstraction volume higher than 25 m³ is required for dewatering activities, a dewatering / discharge permit should be obtained (with specific mitigation measures specified in the permit). If possible, any abstracted water, if of suitable quality, should be discharged back into the same waterbody. There will be regular checks on the treatment system as well as continuous monitoring equipment to measure, but not limited to, pH, temperature, conductivity, Total Suspended Solids and Totals Dissolved Solids.
- A programme of water quality monitoring (groundwater and surface water) will be implemented by the Contractor. The accompanying CEMP contains a water quality management plan which will be further developed by the Contractor, prior to any construction on site. In the event that parameters are breached during the construction period, additional mitigation will be implemented to ensure that water quality is not adversely affected by the works.
- Potential impacts resulting from the proposed development are reduced due to the programme of works being carried out within the dry season. During the dry season, in the majority of locations, groundwater will not be encountered. However, if groundwater will be encountered, which is likely during maximum recorded groundwater level conditions, the appropriate mitigation measures will be carried out as described above.
- A full-time on-site Environmental Clerk of Works (EnCoW) will be appointed prior to commencement of works.
- No instream works are proposed. Any works in the vicinity of drains (no fisheries importance) or watercourses will be carried out in accordance with the guidelines set out by IFI in

'Guidelines on Protecting Fisheries During Construction Works in and Adjacent to Waters' (IFI, 2016).

- The IFI Biosecurity Protocol for Field Survey Works⁴⁷ will be complied with. The applicant should provide a detailed biosecurity plan to prevent the spread of invasive species, including a protocol to disinfect plant, equipment and PPE and the facilities in place to allow for same. In particular, machinery from other sites will be cleaned and disinfected before they commence work on the site.
- In the case of a warning of a flood event, plant and materials vulnerable to flooding in 'at risk' construction compounds will be relocated to parts of the compound that are considered to be not at risk of flooding.

The following mitigation measures will be implemented prior to commencement and throughout the duration of the construction works:

- Activities will be planned in advance and machinery will be managed to ensure that the number of trips is limited to the minimum required at each location i.e. the more times a piece of ground is tracked, the more likely it is that vegetative cover will be removed and ruts will be created that will act as miniature rivers where dirty water will flow.
- Tracking beside streams will be avoided to avoid damage to the bankside.
- Geotextile or timber matting will be used on soft ground, and in all protected areas
- A buffer zone of 10m will be maintained between storage and working areas and watercourses, taking account of the minimum working area required to facilitate the works.
- The time period over which areas of clearance are left open will be reduced insofar as is reasonably practicable.
- Re-instatement method statements will be subject to approval by the EnCoW.
- Concrete will be brought to site by covered truck. Wet concrete operations adjacent to watercourses will be avoided.
- The Contractor will ensure that all concrete truck wash watering / cleaning is undertaken offsite where possible and remote from watercourses.
- In order to reduce the risk of contamination arising as a result of spills or leakages, measures including, but not limited to, the following will be employed.
 - All collected waste will be managed in accordance with the Waste Management Act 1996, and associated Regulations:
 - Fuels, chemicals, liquid and solid waste will be stored on impermeable surfaces;
 - Refuelling of plant, equipment and vehicles will be carried out on impermeable surfaces;
 - All tanks and drums will be banded in accordance with established best practice guidelines; and
 - Spill kits will be provided at all compound locations and carried by all crews during underground cable installation works.
- Works will not be carried out during extreme rainfall or high flow events. An early flood warning system will be set up to allow the removal of plant and material from construction areas located in Flood Zones A and B in the event of a flood warning. The duration of works within Flood Zone A and B will be minimised to reduce the potential of impact.
- Temporary works will be designed so as not to increase flood risk elsewhere from overland flow, by limiting excavated lengths and providing suitable drainage provision.

⁴⁷ [research_biosecurity_biosecurity_for_fieldsurveys_2010.pdf](#)

- Silt fences (to Hy-Tex Premium specification or similar) and silt traps will be installed prior to commencement of works and will be inspected daily to inform adaptive management as required. The locations of same will be determined by the EnCoW.
- Any instream works will be conducted during the period July – September to avoid effects on fisheries, or otherwise agreed with IFI.

Silt Control Measures

- Silt control measures will be used to control silt generated from activities on site and prevent it gaining access to surface drainage which could convey silt to larger streams and watercourses.
- Silt control measures include silt traps which can be located in small drains where flow is small and silt fences where runoff from large areas needs to be controlled.
- Silt fences must be installed in the working areas and not at the watercourse.
- Access routes will be delineated such that an appropriate set back distance from watercourses is maintained. Where works are to be undertaken adjacent to watercourses the setback distance will be delineated by the EnCoW on site.
- Where distances between the works and watercourse allow, a minimum setback distance of 30m from the watercourse will be maintained.
- Where the site is constrained, the best available set back distance will be employed taking account of the minimum working area required to facilitate the works.

Silt Fences

- Silt fences will be installed downslope of the area where silt is being generated on disturbed ground.
- To be effective the silt curtain must contain the area where silt is generated and must terminate on high ground (i.e. an elevated area not in the watercourse).
- Silt fences will be constructed using a permeable filter fabric (e.g. Hy Tex Terrastop Premium silt fence or similar) and not a mesh.
- The base of the silt fence will be bedded at least 15-30 cm into the ground at 2 metre intervals.
- Once installed the silt fence will be inspected by the Environmental Clerk of Works regularly, daily during the proposed works, weekly on completion of the works for at least one month, but particularly after heavy rains.
- The integrity of the silt fencing will be checked daily by the EnCoW and after poor weather conditions (rain or wind) and any failures rectified immediately.
- Two lines of silt curtain / fence will be installed, where considered necessary, by the EnCoW.
- Any build-up of sediment along the fence boundary will be removed daily.
- Silt fences will be maintained until vegetation on the disturbed ground has re-established. Re-instatement method statements will be subject to approval by the EnCoW.
- The silt fencing must be left in place until the works are completed (which includes removal of any temporary ground treatment).
- Silt fences will not be removed during heavy rainfall.
- The silt fence will not be pulled from the ground but cutaway at ground level and posts removed.
- A record of when it was installed, inspected and removed will be maintained by the EnCoW.

Silt Traps

The purpose of the trap is to reduce the level of solids in the slowly flowing water. The silt trap works by allowing a build-up of water behind it slowing flow and allowing solids to settle out. The following requirements will apply:

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- Silt traps will only be placed in drains downstream of working areas where the volume of water flow is expected to be low.
- Silt traps will be made of terram or similar material, not mesh.
- The trap will be staked into the banks of the drain / watercourse such that no water can flow around the sides.
- The material will be bedded into the drain bed/watercourse to prevent water flowing beneath it.
- The height of the trap will be lower than the bank heights. The upper edge will be fixed to a timber cross piece. This will allow water to overtop the silt trap and not burst through or around it.
- Inspections will be carried out daily; during the proposed works, weekly on completion of the works for at least one month, and after heavy rains, and monthly thereafter until bare areas have developed new growth.
- Any build-up of solids will be carefully removed without removing any vegetation growing on the bottom.
- In sensitive areas a series of silt traps will be placed in the drain.
- The silt trap will not be pulled from the ground but cutaway at ground level and posts removed.
- A record of when it was installed, inspected and removed will be maintained by the EnCoW.

