TOBIN

Ballyfasy Wind Farm,
Co. Kilkenny
Natura Impact Statement

MANOGATE LTD

A **FuturEnergy Ireland** and **ART Generation** Joint Venture

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1. INTRODUCTION

TOBIN has prepared this Natura Impact Statement (NIS) report, on behalf of Manogate Ltd, to inform the Appropriate Assessment of Ballyfasy Wind Farm in County Kilkenny and all associated infrastructure ('the Proposed Project[1]').

1.1 DESCRIPTION OF THE PROPOSED WIND FARM SITE

The proposed wind farm is located in the southern portion of County Kilkenny within the townlands of Ballyfasy Upper, Knockbrack, Bishopsmountain, Ballymartin and Ballywairy. The proposed wind farm is located ca. 3.5 km east of Mullinavat, ca. 4 km south of Listerlin and ca. 5 km northwest of Glenmore.

The proposed wind farm study area is ca. 348.14 ha in size and is present within Coillte forestry in addition to private agricultural lands, with a total footprint of ca. 53 ha for the proposed wind farm[2] infrastructure. Access to the proposed wind farm site is via the local roads L3417, L7499, and L3424.

1.2 OVERVIEW DESCRIPTION OF THE PROPOSED PROJECT

In summary, the Proposed Project comprises:

- A wind farm of 10 no. turbines, onsite 110 kilovolt (kV) substation and ancillary infrastructure such as turbine foundations, hardstanding areas, borrow pits and access roads. Design flexibility is being sought from An Coimisiún Pleanála for the turbine ranges (i.e., tip height, rotor diameter and hub height) used by the Proposed Project;
- Grid Connection Options (GCO) (two options being considered). Design flexibility is being sought from An Coimisiún Pleanála for the GCO's; and
- Works along the proposed Turbine Delivery Route (TDR). Further details on the TDR are included in Section 3.

Two GCO's are being considered to connect the proposed wind farm to the national grid. Only one GCO will be constructed for the Proposed Project. Proposed GCO One is a 12 km long underground cable connection from the proposed onsite 110 kV substation to the consented Castlebanny Wind Farm 110 kV substation (An Coimisiún Pleanála reference 309306-21). Proposed GCO Two will connect the onsite 110 kV substation to the existing 110 kV Great Island-Kilkenny Line via a loop in connection within the proposed wind farm site southeast of turbine (T) 6. Both GCO's have been fully assessed within this AA Screening. Along the proposed TDR, works will be required to allow for the delivery of oversize loads, these areas are referred to as proposed TDR works areas. The design flexibility ranges have been fully considered within this NIS. Further details on the Proposed Project are provided in Section 3 of this report.

[1] Reference to the 'Proposed Project' refers to the whole development which includes the wind farm site and all associated infrastructure (e.g., grid connection options and turbine delivery route).
[2] Reference to the 'proposed wind farm site' refers to the proposed turbines, on-site substation and ancillary infrastructure.

1.3 PURPOSE OF THIS REPORT

The purpose of this report is to provide supporting information to assist the competent authority, in this case An Coimisiún Pleanála, to carry out an Appropriate Assessment to determine if the Proposed Project is likely to result in adverse effects on the integrity of European sites in view of their conservation objectives[3], either individually or in-combination with other plans or projects.

1.4 RELEVANT LEGISLATION

The main pieces of relevant legislation are as follows:

- The Habitats Directive 92/43/EEC;
- The Birds Directive 2009/147/EC;
- European Communities (Birds and Natural Habitats) Regulations 2011 – 2022; and
- Planning and Development Acts 2000 - PART XAB.

[3] Natura 2000 sites, Special Areas of Conservation and Special Protection Areas, are referred to as European Sites in the Planning and Development Acts 2000 – 2025 and European Communities (Birds and Natural Habitats) Regulations 2011 – 2022 (Unofficial Consolidation-Updated to 28 July 2022).

2. METHODS

The approach taken in preparing this document complies with standard methods and best practice guidance, as listed in Section 8 References, and below:

- European Commission (European Commission, 2000). Communication from the Commission on the Precautionary Principle;
- European Commission (European Commission, 2006). Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg;
- European Commission (European Commission, 2007) Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission;
- European Commission (European Commission, 2013) Interpretation Manual of European Union Habitats. Version EUR 28;
- European Commission (European Commission, 2019) Managing Natura 2000 Sites – The provisions of Article 6 of the Habitats Directive 92/43/EEC;
- European Commission (European Commission, 2021a). 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, Office for Official Publications of the European Communities, Luxembourg. European Commission;
- European Commission (European Commission, 2021b). Guidance document on the strict protection of animal species of Community interest under the Habitats Directive. Publications Office of the European Union, Luxembourg;
- European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011);
- Planning and Development Acts 2000, as amended including Part XAB;
- Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government (DoEHLG, 2010);
- Applications for Approval for Local Authority Developments made to An Bord Pleanála under 177AE of the Planning and Development Act, 2000, as amended (Appropriate Assessment) – Guidelines for Local Authorities (An Bord Pleanála, 2013);
- Fossitt (2000). A Guide to Habitats in Ireland. The Heritage Council, Kilkenny; and
- Office of the Planning Regulator (OPR, 2021). Appropriate Assessment Screening for Development Management.

2.1 NATURA IMPACT STATEMENT (NIS)

The approach to preparing the NIS is summarised as follows:

- Identify the Zone of Influence (ZoI) of the Proposed Project and European sites within this area;
- Identify the qualifying interests (QIs)/special conservation interests (SCIs) of the European sites within the ZoI and review their conservation objectives;

- To examine the likely significant effects as identified in the Appropriate Assessment Screening Report (AASR);
- Set out the conservation objectives of the European sites;
- Describe how the Proposed Project will affect the key species and key habitats of the European sites;
- Describe how the integrity of European sites is likely to be affected by the Proposed Project;
- Describe what measures are to be introduced to avoid, reduce or remedy the adverse effects on the integrity of the European sites; and
- Consider findings and determine if potential for adverse effects on European sites remains after such measures have been implemented and in-combination with other plans/projects.

2.1.1 Zone of Influence

The Zone of Influence (ZoI) is defined by the Chartered Institute of Ecology and Environmental Management (CIEEM) as follows:

> *"The 'zone of influence' for a project is 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. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change*." (CIEEM, 2018).

Irish guidance (DoEHLG, 2010) states, for the zone of influence of plans:

> "*A distance of 15 km is currently recommended in the case of plans derives from UK guidance (Scott Wilson et al, 2006)*". The guidance goes on to state that "*for projects, the distance could be much less than 15 km, and in some cases less than 100 m, but this 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*."

The source-pathway-receptor model (OPR, 2021) was used to identify the ZoI of the Proposed Project. This conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this model must be in place. In the context of the Proposed Project, the model comprises:

- Source(s) – potential impacts from the Proposed Project, e.g., loss of habitat, direct emissions (water, air, noise and light);
- Pathway(s) – hydrological, physical or ecological connectivity between the Proposed Project and the European site; (e.g. water bodies and proximity); and
- Receptor(s) – qualifying interests (QIs) and/or special conservation interests (SCIs) of the European sites.

The ZoI of the Proposed Project (in the absence of any mitigation measures) is described hereunder.

- The ZoI for habitat loss (both permanent and temporary) is confined to the Proposed Project and specifically to the permanent loss of habitats within the footprint of turbines and associated infrastructure (i.e., access roads, hardstanding);
- The ZoI for water quality impacts are confined to waterbodies present within or downstream of the Proposed Project and are not considered effective once the first waterbody of depositional nature is reached (i.e., lake water body; transitional water body). The ZoI for hydrological impacts for the Proposed Project is therefore defined as waterbodies within, adjacent to, or downstream of the Proposed Project until the Nore Estuary (Water Framework Directive [WFD] waterbody code: IE_SE_100_0400) and Middle Suir Estuary (IE_SE_100_0550) are reached;
- The ZoI for groundwater impacts is confined to the same ground waterbody as the Proposed Project, which in this case is Inistioge (IE_SE_G_076) and Mullinavat (IE_SE_G_155);
- The ZoI for air quality (i.e., dust impacts) for the Proposed Project is defined to be within the spatial limit of 50 m to 250 m (IAQM, 2024). European sites are considered a 'high sensitivity receptor'. Therefore, the ZoI for dust impacts to vegetation is defined to be 50m surrounding all turbines and associated infrastructure (e.g., access roads and GCO's), areas of stockpiling, burrow pits and access roads utilised by machinery;
- The ZoI for disturbance to terrestrial mammals was defined with regard to the NRA guidance related to otter (NRA, 2008a) which states that noise impacts from construction works can impact breeding otter holts within 150 m of a noise source (i.e., proposed infrastructure);
- The ZoI for disturbance for avifauna varies for species (e.g., 200-300 m hen harrier [Goodship and Furness, 2022]; 500 m for non-breeding golden plover [Goodship and Furness, 2022]). Furthermore, the core foraging ranges for species recorded during bird surveys has been considered when assessing potential impacts and whether the species are SCIs of an associated SPA (e.g., The mean-max foraging range for lesser black-backed gull is 236 km [Woodward *et al.,* 2019]).

2.2 PROJECT TEAM

This report was prepared by Sarah Nolan MEng.Sc and B.Sc. (Hons), Project Ecologist with TOBIN. Sarah has nine years post-graduate experience in the environmental sector of which six years are within environmental consultancy. Sarah's experience includes public and private infrastructure developments where she conducts Screenings for Appropriate Assessment and Natura Impact Statements.

This report was reviewed by Laura Higgins B.A. (Mod.), Senior Ecologist with TOBIN. Laura's role in the project consisted of review of ecological reports. Laura is skilled in the preparation of Ecological Impact Assessments, Appropriate Assessment Screenings and NISs. She is a full member of the Chartered Institute of Ecology and Environmental Management; she is therefore also bound by their Code of Professional Conduct.

2.2.1 TOBIN Ecologists

Further credentials of TOBIN Ecologists are provided hereunder.

Sarah Nolan BSc. (Hons) Earth & Ocean Science, MEngSc. Water, Waste & Environmental Engineering

Sarah Nolan is a qualified Project Ecologist with nine years post-graduate experience in the environmental sector of which five years are within environmental consultancy. Sarah also carried out habitat, protected species and INNS surveys and aquatic surveys (biological water quality) for the Proposed Project. Sarah predominantly carries out Screenings for Appropriate Assessment, Natura Impact Statements and Preliminary Ecological Constraints Reports. Sarah is also responsible for the data analysis and report writing for the objective of No Net Loss of Biodiversity for a large infrastructure development in Ireland.

Áine Sands B.Sc. (Hons) Applied Ecology

Áine is a qualified Senior Ecologist with over 10 years post-graduate experience in ecology and environmental consultancy and holds Full CIEEM Membership. Áine has acted as Lead Ecologist for a number of large renewable energy projects, with a particular focus on wind farm development. Áine has a strong understanding of National and European legislation associated with biodiversity and is cognisant of relevant rulings by the Court of Justice of the European Union (CJEU). Áine's role in the project consisted of habitat, protected species and INNS surveys and senior review of the Biodiversity Chapter of the EIAR.

Laura Higgins B.A. (Mod.) Zoology, MCIEEM

Laura is a Senior Ecologist with TOBIN and holds Full CIEEM Membership. Laura has been responsible for the management and delivery of a wide range of project types for the public and private sectors including large scale residential, industrial and infrastructure developments.

Sinéad O'Reilly B.Sc. (Hons) Zoology M.Res Freshwater Ecology

Sinéad O' Reilly, a Senior Ecologist with TOBIN, undertook the aquatic surveys and contributed to this chapter. She is a qualified and experienced environmental consultant with thirteen years' post-graduate experience in freshwater sciences and environmental consultancy in Ireland. Sinead has a strong technical background as a freshwater ecologist and has extensive field experience in freshwater habitats and species across Ireland. Sinéad's role in the project consisted of aquatic surveys (biological river quality and white-clawed crayfish surveys).

2.2.2 Third-Party Specialists

Ecofact Environmental Consultants

The freshwater pearl mussel (FWPM) surveys were undertaken by Dr. William O'Connor with assistance from Grace Walsh M.Sc. and Eoin McMahon. Dr. William O'Connor is a senior environmental scientist who has over 20 year's professional ecological management experience. He is a graduate of the University of Wales, Cardiff where he was awarded an MSc. in Applied Hydrobiology, and the National University of Ireland, Galway where he received a PhD degree in Zoology.

APEM Ltd.

The ornithology assessment was completed to inform the Ornithology chapter of the EIAR accompanying this application, and has informed this NIS where relevant was undertaken by the following ornithologists:

Senior Ornithologist Billy Gardener (MSc.Res, BSc. [Hons]) who was the lead author of the EIAR and undertook the collision risk modelling. Billy has almost 4 years' experience in consultancy, including working on a number of Irish wind farm EIA projects. Billy has managed many surveys, undertaken impact assessments and conducted Collision Risk Modelling.

Principal Ornithology Consultant Matt Rea (MSc., BSc. [Hons], Associate member of CIEEM [ACIEEM]). Matt is an experienced ornithologist with ten years of consultancy experience who has worked on over 60 onshore wind projects across the UK and Ireland. He has managed surveys, undertaken numerous impact assessments and is experienced in Collision Risk Modelling. Matt assisted with technical guidance and was the reviewer for the Ornithology Chapter.