Stockpiling Material

- All excavated material will be stored a minimum of 50m from rivers and any drainage ditches hydrologically connected to the watercourse.
- Silt fences or gravel drains will be positioned around the stockpiles to prevent surface water run-off. The silt fences and gravel drains will be regularly inspected and maintained.
- Stockpiled material, comprising soil, earth, stone etc. will be covered in order to prevent surface water run-off.

Concrete

The pouring of concrete will be required for foundation works. No pouring of concrete will be undertaken at the stormwater outfall location.

- No on-site batching will be permitted at the proposed works areas. Concrete will instead be transported to the site within a concrete truck.
- Quick setting concrete mixes will be used to reduce the risk of contaminated runoff to the nearby watercourses.
- Where concrete pours are to take place instream, they will only take place within an isolated, dry, works area.
- Where the isolated working area requires constant pumping to maintain a dry works area, pumps shall be turned off during the pour, and remain off until concrete has hardened negating a runoff risk; and such that the discharge will not result in a change in pH of +/-0.5 units.
- The Contractor's EnCoW will ensure that covers are available for freshly poured concrete to avoid wash off in the event of rain.
- Waste concrete slurry will be allowed to dry and taken to a licensed waste depot for disposal.
- The Contractor will schedule concrete works during relatively dry weather conditions (i.e. when there are no active Met Eireann yellow, orange or red warnings) to reduce the elevated risk of runoff.
- Concrete trucks will be washed down within a designated wash down area within the construction compound only and will be washed into appropriately sized containers which shall be inspected for defects in advance. Where the container is defective it shall not be

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used. Concrete trucks will be washed down in a sealed mortar bin/skip which has been examined in advance for any defects. This requirement will be communicated to each concrete truck driver prior to entering into the works area.

- The Contractor will ensure that all concrete truck wash watering / cleaning is undertaken offsite where possible and remote from waterbodies.
- Wet concrete operations adjacent to waterbodies will be avoided where possible.

Hydrocarbons

- Where mobile equipment is required e.g. generators, these will be housed in a suitably sized bund / plant nappy such that any leaks / spills are intercepted. All mobile equipment used at the proposed stormwater outfall will be stored within a plant nappy.
- Fuelling and lubrication of plant and equipment will be restricted to the construction compound site only. No refuelling will be permitted to occur within 50m of the River Gully or drainage ditches.
- All waste fuels, oils, and other hazardous wastes will be disposed of in accordance with the requirements of the Waste Management Acts 1996, as amended.
- Spill kits will be provided at the construction compound/laydown areas, within designated areas for refuelling and waste storage and in the cabin of each vehicle and operators will be fully trained during induction to site by the Contractor's EnCoW in the use of this equipment.
- Welfare / hygiene facilities will be located within the construction compound a minimum of 50m from any watercourse / drainage ditch.
- All water from wheel washes will be removed from site and disposed of in line with Waste Legislation. No water will be discharged into any watercourses or drainage ditches.

Dewatering

- Any water ingress associated with the compound excavation will be removed to facilitate suitable working conditions. The water will be over pumped and treated via a filter bag before being discharged within a vegetated area located north of the construction compound. Silt fences will be installed around the vegetated area to ensure there is no runoff of sediment laden surface water. Any contaminated water unsuitable to be discharged to ground will be removed and disposed of offsite.

Construction Lighting

- All temporary lighting associated with the construction works will be placed strategically by the Contractor's ECoW such that illumination beyond the works area is controlled. Particular attention will be paid to minimise disturbance of bats utilising hedgerows and woodland on site by keeping lighting in these areas to a minimum.
- Lighting will be cowed and directional to reduce significant light splay. Column height if lights will be carefully considered to minimise light spill.

Invasive Species

No schedule 3 listed species were recorded. However, they could establish before construction phase. Prior to works commencing a full confirmatory invasive species survey will be carried out by the contractor's ECoW in accordance with Guidance of Transport Infrastructure Ireland⁴⁸. All other surveys will be carried out having regard to guidance of NRA (2009). The pre-construction invasive species surveys will be carried out within the works areas, including compound locations and laydown areas, and along proposed access tracks to identify the presence of all invasive species within and adjacent to works areas.

Any additional findings of this invasive species survey will be incorporated into the final CEMP for the works. The measures relating to the Invasive Species will be identified prior to any works

⁴⁸ TII (2020) The Management of Invasive Alien Plant Species on National Roads – Technical Guidance. Available online: <https://cdn.tii.ie/publications/GE-ENV-01105-01.pdf> [Accessed 11 September 2025]

RECEIVED: 22/09/2025

commencing. These measures will be regularly reviewed and updated throughout the works to include for any additional invasive species encountered.

The Invasive Species Management Plan will set out site-specific and species-specific measures to manage invasive species. It will incorporate the following measures as a minimum:

- All machinery will be steam-cleaned prior to entering site
- Any stands of invasive species that are recorded within the site will be clearly marked out as restricted areas. This exclusion zone will incorporate a buffer such that below ground growth is accounted for, noting the reduced extents for Japanese knotweed based on recent research (Fennell et al., 2018). No works will be carried out within the exclusion zones unless fully supervised by the Contractor's ECoW.
- The Contractor's ECoW will carry out a toolbox talk for all construction personnel which will provide information on how to identify and manage invasive species.
- A Check, Clean, Dry protocol will be undertaken with all equipment, machinery and vehicles entering and leaving the application site boundary.
- Any fill that is required will be from a licensed facility identified by the contractor.

3.5.1.3 Operation Phase Mitigation

No specific operation phase mitigation is proposed to mitigation outlined above. The silt ponds will be maintained as a biodiversity feature (wetland) and no risk of runoff to local rivers are likely.

The fire storage tank will be maintained as per manufacturers requirements.

3.5.2 Implementation of Mitigation Measures

The Mitigation Measures (Project Design measures, Management Plans, Environmental Emergency Procedures and Best Practice Measures) will be implemented by the Site Manager during the construction stage and the appointed Ecological Clerk of Works. Implementation of the Mitigation Measures will be under the Construction and Environmental Management Plan (CEMP) for the works.

All protection measures have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and field baseline verification. Surface water pollution controls in particular are best practise and include an additional level of silt control to standard, which is an attenuation pond. This will provide additional operational phase surface water runoff control while in parallel providing additional general ecological enhancement. As such there is a very high degree of confidence in mitigation success.