3. DESCRIPTION OF THE PROPOSED PROJECT

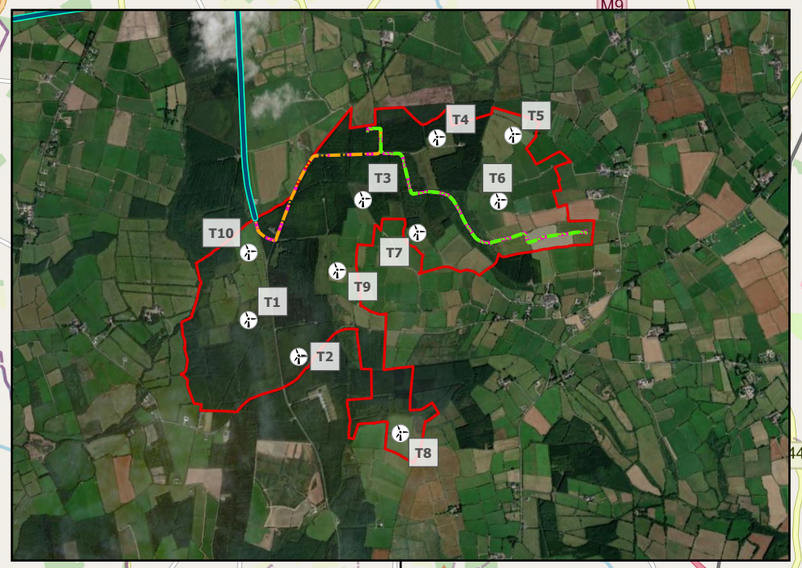
A summary of the Proposed Project, as relevant to this NIS, is as follows:

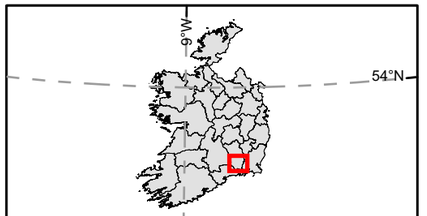
- The erection of 10 turbines. Each turbine will have a maximum blade tip height of between 170 m – 180 m, a rotor diameter of between 149 m – 163 m and a hub height of 95 m – 105.5 m;
- The project will have a MEC of between 57 – 72 MW;
- Associated hardstandings at each turbine location;
- New access roads and upgrading of existing access roads;
- Five permanent site entrances (a new permanent site entrance at the L3417 local road and modifications to existing site entrances along the L3417, L7499 and L3424 local roads);
- A new temporary road crossing location to allow turbine delivery along the L3417, L7499 and L3424 local roads;
- Permanent construction of approximately ca. 6.5 km of new internal site access roads and upgrade of approximately ca. 2 km existing internal site roads, to include passing bays and all associated drainage;
- Construction of temporary and permanent drainage and sediment control systems;
- Five onsite clear-span bridges;
- Installation of one permanent 100 m meteorological mast;
- Three temporary construction compounds with associated temporary site offices, parking areas and security fencing;
- Two temporary borrow pits including three deposition areas;
- Two GCO are included and assessed as part of the Proposed Project, however only one GCO will be constructed.:
    - The proposed GCO One proposes to install a 110 kV underground cable connection from the Proposed Project to the consented Castlebanny Wind Farm 110 kV substation 12 km to the north. The proposed GCO One is 12 km in length and mainly follows the public road network adjacent to T10 travelling north along the local road L3417, crossing at the junction at Three Friars Cross (regional road R704), continuing north along the L3418, before travelling west over agricultural grassland and conifer plantation and terminating at the consented Castlebanny 110 kV substation; or,
    - GCO Two proposes to connect to the existing 110 kV Great Island-Kilkenny overhead line via a loop in connection 2.3 km east of the proposed onsite substation, and thus, all the proposed cabling and associated infrastructure will be located within the proposed wind farm site.
- The construction of one permanent 110 kV electrical substation which will include:
    - 1 no. EirGrid Control Building containing, a Relay Room, Battery Room, Generator Room, Messroom, WC, and Workshop/ Store Room;
    - 1 no. Independent Power Producer (IPP) Control Building containing a Switchgear Room, Control Room, Office, Messroom, WC, Control Room, and Store Room;
    - Lightening Masts;

  - A Telecommunications mast;
  - Parking;
  - Security Palisade Fencing;
  - Electrical Plant and Infrastructure and Grid Ancillary Services Equipment;
  - Drainage Infrastructure;
  - All associated and ancillary works;

- Related site works and ancillary works including signage, berms, landscaping, and soil excavation;
- Forestry felling (both permanent and temporary) to facilitate construction and operation of the Proposed Project;
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm substation; and
- The TDR works areas which will include the trimming and/or removal of hedgerows and/or treelines at four private locations along the route. The proposed TDR follows the public road network from the Port of Waterford to the Proposed Project following the national road N29 (Port Road), the N25 (Waterford bypass), the M9 motorway to Mullinavat, County Kilkenny before exiting to the regional road R704 and then travelling south at the junction at Three Friars Cross along the local L3417.

A 35-year operational life from the date of full commissioning of the Proposed Project is being sought for all works (other than temporary and permanent works specified above), and the subsequent decommissioning. Permission is being sought for a period of 10 years. The full Proposed Project, including the design flexibility sought, has been considered and has been addressed as part of this NIS.







Legend

- Wind Farm Study Area
- Turbine locations
- Turbine Delivery Route

Grid Connection Options

- Option 1
- Option 2

0 2.5 5
Kilometres

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Client: Manogate Ltd.

Project: Ballyfasy Wind Farm

Title: Figure 3-1
Proposed Project Extent

Scale @ A3: 1:125,000

Prepared by: S.Pezzetta
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Map Ref: 11474-001-P.App.BO-OSM-TOB-A

Draft: A

4. OVERVIEW OF POTENTIAL IMPACTS

There are a number of elements associated with the Proposed Project's construction, operational and decommissioning phases that may give rise to direct and indirect impacts that have the potential to result in negative effects on European sites, either alone or in-combination with other plans and projects. The significance of these impacts depends on the scale of the impact as well as the ecological condition and the sensitivities of the QIs/SCIs. Elements of the Proposed Project that may give rise to impacts which have been considered with regards to potential effects on European sites are discussed hereunder.

4.1 CONSTRUCTION PHASE

The Construction Phase of the Proposed Project is anticipated to last approximately 24 months and is planned to commence in Q1 of 2028.

Potential construction phase impacts associated with the Proposed Project are discussed hereunder.

- Habitat loss (permanent and temporary);
- Habitat degradation due to water quality impacts;
- Habitat degradation due to dust deposition;
- Habitat degradation due to hydrogeological impacts; and
- Disturbance (noise and lighting).

4.1.1 Habitat Loss

The area of the proposed wind farm study area is 348.14 ha in total, however, the total footprint of the proposed wind farm site is 53 ha with the total area of direct and permanent habitat loss (i.e., hardstands, access roads and clear-span bridges) will be 31.47 ha of which 20 ha is low ecological value conifer plantation and 8.26 ha is improved agricultural grassland. Due to the abundance of this habitat type in the surrounding environment, there is no potential for this loss of habitat to impact upon QI/SCI species. The proposed GCO's and TDR works areas will result in the temporary loss of habitat, namely, hedgerow (430.25 m) and treeline (448.35 m) mosaic habitats.

All habitat which will be lost as a result of the Proposed Project will be outside the boundaries of European sites. No Annex I habitat or habitat within the boundary of a European site will be lost as a result of the Proposed Project.

4.1.2 Habitat Degradation Due to Water Quality Impacts

Construction activities pose a significant risk to watercourses, particularly through contaminated surface water entering a watercourse, which can contribute to the deterioration of water quality and physical alteration to the riverbed and bank morphology with the potential to alter erosion and deposition rates locally and downstream.

As part of the Proposed Project, site clearance of topsoil and subsoil will be necessary including the removal of large volumes of subsoil for the construction of turbine hardstands, construction compounds and borrow pits. Site clearance, excavation activities and the stockpiling of material have the potential to result in the runoff of sediment and nutrients, if not appropriately

managed, which could result in an increase of suspended solids and nutrients depositing within nearby watercourses.

There is also the potential for spills and leaks of oils, fuels and chemicals from storage areas or plant and equipment to impact on aquatic habitats. Entry of cement-based products to drains or other surface water features within the Proposed Project represents a risk to the aquatic environment at and downstream of the release.

There are four river waterbodies which are present within or crossed by the Proposed Project that lead downstream to European sites, namely;

- The Lower River Suir SAC (site code: 002137) which is connected to the Proposed Project via the Blackwater (Kilmacow)_020 River (WFD waterbody code: IE_SE_16B020091) (EPA river waterbody: Ballyknockbeg [16_1485]) and the Smartscastle Stream_010 (IE_SE_16S070500) (EPA river waterbody: Smartscastle [Stream] [16_3474]); and
- The River Barrow and River Nore SAC (002162) which is connected to the Proposed Project via the Arrigle_010 River (IE_SE_15A020100) (EPA river waterbody: Smithstown 15 [15_1470]) and Arrigle_020 River (IE_SE_15A020250) (EPA river waterbody: Mullenhakill [15_637]).

If contaminated surface water were to enter the abovementioned watercourses, it would have the potential to lead to the degradation of water quality reducing the overall ecological quality of watercourses which supports QI species (e.g., otter [*Lutra lutra*], Atlantic salmon [*Salmo salar*], white-clawed crayfish [*Austropotamobius pallipes*], lamprey species [*Lampetra sp.*] and freshwater pearl mussel [*Margaritifera margaritifera*]) associated with the Lower River Suir SAC and the River Barrow and River Nore SAC.

4.1.3 Habitat Degradation Due to Hydrogeological Impacts

Construction of the turbine bases will require excavation of the surrounding soil from the foundation and crane hardstanding area to founding level. Turbine foundations are expected to be excavated to depths of up to 5 m and borrow pits will be excavated to depths of up to 6 m, either of which could temporarily influence groundwater levels in the immediate vicinity. However, it is anticipated that groundwater impacts will not extend beyond 200 m.

4.1.4 Habitat Degradation Due to Dust Deposition

This impact is applicable to the River Barrow and River Nore SAC only considering the close proximity of the SAC to the Proposed Project, particularly the proposed GCO One which is located adjacent (ca. 1 m) to this European site. Dust deposition arising from construction works, primarily that of excavation works, could negatively impact vegetation by coating foliage which can adversely affect photosynthesis and the structure and function of the habitat. The Institute of Air Quality Management guidelines (IAQM, 2024) outline ecological receptor sensitivity based on the distance from the dust source whereby 'High' sensitivity is present at 20 m from the source and 'Medium' sensitivity at 50 m from the source. The greatest impact is from demolition and earth works (IAQM, 2024). In line with the ZoI for air quality impacts, dust deposition is considered to be effective within 50 m of any construction phase activities.

4.1.5 Disturbance (Noise and Lighting)

The proposed construction works will result in an increase in noise levels during the construction phase, as well as an increase in personnel and traffic movement to and from the Proposed Project. It is proposed to use rock breaking to extract materials from the borrow pits. The noise emission levels, at a distance of 10 m from the Proposed Project, will range from 75 to 85 dB $L_{Aeq,T.}$ The rock breaking will be conducted south of T6 and T7.

It is likely that temporary construction lighting will be required during the construction works. Fugitive lighting could deter the movement of nocturnal fauna species in the area. A temporary increase in noise levels, disturbance and lighting within the Proposed Project may result in disturbance to wildlife within the immediate vicinity.

4.2 Operational Phase

Potential operational phase impacts associated with the Proposed Project are discussed hereunder. The Proposed Project is expected to be operational for at least 35 years.

4.2.1 Habitat Loss

There will be no additional loss of habitats during the operational phase, with the exception of the maintenance vegetation clearance within 100 m of the proposed turbines. Maintenance activity will be infrequent and low intensity, such maintenance activities will be confined to turbine locations, substations and other hardstanding infrastructures. Therefore, there is no potential for habitat loss impacts during the operational phase.

4.2.2 Habitat Degradation due to Water Quality Impacts

During the operational phase of the Proposed Project, the management of surface water will be carried out in accordance with the proposed design and associated management features such as settlement ponds. The drainage design, discussed further in Section 6.2.1, will ensure that any surface water arising from the Proposed Project during operation will be contained and treated and then spread across adjacent vegetated lands via level spreader/diffuser which will help slow and distribute runoff evenly ultimately resulting in the percolation to ground or travel into drainage ditches and/or nearby waterbodies (refer to the SWMP in Appendix A-X). This method will ensure released water from the Proposed Project will not result in any impact on existing downstream activities; there will be no direct discharges from the Proposed Project. Therefore, there is no potential for water quality impacts during the operational phase.

4.2.3 Disturbance (Noise and Lighting)

During the operational phase, disturbance will arise from low levels of operational traffic and ongoing maintenance in addition to turbine noise. Lighting will be required within the proposed wind farm site, and this will be provided by lamp standards located around the substation and exterior wall mounted lights which will have sensors. The lights will normally remain off and be controlled by a switch at the gate when entering the substation. The new lighting will result in a localised increase in artificial lighting within the immediate surrounding area.

4.2.4 Collision Risk

The potential for birds to collide with turbines is one of the main impacts during the operational phase of the Proposed Project. The presence of turbines in the landscape has the potential to deter birds from using the area and its surroundings, resulting in disturbance and displacement impact. Disturbance can result in a significant impact if it reduces the availability of resources for avian receptors or if it impacts on a migration route or between a roost and feeding site.

A collision risk model (CRM) was carried out by APEM Ltd. to provide an indication of the likely collision risk imposed by the Proposed Project on sensitive SCI bird species. The results from this CRM can be found in Appendix A-XII Collision Risk Model Report.

4.3 Decommissioning Phase

The Proposed Project is expected to be operational for 35 years. Following this period, the wind turbines may be replaced with a new set of machines, subject to planning permission being obtained, or the proposed wind farm site will be decommissioned fully, with the exception of the electricity substation, site roads, hardstands and drainage being left in situ. Decommissioning will include the dismantling of infrastructure, minor excavation activities and the removal of waste offsite. Impacts during decommissioning phase on habitats are expected to be of a lesser extent and magnitude to those anticipated during the construction phase, and of a shorter duration. The potential decommissioning phase impacts are:

- Habitat loss (permanent and temporary);
- Habitat degradation due to water quality impacts;
- Habitat degradation due to dust deposition;
- Habitat degradation due to hydrogeological impacts; and
- Disturbance (noise and lighting).

5. CONCLUSION OF THE APPROPRIATE ASSESSMENT SCREENING REPORT

An Appropriate Assessment (AA) Screening Report (Appendix A-IX) was prepared by TOBIN, on behalf of Manogate Ltd. The conclusion of the AA Screening Report is as follows:

'*Likely significant effects on the European sites (Lower River Suir SAC, River Barrow and River Nore SAC, River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA) within the ZoI of the Proposed Project cannot be excluded based on a preliminary assessment and objective criteria of the potential impacts arising from the Proposed Project, alone and in-combination with other plans and projects, in view of the conservation objectives of the relevant sites. Therefore, it is considered that the Proposed Project should progress to the next stage of the process to determine if it will adversely affect the integrity of the eight European sites and to propose mitigation.*

We therefore submit that the competent authority, in this case An Coimisiún Pleanála, can determine that an Appropriate Assessment is required for the Lower River Suir SAC (002137), the River Barrow and River Nore SAC (002162), the River Nore SPA (004233), the Wexford Harbour and Slobs SPA (004076), the Saltee Islands SPA (004002), Poulaphouca Reservoir SPA (004063), Ballycotton Bay SPA (004022) and Cork Harbour SPA (004030) and that the Proposed Project, individually or in-combination with other plans or projects and in view of its conservation objectives, has the potential to have likely significant effects. Therefore, a Stage 2 Appropriate Assessment is required'.