Implementation of the mitigation measures will be the responsibility of the developer and their appointed contractors. The supervision of the works will be carried out by an Ecological Clerk of Works, appointed by the contractor. The Contractor's ECoW will have a 'stop works' authority.

3.5.3 Degree of Confidence in the Likely Success of the Mitigation Measures

All protection measures have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and field baseline verification. As such there is a very high degree of confidence in their likely success.

3.5.4 How any Mitigation Failure will be addressed

The mitigation measures prepared specifically for this project have been designed in line with Best Practice and constitute the Best Available techniques following scientific literature and Best

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Practice. The Mitigation Measures including monitoring are considered to be robust and proven measures which will avoid adverse effects to European Sites.

On this basis, it can be confidently concluded that failures in the mitigation measures and their prescribed outcomes will be avoided.

Nonetheless contingency measures will be in place for unforeseen events such as oil/fuel spillages, water pollution or any inadvertent release of sediment. This will ensure any unforeseen potentially adverse effects are identified in a timely manner and appropriate remedial action taken immediately. The Contractor's ECoW will have a 'stop-works' authority to temporarily stop works over part of the site to avoid an infringement of the Environmental Commitments or an unforeseen environmental event. Works will not be allowed to re-commence until the issue is resolved.

3.5.5 Conclusion

The mitigation measures detailed in this NIS have been carefully considered to ensure there will be no adverse effects on the integrity of the Bannow Bay SAC/SPA in light of the site's conservation objectives and status.

Based on the assessment of the proposed development alone and in combination with other projects and plans, including the implementation of mitigation measures, it can be concluded that no adverse effects on the site's integrity will arise, in view of the site's conservation objectives.

This AA Screening and NIS has been submitted on behalf of the developer of the Project to enable the competent authority to conduct both a Stage 1 Screening Assessment in relation to the European sites outlined above and as appropriate a Stage 2 Appropriate Assessment (AA).

This NIS assesses the potential for the Project to adversely affect the integrity of the relevant European sites. It has been prepared taking into account the precautionary principle and is based on the best scientific knowledge in the field.

For the reasons set out in detail in this NIS, in the light of the best scientific knowledge in the field, all aspects of the Project which, by itself, or in combination with other plans or projects, which may affect the relevant European Sites have been considered.

The NIS contains information which the competent authority may consider in making its own complete, precise and definitive findings and conclusions and upon which it is capable of determining that all reasonable scientific doubt has been removed as to the effects of the proposed development on the integrity of the relevant European sites.

In conclusion, in light of the conclusions of the assessment which it shall conduct on the implications for the European sites concerned, the competent authority is enabled to ascertain that the project will not adversely affect the integrity of any European sites concerned.

Appendices

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A. In-Combination Effects

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Table 3-8: Projects which may act in combination

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Waterford City and County Council	221064	To raise levels of existing agricultural lands using clean inert soil and stones (EU Waste Class 17 0504) in order to improve the quality of said lands. An application for a waste disposal permit will be sought post planning	<p>The planning report notes in relation to Appropriate Assessment "<i>Having regard to the location of the subject site and to the nature of the proposed development, and the intervening distance with the identified Natura 2000 sites, I consider that no appropriate assessment issues arise in this case. In my opinion the proposed development either individually or in combination with other plans or projects, would not be likely to have a significant effect on a natura 2000 site.</i>"</p> <p>Given the nature, scale and location (>10km distant) of the development, no potential for in-combination effects is identified.</p>
Waterford City and County Council	2460796	A new Community Scouts Centre to include a communal hall, toilets, meeting room, kitchen, external terrace, storage units, camping facilities, new vehicular entrance, carparking and all associated drainage, site works, landscaping and associated works	<p>A screening for appropriate assessment was produced in support of this application which concluded "<i>The potential effects of this development are minimal and it cannot be said that it is likely to have a significant impact on the nearby (or any) European site, or on the integrity of the Natura 2000 network. It will also not compromise the attainment of the conservation objectives for any site</i>"</p> <p>Given the nature, scale and location (>10km distant) of the development, no potential for in-combination effects is identified.</p>
Waterford City and County Council	2460684	For the construction of a residential development incorporating 20No. dwelling units comprising of 16 No. 3 Bed semi-detached two-storey dwellings with optional attic conversion and sunroom extension to the rear, 3 No. 4 Bed detached two-storey	<p>A request for further information has been made for this development. No details relating to Appropriate Assessment were available at the time of review. As part of the assessment of this development by the council the development will be</p>

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Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>dwelling and 1No. 3 bed single-storey dwelling, vehicular entrance, vehicular & bicycle parking, boundary treatments and waste water pumping station, all together with associated site development works</p>	<p>subject to Appropriate Assessment in its own right in full. The development cannot be granted if it is found to have potential for significant effects. Further, the development is located a significant distance from the proposed development. As such, given its location (>10km distant), no potential for in-combination effects is identified.</p>
<p>Waterford City and County Council</p>	<p>2560153</p>	<p>To build 8 no. two storey, semi detached houses and 2 no. single storey, detached houses, together with associated site development works, including entrance from adjoining public road and the installation of the necessary services __ All forming their proposed housing layout</p>	<p>A request for further information has been made for this development. No details relating to Appropriate Assessment were available at the time of review. As part of the assessment of this development by the council the development will be subject to Appropriate Assessment in its own right in full. The development cannot be granted if it is found to have potential for significant effects. Further, the development is located a significant distance from the proposed development. As such, given its location (>10km distant), and scale, no potential for in-combination effects is identified.</p>
<p>Waterford City and County Council</p>	<p>21189</p>	<p>Development consist of the construction of a new housing development of 19 no. dwellings, comprising (i) 2 no. two storey, 4 bedroom semi-detached units with optional attic conversion (House Type A1/A2; (ii) 6 no. two storey, three bedroom semi-detached units with optional attic conversion (House Type B1/B2), (iii) 4 no. two-storey, three bedroom end of terraced units with option of attic conversion (House Type C1/C23, (iv) 2 no. two-storey, two bedroom mid terraced units (House Type C2), (v) 1 no. single-storey, three-bedroom detached unit (House Type D), (vi) 2 no. two-storey, 4 bedroom semi-detached units (House Type E1/E2); (vii) 2 no. 2 storey, three bedroom</p>	<p>A Screening for Appropriate Assessment was produced in support of this application which concluded "<i>In my opinion the proposed development either individually or in combination with other plans or projects, would not be likely to have a significant effect on a Natura 2000 Site.</i>"</p> <p>Given the above along with the nature, scale and location (>10km distant) of the development, no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>semi-detached units (House Type F1/F2), connection to existing public foul and surface water drainage, proposed new vehicular entrance, associated boundary treatments, and all associated site development works</p>	
Waterford City and County Council	16682	<p>A new underground pumping station with storm water retention capacity, within the existing site boundary, and a new underground transfer rising main from the new pumping station in Passage East to the existing wastewater treatment plant in Crooke. The existing septic tank at Passage East is to be demolished.</p>	<p>An appropriate assessment provided with the application concludes that "On the basis of the findings of this Screening for Appropriate Assessment, it is concluded that the proposed Sewerage Scheme Upgrade Works will not have a significant effect on the Natura 2000 network and a Stage 2 Appropriate Assessment is not required."</p> <p>Given the above along with the location (>10km distant) of the development, no potential for in-combination effects is identified.</p>
Waterford City and County Council	22923	<p>The development that will consist of the construction of a new housing development of 27 no. dwelling comprising: (i) 10 no. two-storey, four-bedroom semi-detached units with optional attic conversions, (ii) 14 no. two-storey, three-bedroom semi-detached units with optional attic conversions, (iii) 2 no. two-storey, three-bedroom end-of-terrace units, (iv) 1 no. two-storey, three-bedroom mid-terrace unit, new access road via previously granted planning application 21189, connection to existing public foul and surface water drainage, associated boundary treatments, and all associated site development works</p>	<p>The planner's report for the development notes the following conclusion in relation to Appropriate Assessment for the development "In my opinion the proposed development either individually or in combination with other plans or projects, would not be likely to have a significant effect on a Natura 2000 Site."</p> <p>Given the above along with the location (>10km distant) of the development, no potential for in-combination effects is identified.</p>
Kilkenny County Council	19730	<p>For the construction of 98 no. residential units comprising of the following: (a) 36 no. 2 storey 3 bed semi-detached dwellings with optional attic conversion and sun room space; (b) 30 no. 2 storey 4 bedroom semi-detached dwellings with optional attic</p>	<p>The planner's report for the development notes the following conclusion in relation to Appropriate Assessment for the development "Having regards to the AA Screening Report Statement significant environmental impacts either</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>conversion and sun room space; (c) 8 no. 2 1/2 storey apartment block (BLOCK C) containing 16 no. single storey 1 bed apartment at ground floor level and 16 no. 1 1/2 storey 2 bed apartment at first floor level and second floor level. Permission is also sought for new vehicular road access from the existing off Clover Ave. road with pedestrian access points, together with proposed boundary treatment, landscaping, car parking, signage, drainage connections and all associated site development works, all</p>	<p><i>alone or in combination with other development on any Natura 2000 designated network site is not anticipated."</i></p> <p>Given the above along with the location (>10km distant) of the development, no potential for in-combination effects is identified.</p>
Kilkenny County Council	20453	<p>Is sought for the construction of 40 no. residential units comprising the following; (A) 27 NO. 2 storey 3 bed semi-detached dwellings (HOUSE TYPE A); (B) 3 NO. 2 storey 3 bed semi-detached dwellings (HOUSE TYPE B); (C) 4 NO. 2 storey 3 bed mid-terrace dwellings (HOUSE TYPE C); (D) 2 NO. 2 storey 3 bed detached dwellings (HOUSE TYPE D); (E) 1 NO. 2 storey 3 bed semi-detached dwelling (HOUSE TYPE E); (F) 2 NO. 2 storey 2 bed mid-terrace dwellings (HOUSE TYPE F); (G) 1 NO. 2 storey 3 bed semi-detached dwelling (HOUSE TYPE G). Permission is also sought for 2 number new vehicular road access and footpaths via the existing Abbeygate estate road with pedestrian access points, together with proposed boundary treatments, landscaping, car parking, new foul & surface water drainage connections and associated infrastructure to include new foul pump station with access, decommissioning existing foul pump station, decommissioning detention basin, 2 no. storm attenuation tanks, diversion of existing water main, new water mains with domestic connections and all associated site development works</p>	<p>A Screening for Appropriate Assessment was carried out in relation to this development which determined that "<i>Significant impacts can be ruled</i>"</p> <p>Given the above along with the location (>10km distant) of the development, no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Kilkenny County Council	21357	For (A) the proposed Change of use of part of the existing site from truck parking (which was granted permission under Planning reg no 94311) to form a Cold Storage Depot, Hard Standing and yard area together with all associated site works and ancillary services, (B) the proposed installation of a ESB Substation with Switch Room on site, (C) the proposed demolition of an existing building on site and (D) the proposed relocation of the existing Truck Wash Bay area on site	<p>The planner's report notes the following conclusion in relation to Appropriate Assessment "A Screening exercise was completed, which showed that no significant environmental impact is likely having regard to the development proposed and distance of the subject site from any Natura 2000 site. It is therefore concluded that a Natura Impact Statement is not required."</p> <p>Given the above along with the location (>10km distant) of the development, no potential for in-combination effects is identified.</p>
Kilkenny County Council	23145	Development from townland of Marshmeadows, New Ross, Co. Wexford to townland of Raheen, Rosbercon, Co. Kilkenny. The project passes under the River Barrow across the county boundaries of Wexford and Kilkenny. The development consists of (1) Medium Voltage (MV) electricity system improvement by the installation of a new 20kV electricity underground cable (UGC) by means horizontal directional drilling (HDD) under the River Barrow to connect the Lake Region circuit at Marshmeadows, County Wexford to the Beechgrove circuit at Raheen, Rosbercon, County Kilkenny. From end to end the UGC measures approximately 580m. The majority of the circuit, approximately 365m will be installed by HDD under the River Barrow. The remainder of the circuit, approximately 215m will be a UGC installed by traditional trenching and ducting means. Approximately 355m of this UGC will be installed within County Wexford and the remaining 225m will be installed within County Kilkenny. (2) A second "spare" duct will be installed within the HDD to enable a second circuit to be installed at a future date to further	<p>An NIS was produced for this development. The NIS report noted the potential for impact in the absence of mitigation for impacts to the Lower River Siur SAC and the River Barrow and River Nore SAC. The Proposed Development has not been identified as having any source pathway receptor links with either of these European sites. As such, there is no potential for in-combination effects identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		enhance and future proof the network. (3) Permission is sought for all associated works including temporary works required. Planning permission is sought for a ten (10)year period. A Natura Impact Statement (NIS) has been prepared and will be submitted to the planning authority with the application	
Kilkenny County Council	21989	For development at this site. The development consists of the installation of a Combined Heat and Power (CHP) unit including a 7.55m high stack, stack access ladder and platform, improvements to the internal estate road and ancillary site works at the permitted cheese manufacturing plant, planning permission reference no. 19/668 (APB-306136-19). An Industrial Emissions Licence is required for the cheese manufacturing plant and the proposed development. A Natura Impact Statement will also be submitted with the application.	An NIS was produced in support of this development. The report notes the potential for water quality and pollution effects on the Lower Suir SAC., and the River Barrow and River Nore SAC. The Proposed Development has not been identified as having any source pathway receptor links with either of these European sites. As such, there is no potential for in-combination effects identified.
Kilkenny County Council	2460656	For development, at Unit 1, Belview Port, Gorteens, Co. Kilkenny. The development will consist of the amendment of condition no. 3 Pl. Ref. 11/397 to include for the acceptance, unloading and storage of non-hazardous waste including construction and demolition waste, end of life tyres and other non-hazardous bulk wastes for onward export. The application is accompanied by an Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS)	An NIS was produced in support of this development. The report notes the potential for impacts to the Lower River Suir SAC, the River Nore/Barrow SAC and the River Nore SPA. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Kilkenny County Council	2560152	For the use of an existing storage shed for the storage of selected waste materials in addition to the current storage of bulk port related materials at Shed H4 located at the Suir Shipping site, Belview Port, Co. Kilkenny. The proposal for shed H4 will include for the proposed storage of waste shredded tyres, crushed glass and non-hazardous waste soil prior to off site transfer or shipment. The combined total weight of the proposed waste materials to be stored at Shed H4 will be up to 24,500 tonnes per annum which will be measured on the existing weighbridge. Suir Shipping also propose that the current storage of bulk port related goods (i.e., bulk break, bulk and unitized products allowed under planning 18/317) is retained	<p>A screening for Appropriate Assessment was carried out in relation to this development which determined that "<i>It is clear that there is no likelihood of significant effects on any European Sites</i>"</p> <p>Given the above along with the location of the development, no potential for in-combination effects is identified</p>
Kilkenny County Council	2360274	Seed Technology Ltd. is applying for Planning Permission for (1) New single storey warehouse, incorporating a 2 Storey office block; (2) Open sided covered goods in-take area from proposed warehouse to existing building; (3) New single storey storage building between proposed building and existing building; (4) Relocation of existing weigh-bridge and associated items; (5) Relocation of existing static water bladder tank; (6) Realignment of existing car parking area on site to include for additional spaces; (7) Realignment of internal site road, together with all associated site development works, all at Gorteens, Slieverue, Co. Kilkenny. This application is accompanied by a Natura Impact Statement (NIS).	<p>An NIS was produced in support of this development. The report identifies the potential for impacts to the Lower River Suir SAC, the River Nore/Barrow SAC and the River Nore SPA. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Kilkenny County Council	2360538	For (i) to build four detached, two storey, four bedroom houses along Road 6 (Oak View). (ii) to building thirteen semi detached and terraced, two storey, two bedroom and three bedroom houses, in an extension and in completion of Road 4 (Heather Grove). (iii) to build 18 detached, semi detached and terraced, two storey, two bedroom, three bedroom and four bedroom houses, in an extension and in completion of Road 8 (Pine Grove). All in a modification of the subject as was granted planning permission under Ref no. 15/89 and parent planning Ref no. 04/860 (both now extinguished). All together with carrying out the associated site development works and the installation of necessary services	<p>A screening for Appropriate Assessment was carried out in relation to this development which determined that "<i>It is clear that there is no likelihood of significant effects on an European Site</i>"</p> <p>Given the above along with the location of the development, no potential for in-combination effects is identified.</p>
Kilkenny County Council	2460504	for development at a site which extends to 3.61 hectares on lands located at Millbanks Road (L3443). The development will consist of the following: 1. The construction of 75 no. residential units comprising: (a) 63 no. 3-bed houses (b) 12 no. 4-bed houses 2. The provision of a creche (216.6 sqm) 3. The provision of a new pedestrian and vehicular access to Millbanks Road (L3443). 4. The provision of a 4m wide setback along Millbanks Road (L3443) which includes the provision of a 2m footpath and 2m grass verge extending to the south of the proposed vehicular access. 5. Provision of all associated surface water and foul drainage services and connections, upgrade works to the existing public mains and sewer network, sustainable urban drainage systems, and all associated site works and ancillary services. 6. Provision of communal open space, private open space, site landscaping and boundary treatments, public lighting, resident and visitor car parking, bicycle parking,	<p>An NIS was produced for this development. The report identifies the potential for impacts to the River Nore SPA. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>pedestrian and vehicular links throughout the development, and all other associated site development works. The planning application is accompanied by a Natura Impact Statement (NIS).</p>	
Kilkenny County Council	20738	<p>For development at this site address. The development will consist of an ESB medium voltage (MV) Unit Substation and adjoining Customer Switchroom (an external footprint of up to 31m2, gross floor space of up to 19.5m2 and up to 3m in height) and all other associated site development works, including drainage and underground electrical cabling and ducting, required to facilitate the development. The substation development will be contained entirely within the boundary of the existing Belview Port and will use existing access arrangements within the port facility. The application is accompanied by a Natura Impact Statement (NIS)</p>	<p>An NIS was produced for this development. The report identifies the potential for impacts to the Lower River Suir SAC, and the River Nore/Barrow SAC . The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.</p>
Kilkenny County Council	22569	<p>To construct 3No wood based, biomass storage bays an ash storage building and associated site works including road widening to an existing internal road and a new concrete yard area. A Natura Impact Statement will accompany the Application. Smartply Europe currently hold an Industrial Emission Licence issued by the EPA.</p>	<p>An NIS was produced for this development. The report identifies the potential for impacts to the Lower River Suir SAC, and the River Nore/Barrow SAC . The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.</p>
Kilkenny County Council	20700	<p>To develop a log yard and associated works. The log yard will extend the area available for stockpiling and handling of logs for use in SmartPly's oriented strand board mill which adjoins the site. A Natura Impact</p>	<p>An NIS was produced in support of this development, which states that identified the potential for effects on the Lower River Suir SAC, and the River Barrow and River Nore SAC. The Proposed Development has not been identified as having</p>