6. NATURA IMPACT STATEMENT

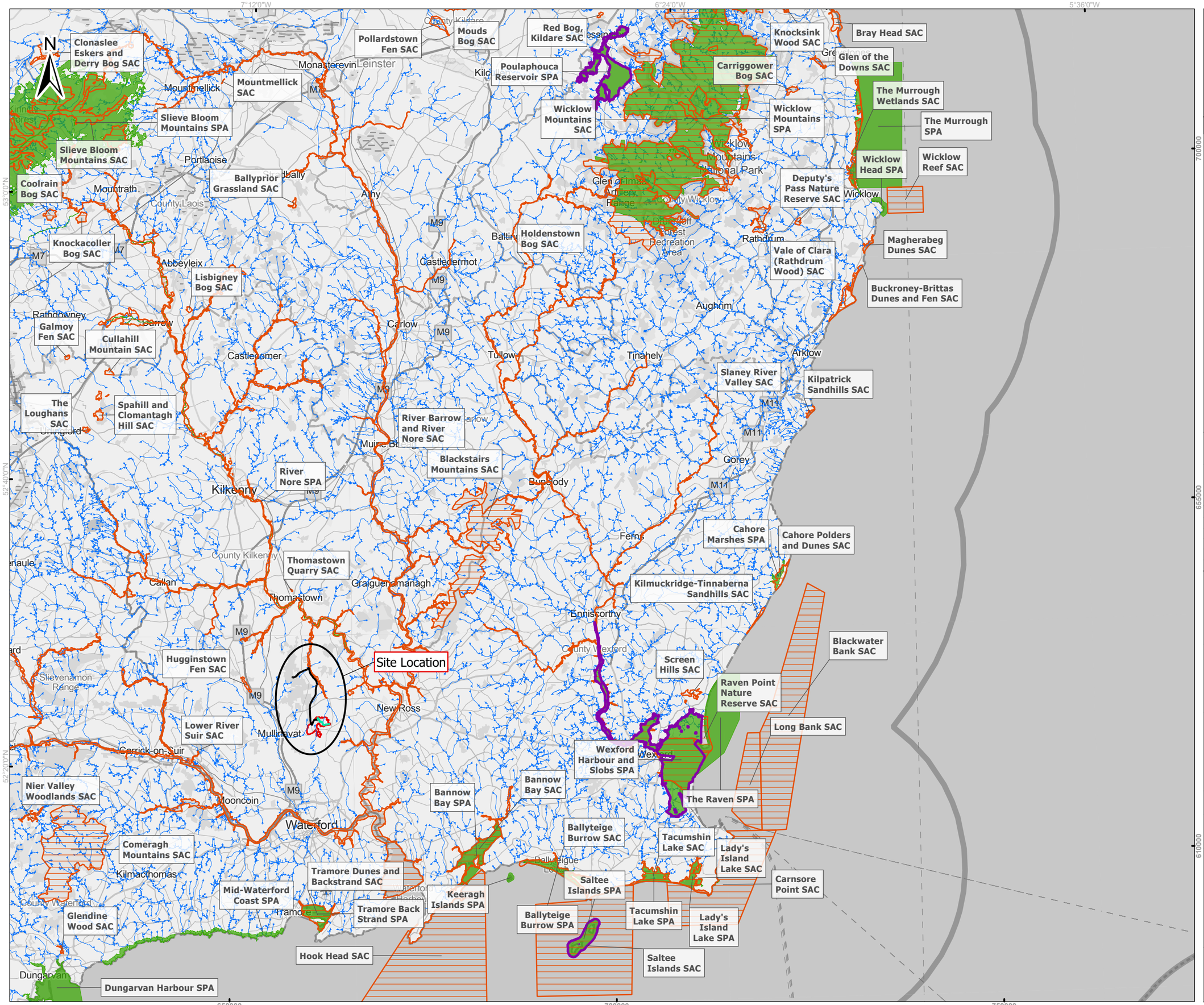
The Natura Impact Statement sets out the potential effects of the Proposed Project (either alone or in-combination with other projects or plans) on the integrity of the 'screened in' European sites. The potential to adversely affect the integrity of the European sites is determined with respect to the conservation objectives of the sites and to their structure and function. The focus is on demonstrating, with supporting evidence and proposed mitigation, that there will be no adverse effects on the integrity of the Lower River Suir SAC, the River Barrow and River Nore SAC, the River Nore SPA Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA should the Proposed Project proceed.

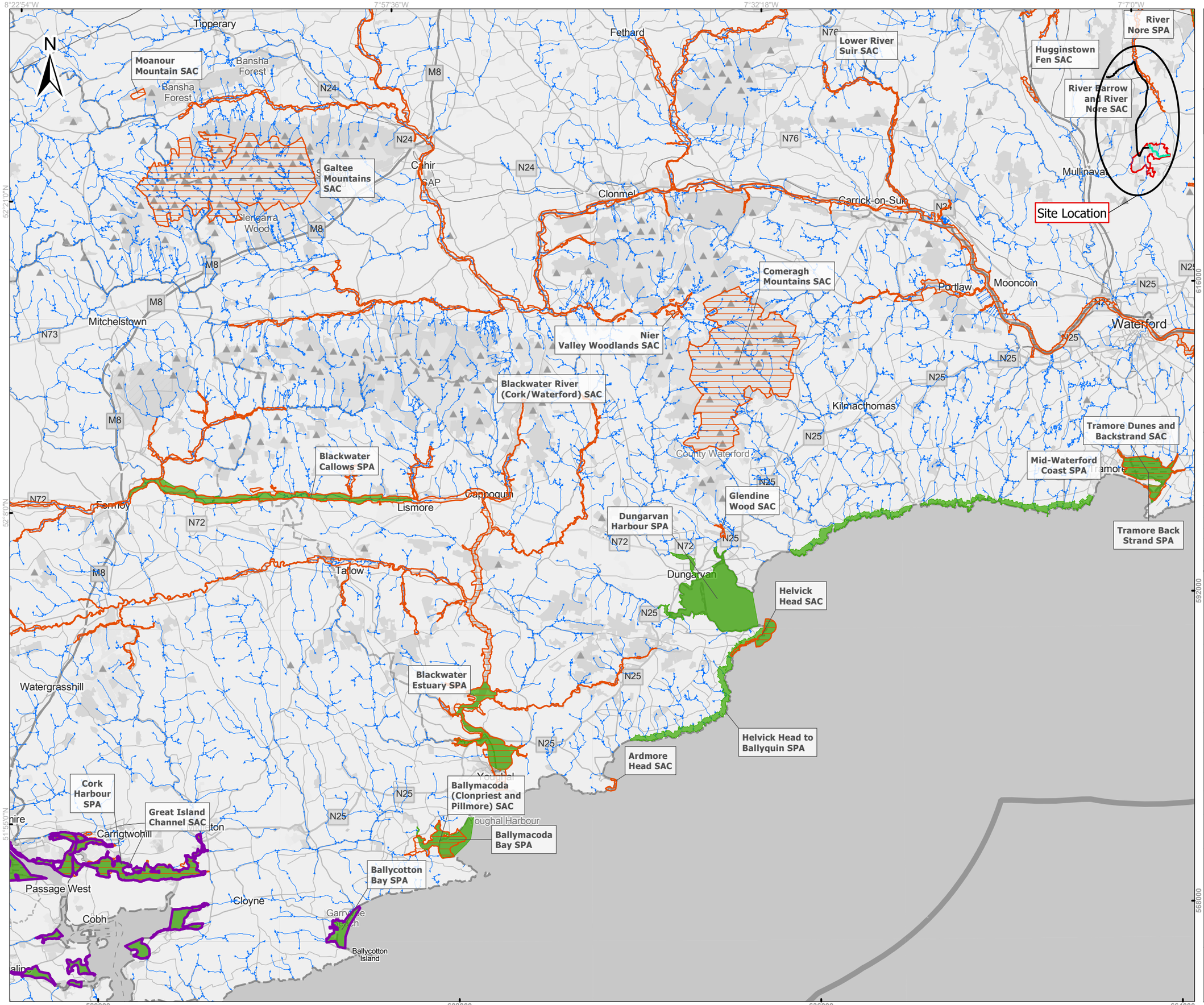
6.1 ASSESSMENT OF THE EFFECTS OF THE PROJECT ON THE INTEGRITY OF EUROPEAN SITES

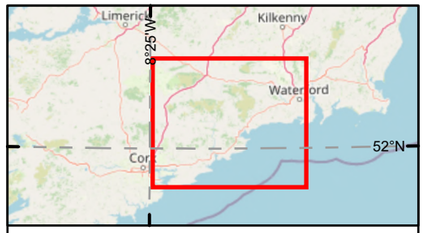
Based on the conclusion of the Screening Report set out in Section 5 above, it is considered that the Competent Authority, in this case An Coimisiún Pleanála, will be required to carry out an Appropriate Assessment to determine whether the Proposed Project would adversely affect the integrity of the eight European sites screened in, Lower River Suir SAC, River Barrow and River Nore SAC, River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA, should the Proposed Project proceed.

6.1.1 European Sites Within the ZoI and Assessment of Potential Effects

The Proposed Project involves the construction, operation and decommissioning of Ballyfasy wind farm and all associated elements as described in Section 3 of this document. Potential impacts, as described in Section 4 of this document, which have the potential to affect the Lower River Suir SAC, the River Barrow and River Nore SAC, the River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA are described hereunder and illustrated in Figure 6-1 to Figure 6-3 .


N
7°12'0"W
6°24'0"W
5°36'0"W
53°0'0"N
52°40'0"N
52°20'0"N
700000
650000
Clonaslee Eskers and Derry Bog SAC
Pollardstown Fen SAC
Mouds Bog SAC
Red Bog, Kildare SAC
Knocksink Wood SAC
Bray Head SAC
Glen of the Downs SAC
Carriggower Bog SAC
Poulaphouca Reservoir SPA
Mountmellick SAC
Slieve Bloom Mountains SPA
Wicklow Mountains SAC
Wicklow Mountains SPA
The Murrough Wetlands SAC
The Murrough SPA
Slieve Bloom Mountains SAC
Wicklow Head SAC
Wicklow Reef SAC
Coolrain Bog SAC
Ballyprior Grassland SAC
Deputy's Pass Nature Reserve SAC
Holdenstown Bog SAC
Knockacoller Bog SAC
Magherabeg Dunes SAC
Vale of Clara (Rathdrum Wood) SAC
Lisbigney Bog SAC
Buckroney-Brittas Dunes and Fen SAC
Galmoy Fen SAC
Cullahill Mountain SAC
Slaney River Valley SAC
Kilpatrick Sandhills SAC
The Loughans SAC
Spahill and Clomantagh Hill SAC
River Barrow and River Nore SAC
Blackstairs Mountains SAC
River Nore SPA
Thomastown Quarry SAC
Cahore Marshes SPA
Cahore Polders and Dunes SAC
Kilmuckridge-Tinnaberna Sandhills SAC
Site Location
Hugginstown Fen SAC
Screen Hills SAC
Blackwater Bank SAC
Raven Point Nature Reserve SAC
Lower River Suir SAC
Long Bank SAC
Wexford Harbour and Slobs SPA
Nier Valley Woodlands SAC
Bannow Bay SAC
Bannow Bay SPA
The Raven SPA
Ballyteige Burrow SAC
Tacumshin Lake SAC
Lady's Island Lake SAC
Comeragh Mountains SAC
Carnsore Point SAC
Tramore Dunes and Backstrand SAC
Saltee Islands SPA
Mid-Waterford Coast SPA
Keeragh Islands SPA
Tramore Back Strand SPA
Ballyteige Burrow SPA
Tacumshin Lake SPA
Lady's Island Lake SPA
Glendine Wood SAC
Hook Head SAC
Saltee Islands SAC
Dungarvan Harbour SPA
Portlaoise
Mountrath
Abbeyleix
Carlow
Castlecomer
Kilkenny
Callan
Thomastown
Graiguenamanagh
Ferns
Enniscorthy
New Ross
Wexford
Waterford
Dungarvan
Arklow
Gorey
Tinahely
Rathdrum
Aughrim
Wicklow
Mooncoin
Kilmacthomas
Cahir
Clonmel
Tullow
Leinster
Mountmellick
Monasterevin
Athy
Castledermot
Baltinglass
Glen of Imaal Artillery Range
Slievenamon Range
Mullinavat
Cahir
Cappoquin
Youghal
Ballyvaghan
Ballyhaise
Ballyhaise
Ballyhaise





Legend

- Wind Farm Study Area

Grid Connection Options

- Option 1
- Option 2
- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)
- SPAs with bird species recorded during surveys
- Rivers

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	03/11/2025	First issue	S.P	A.M

Client: Manogate Ltd.

Project: Ballyfasy Wind Farm

Title: Figure 6-2: European Sites Within the Source-Pathway-Receptor Zone of the Proposed Project (b)

Scale @ A3: 1:270,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

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Map Ref: 11474-002..AA-EU.S-ZOI-TOB-A

Draft: A

7°8'6"W
7°4'48"W
52°2'648"N
52°2'516"N
633600
630400
659200
662400
N
Garrandarragh
River Barrow and River Nore SAC
ARRIGLE_020
ARRIGLE_010
BLACKWATER (KILMACOW)_010



Legend

- Wind Farm Study Area
- Turbine locations

Grid Connection Options

- Option 1
- Special Areas of Conservation (SACs)
- Rivers

0 250 500
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	03/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 6-3:
Location of the Proposed GCO One in Proximity to the River Barrow and River Nore SAC

Scale @ A3: 1:17,090

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

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Map Ref: 11474-003..AA-EU.S-GCR-TOB-A

Draft: A

6.1.1.1 Lower River Suir SAC

The Blackwater (Kilmacow)_020 River and the Smartscastle Stream_010 River draining the Proposed Project flow into the Lower River Suir SAC. There will be no direct or indirect loss of any habitat listed as a QI of the SAC.

The Proposed Project however has the potential to result in a degradation of water quality due to the potential release of sediment laden surface water and/or hydrocarbons into watercourses draining the Proposed Project. The release of sediment laden water or otherwise polluted surface water has the potential to reduce water quality in the watercourses during the construction and decommissioning phases of the Proposed Project. The reduction in water quality, if severe enough, has the potential to affect the aquatic QIs of the SAC such as FWPM, sea lamprey (*Petromyzon marinus*), brook lamprey (*Lampetra planeri*), river lamprey (*Lampetra fluviatilis*), white-clawed crayfish (*Austropotamobius pallipes*), twaite shad (*Alosa fallax*), and Atlantic salmon (*Salmo salar*) and those that rely on aquatic species as a food source such as otter (*Lutra lutra*). Furthermore, otter could be impacted if the species came into direct contact with pollutants.

Given the distance from the Proposed Project to the SAC boundary (ca. 10 km southwest as the crow flies) where groundwater dependent terrestrial ecosystems (GWDTE) and species dependent on such are present and given that groundwater impacts are not anticipated beyond 200 m of excavations, there is no potential for hydrogeological impacts.

Overall, the potential impacts to the Lower River Suir SAC is habitat degradation due to water quality impacts.

6.1.1.2 River Barrow and River Nore SAC

The Arrigle_010 and Arrigle_020 watercourse draining and crossed by the Proposed Project flows into the River Barrow and River Nore SAC. There will be no direct or indirect loss of any habitat listed as a QI of the SAC.

Similarly to the Lower River Suir SAC, the Proposed Project however has the potential to result in a degradation of water quality due to the potential release of sediment laden surface water, hydrocarbons and/or dust deposition into watercourses draining the Proposed Project. The release of sediment laden water or otherwise polluted surface water has the potential to reduce water quality in the watercourses during the construction and decommissioning phases of the Proposed Project. The reduction in water quality, if severe enough, has the potential to affect the aquatic QIs of the SAC such as FWPM, lamprey (sea, brook, river) species, white-clawed crayfish, twaite shad, and Atlantic salmon and those that rely on aquatic species as a food source such as otter. Furthermore, otter could be impacted if the species came into direct contact with pollutants.

The proposed GCO one is located adjacent (ca. 1 m) to the SAC boundary, however minor works will take place within the road only and no deep excavations will be carried out. Given the distance from the proposed wind farm site to the SAC boundary (ca. 2.4 km northeast as the crow flies) where groundwater dependent terrestrial ecosystems (GWDTE) and species dependent on such are present and given that groundwater impacts are not anticipated beyond 200 m of excavations, there is no potential for hydrogeological impacts.

Whilst the proposed GCO one is located adjacent (ca. 1 m) to the SAC boundary, The greatest air quality/dust impact is from demolition and earth works (IAQM, 2024). In line with the ZoI for

air quality impacts, dust deposition is considered to be effective within 50 m of any construction phase activities. At the closest point, the River Barrow and River Nore SAC is located ca. 1 m from the proposed GCO One, however works will be of minor excavation and will be conducted within the road only which would result in minimal dust creation. Any dust deposition is likely to occur primarily on non-sensitive habitat types (i.e., not dust sensitive) such as hedgerows and grassy verges, which are also not QIs of the River Barrow and River Nore SAC. For this reason, there is no potential for dust impacts.

Overall, the potential impacts to the River Barrow and River Nore SAC is habitat degradation due to water quality impacts.