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Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		Statement will accompany the Application	any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.
ABP WEX	313191	Proposed new 110kV substation to be located within the boundary of the consented Dennistown Solar Energy Development by way of a 110kV underground grid connection to Wexford 110kV substation	The inspector's report notes in relation to AA Screening that " <i>..of the 16 Natura 2000 designated sites within the identified 15km zone of influence, the proposed development, alone and in combination with other plans and projects, is unlikely to have any significant effect on any European site given the absence of any source pathway-receptor connectivity</i> " As such, there is no potential for in-combination effects identified.
ABP WEX	318914	110kV substation and 110kV underground grid connection	The inspector's report notes in relation to AA Screening that " <i>the proposed development would not have a likely significant effect on any European Site either alone or in combination with other plans or projects. It is therefore determined that Appropriate Assessment (stage 2) is not required</i> ". As such, there is no potential for in-combination effects identified.
ABP KK	306136	Seven year planning permission for a continental cheese manufacturing plant. Retention of and alterations to the existing construction compound which will be removed on completion of the works. EIAR and a NIS submitted with planning application. (appeal of KK 19668)	The Inspector's Report states that the " <i>proposed development has the potential to cause adverse impacts on European Sites. Therefore, the AA progressed to Stage 2 of the assessment process and a Stage Two Appropriate Assessment Natura Impact Statement (NIS) was prepared.</i> " The sites that were identified as having potential for effects were the Lower River Suir SAC, and the River Barrow and River Nore SAC. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
ABP KK	312631	Construction of two boreholes in milk processing plant. Natura Impact Statement submitted with the planning application. The Glanbia Ireland DAC facility has an Industrial Emissions Licence granted by the EPA (appeal KK 2144)	The inspectors report identified the potential for effects on the Lower River Suir SAC, and the River Barrow and River Nore SAC in the absence of mitigation. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.
ABP KK	321962	Construction of an integrated plasterboard manufacturing facility and all associated works. Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS) submitted with application. (appeal KK 2460103)	The inspectors report identified the potential for effects on the Lower River Suir SAC, and the River Barrow and River Nore SAC in the absence of mitigation. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.
Wexford County Council	20191613	Permission for the proposed erection of an industrial workshop building including all auxiliary accommodation, external signage, the erection of paladin fencing together with all associated and auxiliary site works	The planners report notes the following in relation to European sites " <i>Bannow Bay SAC is located approx. 165m to the south of the subject site. There appears to be no hydrological connection between the subject site and the SAC. A busy road and a disused railway station separate the proposed development from the SAC and therefore the proposed will not increase any levels of disturbance to species.</i> ". As such, there is no potential for in-combination effects identified.
Wexford County Council	20200124	Permission for the installation of a liquid natural gas fuel system, complete with associated new storage vessel and plant equipment, the installation of a new plant control container and the necessary alterations to the existing tank-farm to accommodate the works, complete with all associated site works and ancillary accommodation. All the above works to be undertaken at site	A screening for appropriate assessment was produced in support of the development. The Screening concluded that " <i>It is concluded that there will be no direct or indirect impacts on the River Barrow and River Nore SAC from the proposed installation, due to the limited potential for adverse impacts and design measures within the existing facility, which will prevent the release of any</i>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		at marshmeadows, new ross, co. Wexford.	<i>pollutants to the aquatic environment.</i> " As such there is no potential for in-combination effects associated with the proposed development.
Wexford County Council	20210095	Permission for to fill 4047 sq.m. (part of the existing site) with a clean stone and place a concrete finish thereon, erection of a palisade fence with on site associated drainage, with all associated site works. A Natura Impact Statement (NIS) accompanies this application.	An NIS was produced in support of the proposed development. The report identified the potential for effects to the Barrow River SAC. As no viable source-pathway receptor links were identified to the River Barrow and River Note SAC associated with the Proposed Development, no potential for in-combination effects is identified.
Wexford County Council	20210807	Permission for development consisting of a ten year permission for a solar farm on a site of approximately 86.6 hectares consisting of the following: solar photovoltaic panels on ground mounted steel frames; IPP electrical control building and associated compound; inverter/transformer stations; battery storage units and associated hard standings; storage containers for spare parts; underground power and communication cables and ducts; boundary security fencing; upgraded internal access tracks; new internal access tracks and associated drainage infrastructure; CCTV cameras and all associated site services and works. A Natura impact statement accompanies this application.	An NIS was produced in support of the proposed development. The report identified the potential for effects to the Ballyteigue Burrow SAC and SPA. As no viable source-pathway receptor links were identified to these European sites associated with the Proposed Development, no potential for in-combination effects is identified.
Wexford County Council	20220628	Permission for development which will consist of grid connection infrastructure to connect the approved Ballyedock Solar Farm (PA Ref:20170330) to the existing Great Island Substation comprising the laying of underground cables, overhead lines, associated infrastructure and Horizontal Directional Drilling. The proposed development will also include upgrades to the substation	The inspectors report identified the potential for effects on the Lower River Suir SAC, and the River Barrow and River Nore SAC in the absence of mitigation. The Proposed Development has not been identified as having any source pathway receptor links with these European sites. As such, there is no potential for in-combination effects identified.