6.1.1.3 River Nore SPA

The Arrigle_010 and Arrigle_020 watercourse draining and crossed by the Proposed Project flows into the River Nore SPA. This SPA is designated for one SCI species only; kingfisher (*Alcedo atthis*). Similar to the above-mentioned European sites, there is potential for the degradation of water quality during the construction and decommissioning phases of the Proposed Project which could impede upon feeding resources of this species.

Overall, the potential impacts to the River Nore SPA is habitat degradation due to water quality impacts.

6.1.1.4 Wexford Harbour and Slobs SPA

This European site is located at a significant distance (ca. 34 km east) from the Proposed Project with no hydrological connectivity identified. However, the SCI species lesser black-backed gull, was frequently recorded during bird surveys for the Proposed Project. Due to this species' very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull recorded on the proposed wind farm site has the potential to be part of the SCI population associated with Wexford Harbour and Slobs SPA . For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

6.1.1.5 Saltee Islands SPA

This European site is located at a significant distance (ca. 42 km southeast) from the Proposed Project with no hydrological connectivity identified. However, the SCI species lesser black-backed gull, was frequently recorded during bird surveys for the Proposed Project. Due to this species very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull recorded on the proposed wind farm site has the potential to be part of the SCI population associated with Saltee Islands SPA. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

6.1.1.6 Poulaphouca Reservoir SPA

This European site is located at a significant distance (ca. 81 km northeast) from the Proposed Project with no hydrological connectivity identified. However, the SCI species lesser black-backed gull, was frequently recorded during bird surveys for the Proposed Project. Due to this species very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull recorded on the proposed wind farm site has the potential to

be part of the SCI population associated with Poulaphouca Reservoir SPA. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

6.1.1.7 Ballycotton Bay SPA

This European site is located at a significant distance (ca. 83 km southwest) from the Proposed Project with no hydrological connectivity identified However, the SCI species lesser black-backed gull, was frequently recorded during bird surveys for the Proposed Project. Due to this species very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull recorded on the proposed wind farm site has the potential to be part of the SCI population associated with Ballycotton Bay SPA. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

6.1.1.8 Cork Harbour SPA

This European site is located at a significant distance (ca. 88 km southwest) from the Proposed Project with no hydrological connectivity identified. However, the SCI species lesser black-backed gull, was frequently recorded during bird surveys for the Proposed Project. Due to this species very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull recorded on the proposed wind farm site has the potential to be part of the SCI population associated with Cork Harbour SPA. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

6.1.2 Conservation Objectives

The detailed conservation objectives for the Lower River Suir SAC, the River Barrow and River Nore SAC, the River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA were reviewed and are summarised below, with full details included in Appendix A-I to Appendix A-VIII. The aforementioned European sites contain valid and up-to-date site specific conservation objectives, as discussed hereinafter.

6.1.2.1 Lower River Suir SAC

The conservation objectives for the Lower River Suir and the list of specific attributes and targets defining the conservation objectives for each QI (likely to be affected) is listed within the supporting information (NPWS, 2017) available on the NPWS website. Site specific conservation objectives have been set by the NPWS for each of the listed QIs of the Lower River Suir SAC.

The conservation objectives for the Lower River Suir SAC (NPWS, 2017) can be summarised as follows:

- To restore/maintain the favourable conservation condition of the habitats and species listed as qualifying interests for the Lower River Suir SAC, which is defined by a list of specific attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-I).

An assessment of whether the potential impacts, identified in Section 4 could adversely affect the integrity of the SAC was undertaken in relation to the attributes, measures and targets that

would be expected to define the favourable conservation condition of the QIs of the SAC. This assessment is presented in Table 8-1 in Appendix A-I of this report.

6.1.2.2 River Barrow and River Nore SAC

Site specific conservation objectives have been set by the NPWS for each of the listed QIs of the River Barrow and River Nore SAC. The NPWS conservation objectives for the River Barrow and River Nore SAC (NPWS, 2025a) can be summarised as follows:

- To restore/maintain the favourable conservation condition of the habitats and species listed as qualifying interests for the River Barrow and River Nore SAC, which is defined by a list of specific attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-II).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SAC was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the QIs of the SAC. This assessment is presented in Table 8-2 in Appendix A-II of this report.

6.1.2.3 River Nore SPA

Site specific conservation objectives have been set by the NPWS for each of the listed SCI of the River Nore SPA. The NPWS conservation objectives (NPWS, 2024a) for the River Nore SPA can be summarised as follows:

- To maintain the favourable conservation condition of kingfisher in River Nore SPA, which is defined by a list of attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-III).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SPA was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the SCI of the SPA. This assessment is presented in Table 8-3 in Appendix A-III of this report.

6.1.2.4 Wexford Harbour and Slobs SPA

Site specific conservation objectives have been set by the NPWS for each of the listed SCI of the Wexford Harbour and Slobs SPA. The NPWS conservation objectives (NPWS, 2012) for the Wexford Harbour and Slobs SPA can be summarised as follows:

- To maintain the favourable conservation condition of the SCI species of Wexford Harbour and Slobs SPA, which is defined by a list of attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-IV).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SPA was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the SCI of the SPA. This assessment is presented in Table 8-4 in Appendix A-IV of this report.

6.1.2.5 Saltee Islands SPA

Site specific conservation objectives have been set by the NPWS for each of the listed SCI of the Saltee Islands SPA. The NPWS conservation objectives (NPWS, 2011a) for the Saltee Islands SPA can be summarised as follows:

- To maintain the favourable conservation condition of the SCI species of Saltee Islands SPA, which is defined by a list of attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-V).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SPA was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the SCI of the SPA. This assessment is presented in Table 8-5 in Appendix A-V of this report.

6.1.2.6 Poulaphouca Reservoir SPA

Site specific conservation objectives have been set by the NPWS for each of the listed SCI of the Poulaphouca Reservoir SPA. The NPWS conservation objectives (NPWS, 2024b) for the Poulaphouca Reservoir SPA can be summarised as follows:

- To restore/maintain the favourable conservation condition of the SCI species of Poulaphouca Reservoir SPA, which is defined by a list of attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-VI).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SPA was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the SCI of the SPA. This assessment is presented in Table 8-6 in Appendix A-VI of this report.

6.1.2.7 Ballycotton Bay SPA

Site specific conservation objectives have been set by the NPWS for each of the listed SCI of the Ballycotton Bay SPA. The NPWS conservation objectives (NPWS, 2014a) for the Ballycotton Bay SPA can be summarised as follows:

- To maintain the favourable conservation condition of the SCI species of Ballycotton Bay SPA, which is defined by a list of attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-VII).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SPA was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the SCI of the SPA. This assessment is presented in Table 8-7 in Appendix A-VII of this report.

6.1.2.8 Cork Harbour SPA

Site specific conservation objectives have been set by the NPWS for each of the listed SCI of the Cork Harbour SPA. The NPWS conservation objectives (NPWS, 2014b) for the Cork Harbour SPA can be summarised as follows:

- To maintain the favourable conservation condition of the SCI species of Cork Harbour SPA, which is defined by a list of attributes and targets provided in the supporting documents on the NPWS website (refer to Appendix A-VIII).

An assessment of whether the potential impacts, identified in Section 4, could adversely affect the integrity of the SPA was undertaken in relation to the attributes, measures and targets that would be expected to define the favourable conservation condition of the SCI of the SPA. This assessment is presented in Table 8-8 in Appendix A-VIII of this report.

6.1.3 Potential Direct and Indirect Effects

The Proposed Project has the potential to affect key species and habitats of the Lower River Suir SAC, the River Barrow and River Nore SAC, the River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA. The key species and habitats likely to be affected in the Lower River Suir SAC, the River Barrow and River Nore SAC, the River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA are discussed below.

6.1.3.1 Lower River Suir SAC

The Proposed Project has the potential to result in effects on some of the QIs of the Lower River Suir SAC. The QIs of this SAC are (* denotes priority habitat) (NPWS, 2017):

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330];
- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260];
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430];
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0];
- *Taxus baccata* woods of the British Isles [91J0]*;
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]*;
- Freshwater pearl mussel (*Margaritifera margaritifera*) [1029];
- White-clawed Crayfish *(Austropotamobius pallipes*) [1092];
- Sea lamprey (*Petromyzon marinus*) [1095];
- Brook lamprey (*Lampetra planeri*) [1096];
- River lamprey (*Lampetra fluviatilis*) [1099];
- Twaite shad (*Alosa fallax fallax*) [1103];
- Atlantic salmon (*Salmo salar*) [1106]; and
- Otter (*Lutra lutra*) [1355].

6.1.3.1.1 Marine Qualifying Interest Habitats

The QI habitat Atlantic salt meadows [1330] are present within the Lower Suir Estuary (Little Island - Cheekpoint) (IE_SE_100_0500) (NPWS, 2017), both of which are outside the ZoI of the Proposed Project as they are located within the first waterbody of depositional nature (i.e., Lower Suir Estuary). There is therefore no potential for direct or indirect effects to occur to these QI habitats, and they will not be considered further within this assessment.

6.1.3.1.2 Terrestrial Qualifying Interest Habitats

The QIs old sessile oak woods [91A0] and *Taxus baccata* woods [91J0] are terrestrial habitats which are present in the upper reaches of the SAC boundary in the townland of Inchinsquillib, County Tipperary ca. 73 km northwest of the Proposed Project and within Cahir Park, County Tipperary ca. 55 km west (NPWS, 2017) respectively, both of which are outside the ZoI for the Proposed Project as there is no pathway for effects. There is therefore no potential for direct or indirect effects to occur to these QI habitats, and they will not be considered further within this assessment.

6.1.3.1.3 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

This habitat is not mapped within the SAC and has the potential to be present within a large number of lowland rivers and fast flowing tributaries within the SAC (NPWS, 2017). There is potential for the degradation of water quality during the construction and decommissioning phases of the Proposed Project which could result in an indirect effect to this QI habitat. For this reason, this habitat will be considered further in this assessment (Section 6.1.4).

6.1.3.1.4 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)

This habitat has been mapped at Fiddown, County Kilkenny along the riparian margin of the Upper Suir Estuary (IE_SE_100_0600) and Suir_SC_140 subcatchment (NPWS, 2017). There is no hydrological pathway identified between the Proposed Project and this waterbody or subcatchment. For this reason, there is no potential for direct or indirect effects to this QI habitat of this SAC, and it is not considered further within the assessment.

6.1.3.1.5 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

The extent of this habitat has not been mapped within the SAC, but it is considered to occur with alluvial forests (discussed above) in Fiddown, County Kilkenny and in Carrick-on-Suir and Tibberaghny Marshes (NPWS, 2017) all of which are within a different subcatchment (Suir_SC_140 and _160, Lingaun_SC_010 and Pil_SC_010) to which there is no pathway identified from the Proposed Project. However, as the full extent of this habitat within the SAC is unknown, and utilising the precautionary approach, there is potential for the degradation of water quality during the construction and decommissioning phases of the Proposed Project which could result in an indirect effect to this QI habitat. For this reason, this habitat will be considered further in this assessment.

6.1.3.1.6 Freshwater Pearl Mussel (*Margaritifera margaritifera*)

Following the FWPM surveys (full report can be found in Appendix A-XIV) undertaken by Ecofact Environment Consultants Ltd., it was concluded that there is no suitable habitat for FWPM recorded within the Smartscastle Stream_010 and Blackwater (Kilmacow)_020 Rivers. Within the SAC, the FWPM catchment, habitat and distribution is known within the Clodiagh catchment (NPWS, 2017) whereby no hydrological connectivity exists from the Proposed Project. Due to the absence of the species during the surveys and of any records from the Blackwater [Kilmacow]_SC_010 sub-catchment the presence of FWPM in the ZoI of the Smartscastle Stream_010 and Blackwater (Kilmacow)_020 Rivers is ruled out.

There is therefore no potential for direct or indirect effects to occur to this QI species, and it will not be considered further within this assessment.

6.1.3.1.7 White-clawed Crayfish (*Austropotamobius pallipes*)

White-clawed crayfish were not recorded at any site during trapping and hand searching surveys at the four crayfish survey sites (refer to aquatic survey sites 7, 10, 11 and 12 in Figure 2-2 in the Screening for Appropriate Assessment report which accompanies this planning application [Appendix A-IX]) along the Blackwater (Kilmacow)_020 and Smartscastle

Stream_010 Rivers that lead downstream to this SAC and which were deemed to have suitable crayfish habitat.

Although the species was not identified during the surveys, white-clawed crayfish was previously recorded within the grid squares encompassing the Proposed Project by the NBDC and it is also recorded throughout the SAC boundary (NPWS, 2017). The SAC populations are not within an area whereby a pathway has been identified from the Proposed Project. The nearest record is within the Clodiagh (Portlaw)_050 River (IE_SE_16C030750). The waterbodies (Blackwater [Kilmacow]_020 and Smartscastle Stream_010 Rivers) draining the Proposed Project which lead downstream to the Lower River Suir SAC are not hydrologically connected to this waterbody, or any other waterbody within the SAC where white-clawed crayfish have been recorded. However, given the record of this species by the NBDC and utilising the precautionary approach, there is potential for the degradation of water quality during the construction and decommissioning phases of the Proposed Project which could result in an indirect effect to this QI species. For this reason, this species will be considered further in this assessment.

6.1.3.1.8 Lamprey (Sea [*Petromyzon marinus*], Brook [*Lampetra planeri*], and River [*Lampetra fluviatilis*])

Suitable habitat was noted within the Blackwater (Kilmacow)_020 River and the Smartscastle Stream_010 River (aquatic survey site 7, 10 and 11) however the sites did not contain lamprey ammocetes. Two lamprey ammocoetes were recorded at aquatic site 4 (Arrigle_010) ca. 2.7 km downstream of the Proposed Project. The remaining sites did not contain lamprey ammocetes.

The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey and lead to potential indirect effects to this species. For this reason, lamprey species will be considered further in this assessment.

6.1.3.1.9 Twaite Shad (*Alosa fallax fallax*)

The preferred habitat for twaite shad is estuarine or coastal waters with breeding occurring in the lower reaches of rivers (IFI, 2025). Furthermore, there are barriers to migration which prevent upstream migration of this species, thereby limiting the species to the lower stretches (NPWS, 2017) whereby potential impacts are not present after the first waterbody of depositional nature. Twaite shad are not considered to occur within the ZoI for direct or indirect effects of the Proposed Project. For this reason, twaite shad will not be considered further within this assessment.

6.1.3.1.10 Atlantic Salmon (*Salmo salar*)

It was determined from the aquatic surveys that suitable salmonid spawning habitat was present at aquatic sites 8-10 (Smartscastle Stream_010) and site 11 (Blackwater [Kilmacow]_020) which are hydrologically connected to this SAC, whereby heterogenous fluvial habitat ideal for spawning and early life stages of salmonids existed. These watercourses contained riffles, an instream mix of cobble and gravel base with dappled shade from over hanging banks or riparian vegetation provide good salmonid nursery habitat. A juvenile brown trout parr was recorded during kick sampling within the Smartscastle Stream_010 at aquatic site 5, which provided a good indication of salmonid spawning and nursery conditions.

The Proposed Project has the potential to result in the degradation of water quality and habitat, which could result in direct and indirect effects to this species. For this reason, Atlantic salmon will be considered further within this assessment.

6.1.3.1.11 Otter (*Lutra lutra*)

No holts, spraints, slides, couches or other evidence of otter activity was recorded within the Proposed Project, however the potential for waterbodies to support otter commuting and foraging habitat were recorded within the Blackwater (Kilmacow)_020 (aquatic survey site 11) which leads downstream to this SAC. As such, there is potential for displacement/disturbance to this species if they were utilising the Blackwater (Kilmacow)_020 River for commuting/foraging purposes. Furthermore, the degradation of water quality could lead to a decline in the availability of fish biomass for otter, resulting in an indirect effect to this SAC species. Furthermore, otter could be impacted if the species came into direct contact with pollutants., leading to a direct effect to this SAC species. For this reason, otter will be considered further within this assessment.