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>(previously consented under planning application reference 20170330) to align with the connection route to the national grid. A Natura Impact Statement has been prepared in respect of the application for planning permission.</p>	
<p>Wexford County Council</p>	<p>20220900</p>	<p>Permission for a 10-year planning permission for development which will consist of the construction of a solar PV farm with an operational life of 35 years consisting of ca. 79,450m² of solar photovoltaic panels on ground mounted frames within a site area of 12.6 hectares and associated ancillary development including 2 no. inverter / transformer stations (6.10 x 2.45 x 2.90m), 1 no. ESB delivery substation (10.38 x 5.50 x 5.10m), 1 no. MV switchroom module (4.55 x 3.15 x 3.35m), 1 no. spare parts storage container (12.20 x 2.45 x 2.90m), 20 no. CCTV security cameras mounted on poles (3.40m high) and perimeter security fencing (2.40m high), internal post and wire fencing (2.40m high), the construction of an internal hardcore access road, localised improvements to an existing agricultural access from the adjoining R734 road and the creation of an access point adjoining the L7043 to facilitate construction and operational phase access, a temporary site compound, the installation of an underground electricity cable from the onsite ESB delivery substation to the existing ESB Bealstown substation, and all other associated site services, drainage and landscaping works. A Natura Impact Statement has been prepared in respect of the proposed development and is included in the application. planning permission for development which will consist</p>	<p>A Natura Impact Statement was produced in relation to this development. The report identified the following effects with potential to adversely affect the conservation objectives of Bannow Bay SPA and Bannow Bay SAC: Loss of, or disturbance to habitats, and the potential impairment of water quality. Mitigation measures were proposed within the report to ameliorate this risk. Given the mitigation measures prescribed within the NIS, and the location of the development in relation to the Proposed Development (approximately 5km away) no potential for significant effects was identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Wexford County Council	20230316	Permission for the following: Construction of a single-storey Medium Voltage ESNB Substation and Associated site works. Also, the reduction of the area of Recycling Facility site boundary, replacing fencing like for like where required	The planners report for the development does not identify any potential for impacts to European sites and states that AA is not required. Given this, and the location of the development in relation to the Proposed Development and European sites no potential for in-combination effects is identified.
Wexford County Council	20230651	Permission for development in the townland of Marshmeadows, New Ross, County Wexford to the townland of Raheen, Rosbercon, County Kilkenny. The project passes under the River Barrow across the county boundaries of Wexford and Kilkenny. The development consists of (1) Medium Voltage (MV) electricity system improvement by the installation of a new 20kV electricity underground cable (UGC) by means horizontal directional drilling (HDD) under the River Barrow to connect the Lake Region circuit at Marshmeadows, County Wexford to the Beechgrove circuit at Raheen, Rosbercon, County Kilkenny. From end to end the UGC measures approximately 580m. The majority of the circuit, approximately 365m will be installed by HDD under the River Barrow. The remainder of the circuit, approximately 215m will be a UGC installed by traditional trenching and ducting means. Approximately 355m of this UGC will be installed within County Wexford and the remaining 225m will be installed within County Kilkenny. (2) A second spare duct will be installed within the HDD to enable a second circuit to be installed at a future date to further enhance and future proof the network. (3) Permission is sought for all associated works including temporary works required. Planning permission is sought for a ten (10) year period. A Natura Impact	AA states that due to the "limited extent of the proposed works and the substantial distance to the nearest Natura 2000 sites, no element of the proposed project, alone or in-combination, is likely to give rise to any impacts on the Natura 2000 sites".