6.1.3.2 River Barrow and River Nore SAC

The Proposed Project has the potential to result in effects on some of the QIs of the River Barrow and River Nore SAC. The QIs of this SAC are (* denotes priority habitat) (NPWS, 2025a):

- Estuaries [1130];
- Mudflats and sandflats not covered by seawater at low tide [1140];
- Reefs [1170];
- *Salicornia* and other annuals colonising mud and sand [1310];
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330];
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410];
- Killarney fern (*Trichomanes speciosum*) [1421];
- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation [3260];
- European dry heaths [4030];
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430];
- Petrifying springs with tufa formation (*Cratoneurion*)* [7220];
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles [91A0];
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)*;
- Freshwater pearl mussel (*Margaritifera margaritifera*) [1029];
- White-clawed Crayfish (*Austropotamobius pallipes*) [1092];
- Sea lamprey (*Petromyzon marinus*) [1095];
- Brook lamprey (*Lampetra planeri*) [1096];
- River lamprey (*Lampetra fluviatilis*) [1099];
- Twaite shad (*Alosa fallax fallax*) [1103];
- Atlantic salmon (*Salmo salar*) [1106];
- Otter (*Lutra lutra*) [1355]; and
- Desmoulin's whorl snail (*Vertigo moulinsiana*) [1016];

6.1.3.2.1 Marine Qualifying Interest Habitats

The QI habitats estuaries [1130], mudflats and sandflats [1140], reefs [1170], *Salicornia* mud and sand [1310], Atlantic [1330] and Mediterranean [1421] salt meadows are marine/transitional water habitats which are located outside the ZoI of the Proposed Project as they are located within and/or beyond the first waterbody of depositional nature (i.e., New Ross Port [IE_SE_100_0200]). There is therefore no potential for direct or indirect effects to occur to these QI habitats, and they will not be considered further within this assessment.

6.1.3.2.2 Terrestrial Qualifying Interest Habitats

The QIs old sessile oak woods [91A0], petrifying springs with tufa formation [7220], European dry heaths [4030] and Killarney fern [1421] are terrestrial habitats/species which are recorded within the SAC boundary whereby a pathway from the Proposed Project does not exist. Furthermore, petrifying springs with tufa formation are GWDTE which are recorded within the SAC boundary upstream of the Proposed Project and where groundwater impacts are not anticipated beyond 200 m of excavations.

Due to the lack of a source-pathway-receptor link, there is no potential for direct or indirect effects to occur to these QIs habitats/species, and they will not be considered further within this assessment.

6.1.3.2.3 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation

This habitat is not mapped within the SAC and has the potential to be present within a large number of lowland rivers and fast flowing tributaries within the SAC (NPWS, 2025a). There is potential for the degradation of water quality during the construction and decommissioning phases of the Proposed Project which could result in an indirect effect to this QI habitat. For this reason, this habitat will be considered further in this assessment (Section 6.1.4).

6.1.3.2.4 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)

Within the SAC this habitat has been mapped south of Inistioge, County Kilkenny (subcatchment Nore_SC_140 and Nore_SC_120) (NPWS, 2025a) whereby a hydrological pathway is present from the Arrigle_010 and Arrigle_020 Rivers. However, the transitional waterbody Nore Estuary (IE_SE_100_0400) is reached ca. 3.7 km north of this alluvial forest. This area of alluvial forest is therefore outside the ZoI for hydrological impacts. Furthermore, there is no pathway to the additional areas of alluvial forest within the SAC as they are located upstream of the Proposed Project. There is therefore no potential for indirect effects on this habitat as a result of the Proposed Project and it will not be considered further in this assessment.

6.1.3.2.5 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels

The extent of this habitat has not been mapped within the SAC, but is considered to occur with riverside woodlands, unmanaged river islands and floodplains of slow flowing stretches of river (NPWS, 2025a). For this reason, there is potential for this habitat to be present downstream of the Proposed Project where it could be indirectly affected. This habitat will be considered further in this assessment.

6.1.3.2.6 Freshwater Pearl Mussel (*Margaritifera margaritifera*)

Following the FWPM surveys undertaken by Ecofact Environment Consultants Ltd., it was concluded that there is no suitable habitat for FWPM within the Arrigle_010 River, both within and downstream of the Proposed Project. Locations at the River Barrow and River Nore SAC boundary were also examined which concluded no presence of FWPM. The conservation objectives document illustrates the presence of the FWPM catchment, habitat and distribution within the Ballymurphy, Mountain and Nore subcatchments which are located upstream of the Proposed Project (NPWS, 2025a).

Due to the absence of the species during the surveys and of any records from the Nore_SC_130 sub-catchment, the presence of FWPM in the Arrigle_010 and Nore_SC_130 is ruled out.

There is therefore no potential for direct or indirect effects to occur to this QI species, and it will not be considered further within this assessment.

6.1.3.2.7 White-clawed Crayfish (*Austropotamobius pallipes*)

White-clawed crayfish were not recorded at any site during trapping and hand searching surveys at the two crayfish survey sites (aquatic survey sites 2 and 4) along the Arrigle_010 River which leads downstream to this SAC and which were deemed to have suitable crayfish habitat.

Although the species was not identified during the surveys, white-clawed crayfish was previously recorded within the grid squares encompassing the Proposed Project by the NBDC and it is also recorded throughout the SAC boundary (NPWS, 2025a) including the Nore_240 (IE_SE_15N012400) River whereby a downstream connection from the Proposed Project is identified from the Arrigle_010 River.

There is therefore potential for indirect effects from the Proposed Project to the SAC population of this species to occur and it will be considered further within this assessment.

6.1.3.2.8 Lamprey (Sea [*Petromyzon marinus*], Brook [*Lampetra planeri*], and River [*Lampetra fluviatilis*])

Suitable habitat was noted within the Arrigle_010 River (aquatic survey site 4) whereby two lamprey ammocoetes were recorded ca. 2.7 km downstream of the Proposed Project.

The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey and lead to potential indirect effects to this species. For this reason, lamprey species will be considered further in this assessment.

6.1.3.2.9 Twaite Shad (*Alosa fallax fallax*)

The preferred habitat for twaite shad is estuarine or coastal waters with breeding occurring in the lower reaches of rivers (IFI, 2025). Furthermore, barriers to migration prevent upstream migration of this species thereby limiting the species to the lower stretches (NPWS, 2025a) whereby potential impacts are not present after the first waterbody of depositional nature. Twaite shad are not considered to occur within the ZoI for direct or indirect effects of the Proposed Project. For this reason, twaite shad will not be considered further within this assessment.

6.1.3.2.10 Atlantic Salmon (*Salmo salar*)

It was determined from the aquatic surveys that suitable salmonid spawning habitat was present within the Arrigle_010 at aquatic site 4 whereby heterogenous fluvial habitat ideal for spawning and early life stages of salmonids existed. The watercourse contained riffles, instream mix of cobble and gravel base with dappled shade from over hanging banks or riparian vegetation provide good salmonid nursery habitat. Brown trout were also visible swimming and jumping within the Arrigle_010 River, which provide an indicator for salmonid habitat suitability.

The Proposed Project has the potential to result in the degradation of water quality and habitat, which could result in indirect effects to this species. For this reason, Atlantic salmon will be considered further within this assessment.

6.1.3.2.11 Otter (*Lutra lutra*)

No holts, spraints, slides, couches or other evidence of otter activity was recorded within the Proposed Project, however the potential for waterbodies to support otter commuting and foraging habitat was recorded along the Arrigle_020 (proposed GCO one) and Arrigle_010. Otter commuting and foraging habitat was also noted by NPWS on the Arrigle_010 ca. 2.8 km downstream of the boundary of the Proposed Project which is also within the boundary of the River Barrow and River Nore SAC (NPWS, 2025b). As such, there is potential for displacement/disturbance to this species if they were utilising the Arrigle_010 and Arrigle_020 River for commuting/foraging purposes. Furthermore, the degradation of water quality could lead to a decline in the availability of fish biomass for otter, resulting in an indirect effect to this SAC species. Furthermore, otter could be impacted if the species came into direct contact with pollutants., leading to a direct effect to this SAC species. For these reasons there is potential for direct and indirect effects to otter as a result of the Proposed Project and this species will therefore be considered further within this assessment.

6.1.3.3 River Nore SPA

The Proposed Project has the potential to result in direct and indirect effects on the SCI species kingfisher (NPWS, 2024a). This species was not recorded during bird surveys of the Proposed Project and therefore there is no potential for disturbance impacts. There is, however, potential for this species feeding resources to be affected by the deterioration in water quality, in addition for the potential for direct contact with pollutants. As such this species will be considered further within this assessment.

6.1.3.4 Wexford Harbour and Slobs SPA

The Proposed Project has the potential to result in direct and indirect effects on some of the SCI species of the Wexford Harbour and Slobs SPA. The SCI species of this SPA are (NPWS, 2012):

- Little grebe (*Tachybaptus ruficollis*) [A004];
- Great crested grebe (*Podiceps cristatus*) [A005];
- Cormorant (*Phalacrocorax carbo*) [A017];
- Grey heron (*Ardea cinerea*) [A028];
- Bewick's swan (*Cygnus columbianus bewickii*) [A037];
- Whooper swan (*Cygnus cygnus*) [A038];
- Light-bellied brent goose (*Branta bernicla hrota*) [A046];
- Shelduck (*Tadorna tadorna*) [A048];

- Teal (*Anas crecca*) [A052];
- Mallard (*Anas platyrhynchos*) [A053];
- Pintail (*Anas acuta*) [A054];
- Scaup (*Aythya marila*) [A062];
- Goldeneye (*Bucephala clangula*) [A067];
- Red-breasted merganser (*Mergus serrator*) [A069];
- Hen harrier (*Circus cyaneus*) [A082];
- Coot (*Fulica atra*) [A125];
- Oystercatcher (*Haematopus ostralegus*) [A130];
- Golden plover (*Pluvialis apricaria*) [A140];
- Grey plover (*Pluvialis squatarola*) [A141];
- Lapwing (*Vanellus vanellus*) [A142];
- Knot (*Calidris canutus*) [A143];
- Sanderling (*Calidris alba*) [A144];
- Dunlin (*Calidris alpina*) [A149];
- Black-tailed godwit (*Limosa limosa*) [A156];
- Bar-tailed godwit (*Limosa lapponica*) [A157];
- Curlew (*Numenius arquata*) [A160];
- Redshank (*Tringa totanus*) [A162];
- Black-headed gull (*Chroicocephalus ridibundus*) [A179];
- Lesser Black-backed gull (*Larus fuscus*) [A183];
- Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395];
- Wigeon (*Mareca penelope*) [A855]; and
- Little tern (*Sternula albifrons*) [A885].

6.1.3.4.1 Hen Harrier

Hen harrier was recorded seven times throughout the survey programme during vantage point (VP) surveys, with one individual observed hunting in the centre of the survey area[4] in October 2023. The core foraging range for hen harrier is 2 km with a maximum range of 10 km (SNH, 2016), therefore it is considered that the hen harrier recorded during bird surveys are not associated with the Wexford Harbour and Slobs SPA population. Furthermore, due to the low flight activity of this species within the proposed wind farm site, this species was not included within the CRM (Appendix A-XII) and there is no evidence that hen harrier are using the site more than occasionally. There is therefore no potential for direct or indirect effects to occur to hen harrier, and this species will not be considered further within this assessment.

6.1.3.4.2 Golden Plover

Golden plover was recorded foraging occasionally, with a peak count of 33 individuals. There is no evidence that the proposed wind farm site and surrounding area are regularly used by non-breeding golden plover as the majority of foraging records were on a single day of passage. This species was included in the CRM which concluded that the worst-case model predicted collision rates of 0.33 golden plover annually (one golden plover every 0.03 years) during the non-breeding season. However, the core foraging range for golden plover is 3 km with a maximum range of 12 km (SNH, 2016), therefore it is considered unlikely that the golden plover recorded during bird surveys are associated with the Wexford Harbour and Slobs SPA population as the

[4] The ornithology survey areas for the assessment have been determined based on the ZoI, ornithology survey areas and guidance on potential connectivity to designated sites outlined in SNH, 2016.

SPA is located 34 km east. There is therefore no potential for direct or indirect effects to occur to golden plover, and this species will not be considered further within this assessment.

6.1.3.4.3 Lesser Black-backed Gull

Lesser black-backed gull flight activity recorded across survey years showed seasonal variation, with 330 individuals observed during the breeding season and 1,243 during the non-breeding season. This activity is likely associated with commuting between roosting and foraging habitats. The mean-max foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore utilising the precautionary approach, sightings of this species within the proposed wind farm site are considered to be associated with the SCI population of this SPA.

Lesser black-backed gull was included in the CRM which concluded that the worst-case model predicted collision rates of 5.46 individuals annually (1.09 during the breeding season and 6.84 during the non-breeding season; one lesser black-backed gull every 0.66 years) during the non-breeding season. Given the high number of sightings during bird surveys, there is potential for direct and indirect effects to occur to lesser black-backed gull as a result of the Proposed Project and this species will therefore be considered further within this assessment.

6.1.3.4.4 Black-Headed Gull

Black-headed gull was recorded on six occasions, with a total of 18 birds, during VP surveys over the survey period of April 2023 and March 2025 (inclusive). The mean-max foraging range for black-headed gull is estimated to be ca. 18.5 km (Woodward *et al.,* 2019), however this is the offshore range for this species and inland commuting may differ. However, it is considered unlikely that the black-headed gull (six species) recorded during bird surveys are not associated with the Wexford Harbour and Slobs SPA population. Furthermore, due to its very low flight activity within the proposed wind farm site, it was not included in the CRM. For these reasons, there is therefore no potential for direct or indirect effects to occur, and black-headed gull will not be considered further within this assessment.

6.1.3.4.5 Grey Heron

Grey heron was recorded on three occasions during VP surveys over the survey period of April 2023 and March 2025 (inclusive). The foraging range for grey heron is unknown, however due to its very low flight activity within the proposed wind farm site, it was not included in the CRM. For this reason, there is therefore no potential for direct or indirect effects to occur, and grey heron will not be considered further within this assessment.

6.1.3.4.6 Curlew

Curlew was recorded on a single occasion during VP surveys over the survey period of April 2023 and March 2025 (inclusive). Due to its very low flight activity within the proposed wind farm site, it was not included in the CRM. The core foraging range for curlew is 1 km with a maximum range of 2 km (SNH, 2016); therefore, it is considered unlikely that the curlew recorded during bird surveys are those of the Wexford Harbour and Slobs SPA population as the SPA is located ca. 34 km east. For these reasons, there is therefore no potential for direct or indirect effects to occur, and curlew will not be considered further within this assessment.

6.1.3.4.7 All Other Species

The remaining 26 SCI species were not observed during bird surveys (i.e., VP, transect and hinterland) over the survey period of May 2020 and March 2025 (inclusive). The remaining

species are predominantly seabirds (e.g., cormorant, little tern, red-breasted merganser), waterbirds (e.g., coot, little grebe, pintail and wigeon) and waders (e.g., oystercatcher, lapwing, sanderling, dunlin). Due to their absence during bird surveys and lack of suitable habitat within the Proposed Project, there is therefore no potential for direct or indirect effects to occur, and these species will not be considered further within this assessment.

6.1.3.5 Saltee Islands SPA

The Proposed Project has the potential to result in indirect effects on one of the SCI species of the Saltee Islands SPA. The SCI species of this SPA (NPWS, 2011a) are:

- Fulmar (*Fulmarus glacialis*) [A009];
- Gannet (*Morus bassanus*) [A016];
- Cormorant (*Phalacrocorax carbo*) [A017];
- Shag (*Phalacrocorax aristotelis*) [A018];
- Lesser black-backed gull (*Larus fuscus*) [A183];
- Herring gull (*Larus argentatus*) [A184];
- Kittiwake (*Rissa tridactyla*) [A188];
- Guillemot (*Uria aalge*) [A199];
- Razorbill (*Alca torda*) [A200]; and
- Puffin (*Fratercula arctica*) [A204].

6.1.3.5.1 Lesser Black-backed Gull

Lesser black-backed gull flight activity recorded across survey years showed seasonal variation, with 330 individuals observed during the breeding season and 1,243 during the non-breeding season. This activity is likely associated with commuting between roosting and foraging habitats. The mean-max foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore utilising the precautionary approach, sightings of this species within the proposed wind farm site may be associated with the SCI population of this SPA.

Lesser black-backed gull was included in the CRM which concluded that the worst-case model predicted collision rates of 5.46 individuals annually (1.09 during the breeding season and 6.84 during the non-breeding season; one lesser black-backed gull every 0.66 years) during the non-breeding season. Given the high number of sightings during bird surveys, there is potential for direct and indirect effects to occur to lesser black-backed gull as a result of the Proposed Project and this species will therefore be considered further within this assessment.

6.1.3.5.2 All Other Species

The remaining nine SCI species were not observed during bird surveys (i.e., VP, transect and hinterland) over the survey period of May 2020 and March 2025 (inclusive). The remaining species are all seabirds. Due to their absence during bird surveys and the lack of suitable habitat within the Proposed Project, there is therefore no potential for direct or indirect effects to occur, and these species will not be considered further within this assessment.

6.1.3.6 Poulaphouca Reservoir SPA

The Proposed Project has the potential to result in indirect effects on one of the SCI species of Poulaphouca Reservoir SPA. The SCI species of this SPA (NPWS, 2024b) are:

- Greylag goose (*Anser anser*) [A043]; and
- Lesser black-backed gull (*Larus fuscus*) [A183].

6.1.3.6.1 Greylag Goose

This waterbird species was not recorded during bird surveys (i.e., VP, transect and hinterland) over the survey period of May 2020 and March 2025 (inclusive). Furthermore, there is no suitable habitat within or in proximity to the Proposed Project for this species. For these reasons, there is therefore no potential for direct or indirect effects to occur, and greylag goose will not be considered further within this assessment.

6.1.3.6.2 Lesser Black-backed Gull

Lesser black-backed gull flight activity recorded across survey years showed seasonal variation, with 330 individuals observed during the breeding season and 1,243 during the non-breeding season. This activity is likely associated with commuting between roosting and foraging habitats. The mean-max foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore utilising the precautionary approach, sightings of this species within the proposed wind farm site may be associated with the SCI population of this SPA.

Lesser black-backed gull was included in the CRM which concluded that the worst-case model predicted collision rates of 5.46 individuals annually (1.09 during the breeding season and 6.84 during the non-breeding season; one lesser black-backed gull every 0.66 years) during the non-breeding season. Given the high number of sightings during bird surveys, there is potential for direct and indirect effects to occur to lesser black-backed gull as a result of the Proposed Project and this species will therefore be considered further within this assessment.

6.1.3.7 Ballycotton Bay SPA

The Proposed Project has the potential to result in indirect effects on some of the SCI species of Ballycotton Bay SPA. The SCI species of this SPA (NPWS, 2014a) are:

- Teal (*Anas crecca*) [A052];
- Ringed plover (*Charadrius hiaticula*) [A137];
- Golden plover (*Pluvialis apricaria*) [A140];
- Grey plover (*Pluvialis squatarola*) [A141];
- Lapwing (*Vanellus vanellus*) [A142];
- Black-tailed godwit (*Limosa limosa*) [A156];
- Bar-tailed godwit (*Limosa lapponica*) [A157];
- Curlew (*Numenius arquata*) [A160];
- Turnstone (*Arenaria interpres*) [A169];
- Common gull (*Larus canus*) [A182];
- Lesser black-backed gull (*Larus fuscus*) [A183]; and
- Wetland and waterbirds [A999].

6.1.3.7.1 Golden Plover

Golden plover was recorded foraging occasionally, with a peak count of 33 individuals. There is no evidence that the proposed wind farm site and surrounding area are regularly used by non-breeding golden plover as the majority of foraging records were on a single day on passage. This species was included in the CRM which concluded that the worst-case model predicted collision rates of 0.33 golden plover annually (one golden plover every 0.03 years) during the non-breeding season. However, the core foraging range for golden plover is 3 km with a maximum range of 12 km (SNH, 2016), therefore it is considered unlikely that the golden plover recorded during bird surveys are those of Ballycotton Bay SPA population as it is located ca. 83 km

southwest. There is therefore no potential for direct or indirect effects to occur to golden plover, and this species will not be considered further within this assessment.

6.1.3.7.2 Lesser Black-backed Gull

Lesser black-backed gull flight activity recorded across survey years showed seasonal variation, with 330 individuals observed during the breeding season and 1,243 during the non-breeding season. This activity is likely associated with commuting between roosting and foraging habitats. The mean-max foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore utilising the precautionary approach, sightings of this species within the proposed wind farm site may be associated with the SCI population of this SPA.

Lesser black-backed gull was included in the CRM which concluded that the worst-case model predicted collision rates of 5.46 individuals annually (1.09 during the breeding season and 6.84 during the non-breeding season; one lesser black-backed gull every 0.66 years) during the non-breeding season. Given the high number of sightings during bird surveys, there is potential for direct and indirect effects to occur to lesser black-backed gull as a result of the Proposed Project and this species will therefore be considered further within this assessment.

6.1.3.7.3 Curlew

Curlew was recorded on a single occasion during VP surveys over the survey period of April 2023 and March 2025 (inclusive). Due to its very low flight activity within the proposed wind farm site, it was not included in the CRM. The core foraging range for curlew is 1 km with a maximum range of 2 km (SNH, 2016); therefore, it is considered unlikely that the curlew recorded during bird surveys are associated with the Ballycotton Bay SPA population as the SPA is located ca. 83 km southwest. For this reason, there is therefore no potential for direct or indirect effects to occur, and curlew will not be considered further within this assessment.

6.1.3.7.4 All Other Species

The remaining nine SCI species were not observed during bird surveys (i.e., VP, transect and hinterland) over the survey period of May 2020 and March 2025 (inclusive). The remaining species are predominantly waders (e.g., lapwing, godwit species and turnstone) with seabirds (e.g., common gull) and waterbirds (e.g., teal) also SCI species. Due to their absence during bird surveys and the lack of suitable habitat within the Proposed Project, there is therefore no potential for direct or indirect effects to occur, and these species will not be considered further within this assessment.

6.1.3.8 Cork Harbour SPA

The Proposed Project has the potential to result in indirect effects on some of the SCI species of Cork Harbour SPA. The SCI species of this SPA (NPWS, 2014b) are:

- Little grebe (*Tachybaptus ruficollis*) [A004];
- Great crested grebe (*Podiceps cristatus*) [A005];
- Cormorant (*Phalacrocorax carbo*) [A017];
- Grey heron (*Ardea cinerea*) [A028];
- Shelduck (*Tadorna tadorna*) [A048];
- Teal (*Anas crecca*) [A052];
- Pintail (*Anas acuta*) [A054];
- Red-breasted merganser (*Mergus serrator*) [A069];
- Oystercatcher (*Haematopus ostralegus*) [A130];

- Golden plover (*Pluvialis apricaria*) [A140];
- Grey plover (*Pluvialis squatarola*) [A141];
- Lapwing (*Vanellus vanellus*) [A142];
- Dunlin (*Calidris alpina*) [A149];
- Black-tailed godwit (*Limosa limosa*) [A156];
- Bar-tailed godwit (*Limosa lapponica*) [A157];
- Curlew (*Numenius arquata*) [A160];
- Redshank (*Tringa totanus*) [A162];
- Black-headed gull (*Chroicocephalus ridibundus*) [A179];
- Common gull (*Larus canus*) [A182];
- Lesser black-backed gull (*Larus fuscus*) [A183];
- Common tern (*Sterna hirundo*) [A193];
- Wigeon (*Mareca penelope*) [A855];
- Shoveler (*Spatula clypeata*) [A857]; and
- Wetland and waterbirds [A999].

6.1.3.8.1 Golden Plover

Golden plover was recorded foraging occasionally, with a peak count of 33 individuals. There is no evidence that the proposed wind farm site and surrounding area are regularly used by non-breeding golden plover as the majority of foraging records were on a single day on passage. This species was included in the CRM which concluded that the worst-case model predicted collision rates of 0.33 golden plover annually (one golden plover every 0.03 years) during the non-breeding season. However, the core foraging range for golden plover is 3 km with a maximum range of 12 km (SNH, 2016), therefore it is considered unlikely that the golden plover recorded during bird surveys are those of the Cork Harbour SPA population as the SPA is located ca. 88 km southwest. There is therefore no potential for direct or indirect effects to occur to golden plover, and this species will not be considered further within this assessment.

6.1.3.8.2 Lesser Black-backed Gull

Lesser black-backed gull flight activity recorded across survey years showed seasonal variation, with 330 individuals observed during the breeding season and 1,243 during the non-breeding season. This activity is likely associated with commuting between roosting and foraging habitats. The mean-max foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore utilising the precautionary approach, sightings of this species within the proposed wind farm site may be associated with the SCI population of this SPA.

Lesser black-backed gull was included in the CRM which concluded that the worst-case model predicted collision rates of 5.46 individuals annually (1.09 during the breeding season and 6.84 during the non-breeding season; one lesser black-backed gull every 0.66 years) during the non-breeding season. Given the high number of sightings during bird surveys, there is potential for direct and indirect effects to occur to lesser black-backed gull as a result of the Proposed Project and this species will therefore be considered further within this assessment.

6.1.3.8.3 Black-headed Gull

Black-headed gull was recorded on six occasions, with a total of 18 birds, during VP surveys over the survey period of April 2023 and March 2025 (inclusive). Due to its very low flight activity within the proposed wind farm site, it was not included in the CRM. For this reason, there is

therefore no potential for direct or indirect effects to occur, and black-headed gull will not be considered further within this assessment.

6.1.3.8.4 Curlew

Curlew was recorded on a single occasion during VP surveys over the survey period of April 2023 and March 2025 (inclusive). Due to its very low flight activity within the proposed wind farm site, it was not included in the CRM. The core foraging range for curlew is 1 km with a maximum range of 2 km (SNH, 2016); therefore, it is considered unlikely that the curlew recorded during bird surveys are those of the Cork Harbour SPA population as the SPA is located ca. 88 km southwest. For this reason, there is therefore no potential for direct or indirect effects to occur, and curlew will not be considered further within this assessment.

6.1.3.8.5 All Other Species

The remaining 20 SCI species were not observed during bird surveys (i.e., VP, transect and hinterland) over the survey period of May 2020 and March 2025 (inclusive). The remaining species are predominantly seabirds (e.g., cormorant, common tern and red-breasted merganser), waterbirds (e.g., shelduck, little grebe, pintail and teal) and waders (e.g., oystercatcher, lapwing, redshank and dunlin). Due to their absence during bird surveys and lack of suitable habitat within the Proposed Project, there is therefore no potential for direct or indirect effects to occur, and these species will not be considered further within this assessment.

6.1.4 Assessment of Adverse Effects on Site Integrity

The European guidance (2019) on managing European sites defines integrity of the site as '*the coherence of the site's ecological structure and function, across its whole area, or the habitats, complex of habitats and/or populations of species for which the site is or will be classified*' (EC, 2019). The guidance also goes on to describe the integrity of the site as involving its constitutive characteristics and ecological functions and advises that the decision as to whether it is adversely affected should focus on and be limited to the habitats and species for which the site has been designated and the site's conservation objectives.

6.1.4.1 Lower River Suir SAC

The integrity of the Lower River Suir SAC could be undermined if the accidental release of sediment and/or hydrocarbons from the Proposed Project occurred during the construction and decommissioning phases. The Proposed Project could cause a deterioration in water quality or deposition of sediment on suitable spawning habitat of key species (i.e., salmon and lamprey) causing population reduction of key species through mortality or reduction in the distribution of habitat and food biomass in addition to the direct contact with pollutants. The key habitats likely to be affected by sediment release into the aquatic environment may be reduced in area or potentially could disappear from the worst affected stretches of the SAC.

These impacts and effects described could undermine the conservation objectives for the QIs identified in Section 6.1.2.1 above, resulting in adverse effects on the integrity of the Lower River Suir SAC. Further details on the assessment of potential adverse effects on the QIs of the SAC can be found in Appendix A-I Table 8-1.

6.1.4.2 River Barrow and River Nore SAC

The integrity of the River Barrow and River Nore SAC could be undermined if the accidental release of sediment and/or hydrocarbons from the Proposed Project occurred during the

construction and decommissioning phases. The Proposed Project could cause a deterioration in water quality or deposition of sediment on suitable spawning habitat of key species (i.e., salmon and lamprey) causing population reduction of key species through mortality or reduction in the distribution of habitat and food biomass. The key habitats likely to be affected by sediment release into the aquatic environment may be reduced in area or potentially could disappear from the worst affected stretches of the SAC.

These impacts and effects described could undermine the conservation objectives for the QIs identified in Section 6.1.2.2 above, resulting in adverse effects on the integrity of the River Barrow and River Nore SAC. Further details on the assessment of potential adverse effects on the QIs of the SAC can be found in Appendix A-II Table 8-2.

6.1.4.3 River Nore SPA

The integrity of the River Nore SPA could be undermined if the accidental release of sediment and/or hydrocarbons from the Proposed Project occurred during the construction and decommissioning phases. The Proposed Project could cause the deterioration in water quality or deposition of sediment on suitable spawning habitat which could impede upon the feeding resources of kingfisher.

These impacts and effects described could undermine the conservation objectives for the SCI species identified in Section 6.1.2.3 above, resulting in adverse effects on the integrity of the River Nore SPA. Further details on the assessment of potential adverse effects on the SCI species of the SPA can be found in Appendix A-III Table 8-3.

6.1.4.4 Wexford Harbour and Slobs SPA

It was determined that the integrity of Wexford Harbour and Slobs SPA will not be undermined as a result of the construction, operational and decommissioning phases of the Proposed Project. Of the 32 SCI species for which this SPA is designated, only one species, lesser black-backed gull, had the potential to be affected by the Proposed Project (refer to Section 6.1.3.4). However, upon assessment of the adverse effects on the SCI species in view of the conservation objectives (Table 8-4 in Appendix A-IV), it was determined that there was no potential for adverse effects. This was primarily due to the CRM predicting that the fatality of a single bird during the non-breeding season was <0.01 % and during the breeding season was 0.03 %. Furthermore, due to their extensive foraging range (236 km) (Woodward *et al.,* 2019) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. It was determined that the Proposed Project will not result in adverse effects on the integrity of the Wexford Harbour and Slobs SPA in view of its conservation objectives.