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		Statement (NIS) has been prepared and will be submitted with the application.	
Wexford County Council	20230871	Permission for development consisting of: A 10 year planning permission for the construction of a Grid Stability Service Development and all associated site clearance and site development works. The proposed grid stability service development consists of the provision of a synchronous condenser within a building circa 13 metres in height; elevated modular containers to house electrical and control equipment and all associated plant/apparatus including: a) a generator circuit breaker, b) transformers, c) outdoor cooler equipment, d) underground cabling (including a connection to the existing substation, e) all associated above ground cabling, piping and electrical connections, f) 1 no. generator and associated diesel tank, g) firewater tank and pumphouse, h) perimeter fencing and 2 no. gates and i) all associated site development works including hardstanding, drainage, gabion wall and landscaping. The proposed site clearance works include the removal of a temporary portacabin and construction rubble from the site. The application relates to an establishment which holds an Integrated Pollution Prevention and Control (IPPC) license and to which the major accident regulations apply.	An Appropriate Assessment Screening report was produced in support of the proposed development. The report states that " <i>Having regard to the limited extent of the proposed works and the substantial distance to the nearest Natura 2000 sites no element of the proposed project alone or in combination is likely to give rise to any impacts on the Natura 2000 sites.</i> ". As such, no potential for in-combination effects is identified.

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Wexford County Council	20231294	<p>Permission for development, consisting of: Construction of an electrical infrastructure installation and associated underground grid connection (UGC) on lands within the townland of Great Island measuring approximately 2.6Ha. in overall area. The installation will consist of a Battery Energy Storage System (BESS), a 38kV tail-fed substation, underground grid connection (UGC) to connect the proposed substation to an existing ESB substation at Campile and associated ancillary development. The BESS would comprise 16no. individual battery storage units on concrete foundations, each unit measuring 2.60m in overall height, 2.4m in width and 6.00m in overall length with heating, ventilation and air-conditioning (HVAC) units; The 38kV substation compound would consist of a 38kV transformer; diesel generator; house transformer; disconnect; individual current and voltage transformers; combined current/voltage transformer; surge arrestors; circuit breakers; cable sealing end; substation building with an overall footprint of 95.00sqm; a blastwall measuring 8.00m in overall height; 2no. lightning masts measuring 18.00m in overall height; palisade fencing measuring 2.60m in overall height; pole-mounted security cameras and lamp posts. The UGC installation would consist of 1 no. trench (0.6m wide; 1.22m deep) measuring approximately 724m in overall length to carry 3 no. 110mm power ducts and 2 no. communication ducts, connecting the proposed substation to an existing 38kv ESB substation at Campile. The typical trefoil trench will need to be adapted to a flat formation to accommodate for any service crossings encountered along the route. A</p>	<p>The planners report for the project stated that the proposed project "<i>individually or combined with other projects, is not likely to impact upon the two Natura 2000 sites or their qualifying interests and that significant effects can be excluded</i>". As such, no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

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		<p>typical width of trench for a flat formation trench would be approx 1.15m with varying depths. Ancillary development consists of a 5.00m wide access road off an existing access road to the Greenlink convertor station; levelling of site to create 2 no. platforms at +16.00m and +12.00m ASL; retaining wall to facilitate reduction of site levels along southern and south-western boundaries; an earthen bund on the north and eastern boundaries and all other associated works, including landscaping proposals. A temporary construction compound would be constructed within the site boundary for construction phase of the development, after which it would be removed.</p>	
Wexford County Council	20230644	Permission is sought for the construction of 42 no. residential dwellings comprising of 8 no. 3 bedroom semi detached units, 12 no. 2 bedroom terraced units and 3 no. two storey apartment blocks containing 8 no. 1 bedroom and 14 no. 2 bedroom apartments, together with all ancillary site works	<p>An Appropriate Assessment screening report produced in support of the development states that due to the "<i>limited extent of the proposed works and the substantial distance to the nearest Natura 2000 sites, no element of the proposed project, alone or in-combination, is likely to give rise to any impacts on the Natura 2000 sites</i>". As such, no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Wexford County Council	20240309	Permission for development consisting of construction of a Battery Energy Storage System (BESS), landscaping works and all other associated ancillary infrastructure on lands measuring approximately 1.34Ha. in overall area within the townland of Great Island. The BESS would comprise 44no. individual battery storage units and 22no. inverter units on concrete foundations, with each battery storage unit measuring approximately 2.60m in overall height, 2.4m in width and 6.00m in overall length with heating, ventilation and air-conditioning (HVAC) units. Ancillary development consists of a 2.6m palisade perimeter security fencing and all other ancillary works. Site works to create a platform at +12.00m ASL, an internal access road, an earthen bund on the north and eastern boundaries and all other associated works, including landscaping proposals, drainage details and a temporary construction compound were granted permission under a previous planning application (Wexford County Council Ref. 20231294)	An Appropriate Assessment screening report was produced in support of this development. The report concluded that there will be no predicted effects on any Natura 2000 site due to the "distance between the proposed development and European site", the "lack of hydrological connectivity" and "no predicted emissions". Therefore, "the Proposed Development, individually or in-combination with other plans or projects, [will not] have a significant effect on a European site". As such, no potential for in-combination effects is identified.
Wexford County Council	20240650	Permission for the development of a long duration energy storage facility located in Knockmullen, New Ross, Co. Wexford. A ten year planning permission is being sought for the proposed development which will consist of the following elements: the installation and operation of 1 no. battery energy storage system compound containing battery energy storage containers, 1 no. electrical substation and compound connected to the national grid system via 300m of underground cable to the ESB Knockmullen 38kV substation, electrical transformers and inverter units, underground cabling and ducting, boundary fencing, security entrance	An Appropriate Assessment screening report was produced in support of this development. The report stated that "AA is not required" as there is there is "no risk of giving rise to any significant or impacts within the River Barrow and River Nore SAC, on any of the Qualifying Interests for the SAC or on any other European Sites". As such, no potential for in-combination effects is identified.