6.1.4.5 Saltee Islands SPA

It was determined that the integrity of Saltee Islands SPA will not be undermined as a result of the construction, operational and decommissioning phases of the Proposed Project. Of the ten SCI species for which this SPA is designated, only one species, lesser black-backed gull, had the potential to be affected by the Proposed Project (refer to Section 6.1.3.5). However, upon assessment of the adverse effects on the SCI species in view of the conservation objectives (Table 8-5 in Appendix A-V), it was determined that there was no potential for adverse effects. This was primarily due to the CRM predicting that the fatality of a single bird during the non-breeding season was <0.01 % and during the breeding season was 0.03 %. Furthermore, due to their extensive foraging range (236 km) (Woodward *et al.,* 2019) and availability of suitable

habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. It was determined that the Proposed Project will not result in adverse effects on the integrity of the Saltee Islands SPA in view of its conservation objectives.

6.1.4.6 Poulaphouca Reservoir SPA

It was determined that the integrity of Poulaphouca Reservoir SPA will not be undermined as a result of the construction, operational and decommissioning phases of the Proposed Project. Of the two SCI species for which this SPA is designated, only one species, lesser black-backed gull, had the potential to be affected by the Proposed Project (refer to Section 6.1.3.6). However, upon assessment of the adverse effects on the SCI species in view of the conservation objectives (Table 8-7 in Appendix A-VI), it was determined that there was no potential for adverse effects. This was primarily due to the CRM predicting that the fatality of a single bird during the non-breeding season was <0.01 % and during the breeding season was 0.03 %. Furthermore, due to their extensive foraging range (236 km) (Woodward *et al.,* 2019) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. It was determined that the Proposed Project will not result in adverse effects on the integrity of Poulaphouca Reservoir SPA in view of its conservation objectives.

6.1.4.7 Ballycotton Bay SPA

It was determined that the integrity of Ballycotton Bay SPA will not be undermined as a result of the construction, operational and decommissioning phases of the Proposed Project. Of the 12 SCI species for which this SPA is designated, only one species, lesser black-backed gull, had the potential to be affected by the Proposed Project (refer to Section 6.1.3.7). However, upon assessment of the adverse effects on the SCI species in view of the conservation objectives (Table 8-7 in Appendix A-VII), it was determined that there was no potential for adverse effects. This was primarily due to the CRM predicting that the fatality of a single bird during the non-breeding season was <0.01 % and during the breeding season was 0.03 %. Furthermore, due to their extensive foraging range (236 km) (Woodward *et al.,* 2019) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. It was determined that the Proposed Project will not result in adverse effects on the integrity of Ballycotton Bay SPA in view of its conservation objectives.

6.1.4.8 Cork Harbour SPA

It was determined that the integrity of Cork Harbour SPA will not be undermined as a result of the construction, operational and decommissioning phases of the Proposed Project. Of the ten SCI species for which this SPA is designated, only one species, lesser black-backed gull, had the potential to be affected by the Proposed Project (refer to Section 6.1.3.8). However, upon assessment of the adverse effects on the SCI species in view of the conservation objectives (Table 8-8 in Appendix A-VIII), it was determined that there was no potential for adverse effects. This was primarily due to the CRM predicting that the fatality of a single bird during the non-breeding season was <0.01 % and during the breeding season was 0.03 %. Furthermore, due to their extensive foraging range (236 km) (Woodward *et al.,* 2019) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. It was determined that the Proposed Project will not

result in adverse effects on the integrity of Cork Harbour SPA in view of its conservation objectives.

6.2 MITIGATION

The mitigation measures proposed have regard to the European Commission 2021 Guidance (European Commission, 2021a) and the mitigation hierarchy more generally. The guidelines states that:

'The hierarchy of mitigation measures suggests first avoidance (i.e. preventing significant impacts from happening in the first place) and then reduction of impact (i.e. reducing the magnitude and/or likelihood of an impact)'

In addition, the guidelines further state that:

'Each mitigation measure must be described in detail, specifying how it will eliminate or reduce the adverse impacts identified, and how, when and by whom it will be implemented. The following aspects must be indicated.

The mitigation measures proposed are outlined in the following sections and summarised in Table 6-2. Furthermore, embedded mitigation incorporated into the design of the Proposed Project is discussed below.

6.2.1 Design Measures

Incorporated design measures (embedded mitigation) during the operational phase of the Proposed Project include a Sustainable Drainage System (SuDS) (refer to the Surface Water Management Plan [SWMP] in Appendix A-X) which will be installed during the construction phase. SuDS will ensure that any surface water arising from the Proposed Project during the operational phase will be contained and treated to ensure it can be dispersed from the Proposed Project without any impact on existing downstream activities.

It should be noted, in the Stage 1 Screening, the likelihood of significant effects on European sites was assessed based upon the source-pathway-receptor model only (OPR, 2021), and mitigation measures were not considered.

6.2.2 Standard Good Working Practices

Good work practices will be employed at all times on site during all phases of the Proposed Project. However, good practice to protect watercourses from sediment contamination will be particularly important during the construction and decommissioning of the Proposed Project. Good working practices to protect watercourses are embedded in the design of the Proposed Project and include the following documents:

- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016);
- Environmental Good Practice on Site Guide C811 (CIRIA, 2023);
- Ballyfasy Wind Farm Construction and Environmental Management Plan (CEMP) (Appendix A-XI); and
- Ballyfasy Wind Farm SWMP (Appendix A-X).

The CEMP submitted as part of the documentation supporting the planning application will be revised as required by the appointed contractor and will be treated as a live document to be

updated as required throughout the construction of the development. However, it is important to note that revisions to the CEMP will not reduce or remove any mitigation measures, it will only include additional mitigation measures required by planning conditions or identified as required at a later stage. The CEMP, SWMP and detailed drainage design for the Proposed Project incorporate a large number of tried and tested measures that are used as standard by industry for protection of water quality.

6.2.3 Surface Water Quality Mitigation Measures

During the construction phase of the Proposed Project surface water quality measures will be installed and maintained to ensure the protection of watercourses located within and downstream of the Proposed Project (i.e., Blackwater (Kilmacow)_020 River, Smartscastle Stream_010 River, Arrigle_010 River and Arrigle_020 River) which are hydrologically connected to the River Barrow and River Nore SAC, the Lower River Suir SAC and the River Nore SPA. Specific mitigation measures associated with the protection of water quality are further described below.

6.2.3.1 Management of Sedimentation

- No instream works will take place. Clear span bridges will be erected at five locations. The foundations of the clear span bridges will be positioned at least 2.5 m from a watercourse (IFI, 2016);
- All temporary crossings of watercourses will ensure the passage of water, fish and macroinvertebrates and will ensure erosion and sedimentation do not occur (IFI, 2016);
- Silt fences and double row silt fences will be erected along all areas where the construction works are within 20 m of the Arrigle_010 River, Arrigle_020 River, the Blackwater (Kilmacow)_020 River, the Smartscastle Stream_010 and/or within 10 m of a drainage ditch and 10 m around stockpiled material. All silt fences will be erected outside of flood zones. The silt fencing will remain in position during the full construction phase of the Proposed Project;
- Silt fences will be constructed using a permeable filter fabric (Hy-Tex Terrastop Premium silt fence or similar approved). No mesh type silt fences will be permitted. Silt fencing will be installed as per the manufacturer's guidelines (the bottom section buried at least 10 cm deep) prior to any ground disturbance works;
- All silt fencing will be installed under the supervision of an Ecological Clerk of Works (ECoW) who will employed by the contractor (refer to Section 6.2.7);
- Surface water or water released to watercourses will be within prescribed water quality limits (i.e. ≤25 mg/L Total Suspended Solids [TSS] in accordance with the Freshwater Fish Directive [2006/44/EC] and Salmonid Waters Regulations [1988]);
- The excavated subsoil will be utilised on site and used to create bunds around the proposed facilities to create surface water runoff barriers;
- Excavation works will not be carried out during or following heavy rainfall (i.e., if there is a yellow weather warning or higher in place or 5 mm in a 1-hour period);
- A minimum 10 m untouched vegetated buffer zone will be retained between the silt fence and the watercourse;
- No permanent storage of excavated material will be permitted within 50 m of the any watercourse within the Proposed Project or within 10 m from drainage ditches; and

- Stockpile management to prevent siltation of watercourses which will include; the establishment of vegetation on the exposed soil, silt fencing at the base of stockpiled material and direct runoff to the sites drainage system.

The location of the proposed surface water management controls such as silt fences, silt traps and settlement ponds is shown in Appendix A-X.

6.2.3.2 Management of Pollutants

- Refuelling of plant and vehicles and the addition of hydraulic oil or lubricants to vehicles/equipment will be done on impermeable and bunded areas, not within 10 m of a non-sensitive watercourse or within 50 m of a sensitive watercourse. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur. Spill-kits and hydrocarbon-absorbent packs will be stored in the cabin of each vehicle and operators will be fully trained in the use of this equipment. An oil spill response plan will be developed for the construction works;
- An accidental spillage emergency plan will be created for the construction phase of the Proposed Project. All site personnel will receive appropriate training to apply the accidental spillage emergency plan;
- All machinery will be regularly maintained and checked for fuel, oil or hydraulic fluid leaks;
- Servicing of machinery will only be undertaken within the construction compound or offsite;
- All concrete will be mixed off site and poured in place at site. All concrete browsers will be washed down at a dedicated concrete washout onsite not within 10 m of a non-sensitive watercourse or within 50 m of a sensitive watercourse 50m;
- Concrete washings will not be disposed of onsite to any surface or ground water feature. All washings will be removed offsite and treated at a licensed facility. No chemicals that are deleterious to aquatic organisms will be used in cleaning works. All raw, uncured waste concrete will be cured at a designated location, 50m of surface water conduit;
- Waste will be removed from the Proposed Project and disposed of by an approved waste contractor in accordance with prevailing waste management regulations; and
- On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind will be removed from the site.

6.2.3.3 Surface Water Monitoring

Pre-construction, construction and post-construction phase surface water monitoring will be carried out. All surface water features will be monitored in order to record any variations in the quality of the local surface water environment related to the Proposed Project. The main water parameters in terms of their potential to cause damage to aquatic life, ecosystems and water quality in the receiving waters are outlined in Table 6-1 below.

Table 6-1 Surface Water Monitoring Schedule for the Proposed Project

Phase	Pre-construction	Construction	Post Construction
Monitoring Period	3 Months	24 Months	3 Months
Frequency	**Continuous**		
Parameters	Turbidity	Turbidity	Turbidity
Frequency	**Daily**		

Phase	Pre-construction	Construction	Post Construction
Surface Water Parameters	N/A	Turbidity and visual checks (examination of surface drainage/sediment control measures/watercourses)	Turbidity and visual checks (examination of surface drainage/sediment control measures/watercourses)
Frequency	**Weekly**		
Surface Water Parameters	pH, Electrical Conductivity, Turbidity, Temperature (Handheld Meter)	pH, Electrical Conductivity, Turbidity, Temperature (Handheld Meter) Monitoring during clearance phase and construction works at Turbines	N/A
Frequency	**Monthly**		
Surface Water Parameters	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Total Ammonia, Total Phosphorus, Total Suspended Solids	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Total Ammonia, Total Phosphorus, Total Suspended Solids	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Total Ammonia, Total Phosphorus, Total Suspended Solids
Frequency	**Quarterly**		
Surface Water Parameters	N/A	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Nitrate, Total Ammonia, Total Phosphorus, Total Suspended Solids	N/A
Frequency	**Pre-Construction Report**	**Monthly and Quarterly Monitoring Report**	**Final Monitoring Report**
Surface Water Parameters	Upgrade limits/trigger values for construction phase water monitoring	Results screened against construction phase surface water monitoring trigger levels	Results screened against construction phase surface water monitoring trigger levels

6.2.4 Clear Span Bridge Measures

The following mitigation measures will be implemented during the construction works associated with the five clear span bridge crossings of the Arrigle_010 River and Smartscastle Stream_010 River.

- The bridge construction works will be undertaken outside of the Annual Close Season for instream works (NRA, 2008b) (i.e., no works will be undertaken between October to April);
- The works programme will also take account of weather forecasts and predicted rainfall. All large excavations, subsoil and vegetation stripping will be avoided during adverse

weather (i.e., if there is a yellow weather warning or higher in place or 5-mm in a 1-hour period);

- A Method Statement detailing the proposed works will be prepared in advance by the contractor, and in agreement with Inland Fisheries Ireland (IFI)FI;
- The foundations of the clear span bridges will be positioned at least 2.5 m away from the edge of the riverbank. Temporary fencing will be erected, allowing a 3 m setback buffer from the riverbanks, creating an exclusion zone. The exclusion zone will protect the riverbanks and maintain safe passage of wildlife (otter) along the banks. The fences will also act as a safe working zone for construction personnel. The fencing will also ensure that no material is stored in proximity to the river's edge. All material will be stored a minimum of 20 m from the bank of the river;
- Silt fences will be installed between the abutment works and the edge of the riverbank, on either side of the banks. The silt fencing will be erected as per the manufacturer's guidelines, under the Ecological Clerk of Works (ECoW) supervision and will be maintained until all ground disturbance has ceased and vegetation re-established. Once installed, the silt fence will be inspected regularly during construction and more frequently during heavy rainfall events;
- The false bridge decking and fine mesh netting, which will be established below the existing bridge will ensure that any debris from the cutting of the existing bridge deck and abutments, will be captured on the decking and collected and removed offsite. No debris will be allowed to deposit within the watercourse;
- Appropriate dust suppression system to prevent dust and debris from entering the watercourse will be used during the duration of the works. The dust suppression system will consist of electrical tools with continuous supplied water to supress dust. A suitable vacuum system will be put in place on the bridge decking to remove the slurry from the cutting surfaces and ensure none is deposited within the watercourse;
- All concrete will be mixed off site, not within 10 m of a non-sensitive watercourse or within 50 m of a sensitive watercourse and will be brought in as required and poured in place at site. All concrete works will be scheduled during dry weather conditions only. Only once the concrete has adequately cured, the precast bridge decks will be installed using a crawler crane positioned outside the exclusion zone on the west bank;
- Only water and environmentally friendly joint sealants will be used on the bridge;
- Riparian vegetation will be left intact where practicable in consultation with the ECoW and will not occur within the boundary of any European site. Protection will be afforded to riparian vegetation by fencing prior to commencement of the works. The natural channel width will be maintained, which will ensure the adequate water depth and velocity for fish passage at all times during the duration of the works; and
- All construction lighting will be reviewed by the ECoW and will be directed away from watercourses to ensure a dark corridor is maintained.

Following the completion of the works, all material will be removed from site. The false bridge decking will be carefully cleaned, before dismantling, to ensure any residual debris does not deposit within the watercourse.