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>gates, CCTV, internal access road and all associated ancillary site development, landscaping and reinstatement works. The operational lifespan of the development will be 35 years. The site of the proposed has a total area of 1.8 hectares</p>	
<p>Wexford County Council</p>	<p>20241230</p>	<p>Permission for works to uprate the existing Great Island - Kellis 220kV overhead line (OHL). Within County Wexford, the proposed development will take place within the following townlands: Great Island, Ballykeeroge, Carnagh Lacken, Kilmannock, Ballykeerogebeg, Mylerspark Knockroe, Ballyedock, Ballykeerogemore, Cushenstown, Rathgaroge, Ballynamona, Garryduff Millquarter, Gobbinstown, Horeswood, Aclamon Dunanore or Goldentown, Ballyleigh, Coolerin Tellarought, Springpark, Ballywilliam, Coolerin South Nash, Robinstown Little, Curraun. The proposed development will consist of works along the ca. 70.3km Great Island - Kellis 220kV OHL between the existing Great Island 220kV substation in the townland of Great Island in southwest County Wexford and the Kellis 220kV substation located in the townland of Kellistown East, central County Carlow. The OHL has a total of 216 no. supporting structures. Within the functional area of Wexford County Council, there is 26.1km of existing OHL circuit, with 81 no. structures. Within the functional area of Carlow County Council there is a 44.2km of the existing OHL, with 135 no. structures. A separate planning application is being lodged with Carlow County Council. The proposed development within Co. Wexford will comprise: - the</p>	<p>An NIS was produced in support of this development. The report stated "<i>Following a comprehensive evaluation of the potential direct, indirect and in-combination effects on the qualifying interests of River Barrow and More SAC, Slaney River Valley SAC, Bannow Bay SAC and Bannow Bay SPA and the implementation of the prescribed mitigation measures, it has been concluded by the authors of this report that there will no adverse effects on the integrity of European sites as a result of the proposed development, either alone, or in combination with other plans or projects</i>". Given the mitigation measures prescribed, and the location of this development in relation to the proposed development (8km away) no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Kilkenny County Council	2560195	<p>replacement (restringing) of the existing overhead line circuit conductor wires with a new higher capacity conductor; - the strengthening of foundations at 6 no. locations; - shear block remedial works at 55 no. locations; - the strengthening of towers (i.e. member replacement) at 20 no locations; - the painting of all structures; - the replacement of insulating and ancillary hardware at structures; - all associated works within the existing Great Island 220kV substation to accommodate the uprated 220kV OHL including uprating of the Kellis bay in the Great Island 220kV substation; - all associated temporary site development works to gain access to the existing structures including vegetation clearance and management, disassembly and reassembly of gate posts/piers and removal and reinstatement of existing fencing; and - other temporary associated and ancillary site development works required for the purpose of the uprate of the existing circuit, including construction compounds, silt traps, silt fences, vegetation clearance and management, stone tracks, ground protection mats, infrastructure crossing support systems (i.e. guard poles) and temporary watercourse crossings. Where required, an aerial catenary stringing system (ACSS) will be used to facilitate stringing operations over major obstacles, e.g. busy national roads, wide rivers, etc.</p>	<p>An NIS was produced in support of this development. The report found the potential for effects to the River Barrow and River Nore SAC. Given that no viable source pathway receptor links were identified to this SAC associated with the Proposed Development, no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
Kilkenny County Council	2560263	<p>for development at this site. The development will consist of the importation of less than 200,000 tonnes (total) or less than 50,000 tonnes per annum of uncontaminated soils and subsoils for the purposes of quarry backfill with an agricultural or ecological end use. It is also intended to import up to 3.62 million tonnes of soil and stone (non-waste) construction by-product for quarry backfill. The site area is c. 14.8 ha and the proposed infill area is c. 7.4 ha. The proposed development at Catsrock Quarry also provides for:</p> <ol style="list-style-type: none">1. Construction of a weighbridge and associated office;2. Use of external paved and hardstanding areas surrounding the existing buildings for support activities related to the quarry backfill;3. The progressive restoration of the backfilled landform to agriculture and/or long-term natural habitat;4. Continued use and retention of established site infrastructure and services including, site office, staff welfare facilities, surface water run-off and passive water treatment systems, garage / workshop, wheelwash, hardstand areas, fuel and water storage tanks to service the proposed development;5. Decommissioning of any remaining fixed plant and infrastructure associated with former rock extraction activities;6. Implementation of a series of measures to enhance local biodiversity including the retention of habitats and features of biodiversity value, quarry face retention for nesting peregrine falcon, retention of the existing sand martin colony, creation of roost space / deployment of bat boxes for bats, creation of habitat / erection of bird nest boxes for breeding / roosting birds and erection of fence	<p>A Screening for Appropriate Assessment was provided for this development. The report stated that "<i>no source-pathway-receptor links between the project site and any European site which would undermine the conservation objectives for the Qualifying/Special Conservation Interests of the European sites listed in Table 3-1. Therefore, likely significant effects on European sites as a result of the proposed development at Catsrock Quarry, Co Kilkenny can be excluded for the project alone and in combination with other proposed or permitted plans and projects</i>". As such, no potential for in-combination effects is identified.</p>

RECEIVED: 22/09/2025

Planning Authority	Application Number	Development Description	Appropriate Assessment Findings and Potential for Significant Impact
		<p>along the site perimeter to include access points for mammals;</p> <p>7. Environmental monitoring of noise, dust, surface water and groundwater for the duration of the restoration works and for a short period thereafter; and</p> <p>8. All ancillary site works, landscaping and perimeter fencing.</p> <p>A permission of 10 years is sought to carry out the proposed quarry restoration works. The Planning Application will be accompanied by an Environmental Impact Assessment Report (EIAR)</p>	
Wexford County Council	20250368	Permission for the proposed construction for a construction waste and	<p>A screening for Appropriate Assessment was provided in support of this development. The report stated that "<i>no significant effects arising from the development site are likely to occur in relation to the Bannow Bay SPA and the Harbour and Slobbs SPA or indeed any other Natura 2000 site</i>" and that "<i>individually or in combination with other plans or projects, will not have a significant effect on any European site</i>". As such, there is no potential for in-combination effects identified.</p>
Wexford County Council	20250414	Permission for development which will consist of a 10 year permission	<p>A screening for Appropriate Assessment was provided in support of this development. The report stated that "<i>the project will not adversely affect the integrity of any European site, either alone or in combination with other plans or projects</i>". As such, there is no potential for in-combination effects identified.</p>
Wexford County Council	20250452	Permission for a proposed single storey ESB substation and switch room building	The planners report noted that "No AA required"

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