6.2.5 Horizontal Directional Drilling Measures

All grid cable watercourse crossings along the proposed GCO One and GCO Two will be crossed via horizontal directional drilling (HDD) which is a trenchless method to remove direct impact to watercourses. . Mitigation measures that will be implemented during HDD are:

- A competent and experienced Contractor will be appointed to undertake the HDD works;
- The Contractor will prepare a HDD Method Statement which will outline the standard approach for the construction. The Method Statement will include a contingency plan for frac-out and for excessive ground settlement;
- The Contractor will undertake the directional drilling in accordance with industry best practice including British Standard EN 16191:2014 Tunnelling machinery, safety requirements and CIRIA C648 '*Control of water pollution from linear construction projects Technical Guidance*' (CIRIA, 2006a);
- The contractor will ensure that all personnel working on site are trained in pollution incident control response. A regular review of weather forecasts of heavy rainfall will be carried out and the Contractor will prepare a contingency plan for before and after such events;
- Weather conditions will be considered when planning construction activities to minimise the risk of runoff from site (i.e., if there is a yellow weather warning or higher in place or 5-mm in a 1-hour period);
- There will be no storage of fuels within 30 m of the watercourse;
- Provision of exclusion zones and barriers (silt fences) between any excavated material and any surface water features will be installed to prevent sediment washing into the receiving water environment. Silt fences will be installed and the contractor will ensure that silt fences are regularly inspected and maintained during the construction phase;
- If dewatering is required as part of the works (e.g., in trenches for underground cabling or in wet areas), water will be treated prior to discharge in line with CIRIA C750 'Groundwater control: design and practice (CIRIA, 2016);
- To prevent loss of bentonite or 'frac-out' from occurring, a series of actions will be implemented; the drill fluids operator will monitor drill fluid density, viscosity and solids content on an ongoing basis, to ensure that the fluid does not increase in viscosity, requiring additional pressure to maintain mobility;
- In critical cases, viscometers will be used to measure drill fluid gel strength and shear strength. Filtrate will also be measured to calculate the amount of filter cake building up on the internal wall of the bore. Any increases in pump pressure experienced by the drill operator will be investigated immediately to prevent the risk of pressure build up within the annulus. In some circumstances, dependant on the drilling equipment used, the pilot drill borehole assembly will be fitted with a down hole pressure monitor to measure pressure in the annulus between the drill and the bore wall. This will give an early indication of pressure build up in the hole and allow the drill operator to prevent a 'frac-out'. If there is a risk of a 'frac-out' a number of measures will be implemented consisting of:
    - pumping a pill of drilling fluid with a higher density to the risk zone; and
    - circulate and pump loss circulation material (typically cork or manufactured inert polymers) to the risk zone to seal the risk zone, grouting of the risk zone, and, or launch a packer before the risk zone.

- The Contractor will implement procedures to maximise the recirculation or reuse of drilling fluid to minimise waste disposal;
- Disposal of drilling fluids will be the responsibility of the Contractor to an approved and licenced waste facility;
- Monitoring of the drilling operations will be undertaken at all times by the Contractor. The monitoring will include visual inspection of the pits and monitoring of the volume of returns flowing back to the entry pit. The monitoring personnel will be in constant communication with the drilling rig operator and thus will be able to immediately cease drilling if necessary;
- Buffer strips of natural uncleared vegetation will be preserved between construction activity and watercourses and will be demarcated by the ECoW. Reception pits will be situated outside of the riparian zone. A buffer zone width for smaller channels (<10 m) of 20 m or greater will be maintained.

6.2.6 Mitigation Measures to Prevent Disturbance/Displacement to Qualifying Interest Species

- Pre-construction confirmatory surveys prior to the commencement of any works will be carried out by a competent ecologist to identify any changes in otter activity or the presence of holt/couch locations within the Proposed Project. Otter surveys will be undertaken no more than 10—12 months in advance of the construction works as per the advice in NRA Guidelines for the Treatment of Otters during the Construction of National Road Schemes (NRA, 2008a);
- Twilight working hours (i.e., time between dawn and sunrise and dusk and sunset), especially at the clear span bridge locations, will be restricted as far as possible, where the construction programme does not allow this time restriction to be observed, then these areas will be inspected by the ECoW prior to and for the duration of the works. Otter are crepuscular species and as such disturbance will be reduced by restricting the amount of twilight working hours;
- All construction and operational phase lighting will be reviewed by the ECoW and will be directed away from watercourses to ensure a dark corridor is maintained; and
- As discussed, mitigation measures to prevent the degradation of water quality as outlined in Section 6.2.3 is also applicable to prevent the disturbance/displacement of species (e.g., displacement of species due to unfavourable water quality as a result of construction impacts).

In the event that a new holt (established within the interim period) is identified within the footprint of the works during the pre-construction confirmatory survey and the following mitigation measures will be applied in accordance with the NRA *Guidelines for the Treatment of Otters during the Construction of National Road Schemes* (NRA, 2008a) as follows:

- No wheeled or tracked vehicles (of any kind) will be used within 20 m of active, but non-breeding, otter holts (NRA, 2008a). Light work, such as digging by hand or scrub clearance will also not take place within 15 m of such holts, except under licence.
- No works will be undertaken within 150 m of any holts at which breeding females or cubs are present. Following consultation with NPWS and receipt of a derogation licence, works closer to such breeding holts may take place provided appropriate mitigation measures are in place, e.g. screening and/or restricted working hours on site (NRA,

2008a). Breeding may take place in any season, so activity at a holt will be determined on a case-by-case basis by the ECoW.

- A prohibited working area associated with otter holts will be fenced and appropriate signage erected under guidance of the ECoW;
- If holts are found to be inactive prior to construction, exclusion of holts and their subsequent destruction may be carried out during any season under licence with the NPWS. To prevent the reoccupation of holts the entrances will be soft blocked (using vegetation and a light application of soil) for a period of five days (NRA, 2008a).
- If holts are found to be active, otters will be evacuated from the holts prior to any closures. Otters with cubs however will not be evacuated until the otters have vacated the holt themselves naturally. Once the otters have left the holt, the entrance will then be soft blocked. In some cases, the installation of one-way gates on the entrances to the holt may be required and a monitoring period of 21 days will be carried out to ensure the otters have left the holt prior to removal (NRA, 2008a). All works will be done under licence with the NPWS.

6.2.7 Roles and Responsibilities

The applicant will appoint a contractor to construct the Proposed Project and the contractor will be required to provide a suite of specialists, including an ECoW, as part of their delivery team. The role of the ECoW is defined by British Standard BS 42020:20131[5] as "*person who has the ecological qualifications, training, skills and relevant experience to undertake appropriate monitoring and to provide specialist advice to "development" site personnel on necessary working practices required to i) safeguard ecological features on site and ii) aid compliance with any consents and relevant wildlife legislation related to the works*."

The requirements of the ECoW role is proposed to be fulfilled by a single individual with support and assistance provided by technical specialists and senior colleagues when required. The ECoW (individual or team of individuals) will therefore have appropriate qualifications, training and experience to meet the requirements of the role and in addition, where needed, can access support from senior ecologists within the company with the required qualifications, training and experience.

The ECoW will have the power to 'Stop Works' at any time they deem it necessary to do so.

The ECoW will be responsible for monitoring compliance with the mitigation measures and construction phase monitoring requirements relating to ecology/biodiversity as set out in the project NIS, EIAR, CEMP and SWMP. The ECoW will have authority over the content of routine reports and will act independently in determining instances of non-compliance with the consents and licenses or any breaches of environmental legislation. The ECoW will also document activities using photographs and log information to registers/logs. The role of the ECoW includes tasks such as, but not limited to, the following:

- Pre-construction confirmatory surveys for otter;
- Consultation with NPWS and application for an otter derogation licence, if required;
- Monitoring and exclusion of otter holts, if required;
- Demarcation of riparian habitats to be maintained;
- Review of construction phase lighting plans;

[5] BS 42020:2013 is the Biodiversity — Code of practice for planning and development. Published by British Standards Institute (Currently being updated by BSI).

- Supervision of works in ecologically sensitive areas as required to ensure compliance with environmental legislation and the requirement of the schedule of works and EIAR;
- Preparation of Method Statements for ecological tasks such as those described above; and
- Provide a briefing on environmental protection measures and ecological sensitivities of the Proposed Project to all site personnel in advance of commencement of enabling works.

On completion of construction Manogate Ltd, or their appointed agents, will be responsible for managing and operating the Proposed Project in line with the requirements of the planning conditions and mitigation measures required for the operational and decommissioning phases. The names and contact details of the individuals with responsibility for implementation and supervision of mitigation measures during all phases of the development will be clearly identified and set out in documents such as the CEMP and site- specific method statements as appropriate.

6.2.8 Decommissioning Phase Mitigation Measures

The expected life span of the Proposed Project is 35 years. Following this period, the wind turbines may be replaced with a new set of machines, subject to planning permission being obtained, or the site will be decommissioned fully, with the exception of the electricity substation and site roads and drainage.

Activities associated with the decommissioning phase are not predicted to exceed those assessed for the construction phase (Section 4.1) and are expected to be of a similar type and magnitude to those anticipated during the construction phase, but generally of a shorter duration and scale. In the case of complete decommissioning of the Proposed Project, whereby new machines are not erected, the potential impact of habitat loss will no longer be applicable.

The mitigation measures implemented during the construction phase, will be applied during the decommissioning works, refer to Section 6.2. As discussed above, in the case of turbine removal and complete decommissioning of the Proposed Project, the footprint of the infrastructure sites will be reinstated with the habitat of the surrounding environment (e.g., improved agricultural grassland or conifer plantation) to ensure the site of the Proposed Project is returned to its pre-existing state prior to the Proposed Project.

Table 6-2 Summary of Proposed Mitigation Measures

Project Phase	Effect Identified	Proposed Mitigation Measure	Timescale for Implementation	Monitoring Requirements	How the Measures Will Avoid/Reduce Effects	Confidence in Effectiveness to Avoid/Reduce effects
Construction Phase	Surface water quality impacts	Mitigation measures are outlined in Section 6.2.3	All mitigation measures will be implemented prior to and throughout the duration of the construction phase.	The appointed ECoW will carry out daily monitoring of all water quality protection measures.	The proposed mitigation and monitoring measures will ensure there is no impacts to surface water quality, thus there is no potential for adverse effects.	The measures outlined are in line with current guidelines (CIRIA, 2001, CIRIA, 2006b, NRA, 2008b and IFI, 2016) and are standard good practice working methods used to protect water quality.
	Barrier to commuting otter	Mitigation measures are outlined in Section 6.2.4.	All mitigation measures will be implemented prior to and throughout the duration of the construction phase.	Monitoring will be undertaken by the appointed ECoW.	No works within a European site boundary and maintaining an exclusion zone will allow the safe passage of otter along the river banks. This will ensure there is no potential for adverse effects.	The measures outlined are in line with current guidelines (NRA, 2008a).
	Disturbance impacts	Mitigation measures outlined in Section 6.2.6.	All mitigation measures will be implemented prior to and throughout	Monitoring will be undertaken by the appointed ECoW.	No works within a European site boundary and maintaining an	The measures outlined are in line with current guidelines (NRA, 2008a).

Project Phase	Effect Identified	Proposed Mitigation Measure	Timescale for Implementation	Monitoring Requirements	How the Measures Will Avoid/Reduce Effects	Confidence in Effectiveness to Avoid/Reduce effects
			the duration of the construction phase.		exclusion zone will allow the safe passage of otter along the river banks. This will ensure there is no potential for adverse effects.	
Decommissioning Phase	Surface water quality impacts	Mitigation measures are outlined in Section 6.2.3	All mitigation measures will be implemented prior to and throughout the duration of the decommissioning phase.	The appointed ECoW will carry out daily monitoring of all water quality protection measures.	The proposed mitigation and monitoring measures will ensure there is no impacts to surface water quality, thus there is no potential for adverse effects.	The measures outlined are in line with current guidelines (CIRIA, 2001, CIRIA, 2006b, NRA, 2008b and IFI, 2016) and are standard good practice working methods used to protect water quality.
	Barrier to commuting otter	Mitigation measures are outlined in Section 6.2.4.	All mitigation measures will be implemented prior to and throughout the duration of the decommissioning phase.	Monitoring will be undertaken by the appointed ECoW.	No works within a European site boundary and maintaining an exclusion zone will allow the safe passage of otter along the river banks. This will ensure there is no potential for adverse effects.	The measures outlined are in line with current guidelines (NRA, 2008a).

Project Phase	Effect Identified	Proposed Mitigation Measure	Timescale for Implementation	Monitoring Requirements	How the Measures Will Avoid/Reduce Effects	Confidence in Effectiveness to Avoid/Reduce effects
	Disturbance impacts	Mitigation measures outlined in Section 6.2.6.	All mitigation measures will be implemented prior to and throughout the duration of the decommissioning phase.	Monitoring will be undertaken by the appointed ECoW.	No works within a European site boundary and maintaining an exclusion zone will allow the safe passage of otter along the river banks. This will ensure there is no potential for adverse effects.	The measures outlined are in line with current guidelines (NRA, 2008a).

6.3 In-Combination Effects

A study area was identified for other developments for the purpose of the cumulative assessment. This was set at a 10 km radius from the proposed wind farm site, within which 'other development' is either in situ or has planning permission (a full list of these developments is provided in Appendix A-XIII). These other developments included searches for any renewable energy developments, electrical and water services, roadworks, industrial, residential and any other large developments.

To conduct the in-combination impact assessment, the online planning registers for Kilkenny City and County Council as well as An Coimisiún Pleanála were used. Relevant NIS and EIAR (or historical EIS) documents, planning application details and planning drawings within the study area of the Proposed Project were reviewed to identify past and future projects, their activities and their environmental impacts.

6.3.1 Projects

Castlebanny Wind Farm (An Coimisiún Pleanála Reference: PA10.309306)

Springfield Renewables Limited (Ltd.) applied for planning for the construction of a wind farm at Castlebanny, County Kilkenny located ca. 12 km north of the Proposed Project (this development was consented but is currently in the judicial review process).

A Screening for Appropriate Assessment and NIS were prepared (Blackthorn Ecology, 2021). The NIS identified the potential for adverse effects on the River Barrow and River Nore SAC, Lower River Suir SAC, River Nore SPA and Saltee Islands SPA. The NIS details a range of mitigation measures to ensure adverse effects to European sites do not arise. The NIS concluded that '*The NIS contains information which the Board, as competent authority, may consider in making its own complete, precise and definitive findings and conclusions and upon which the Board is capable of determining that all reasonable scientific doubt has been removed as to the effects of the Proposed Project on the integrity of the relevant Natura 2000 sites. In light of the conclusions of the assessment which it shall conduct on the implications for the European sites concerned, the Board is enabled to ascertain that the Proposed Project will not adversely affect the integrity of any of the European sites concerned'* (Blackthorn Ecology, 2021). Considering the conclusion of Castlebanny Wind Farm NIS and following the implementation of the mitigation measures outlined in Section 6.2 which will prevent significant adverse effects on the integrity of European sites, it is concluded that the Proposed Project, in combination with Castlebanny Wind Farm, will not adversely affect the integrity of any European site in view of its conservation objectives.

Ballymartin Wind Farm (An Coimisiún Pleanála Reference: PL10.208178)

Ballymartin Wind Farm is fully operational and is located adjacent to the proposed wind farm site. The initial Environmental Impact Statement (EIS) was completed in 2003 and noted that the site was not present within an ecological designation. The report notes the presence of golden plover and hen harrier, but with unsuitable breeding habitat present. An AA Screening/NIS was provided to Kilkenny County Council as part of the planning application for this project and was therefore subject to statutory planning requirements in relation to the protection of European sites. As this project was granted planning permission, it can be concluded that no direct or indirect impacts that could adversely affect the integrity of any European site were identified. Mitigation measures were outlined within the EIS for flora and

fauna. Ballymartin Wind Farm is operational and given the Proposed Project concludes no adverse effects to the site integrity of SPAs. Following the implementation of the mitigation measures outlined in Section 6.2 which will prevent significant adverse effects on the integrity of European sites, it is concluded that the Proposed Project, in combination with the existing Ballymartin Wind Farm, will not adversely affect the integrity of any European site in view of its conservation objectives.

Smithstown Wind Farm (Kilkenny County Council: 07/2141)

Smithstown Wind Farm is fully operational and is located adjacent to the proposed wind farm site. The EIS was submitted in 2007, which assessed impacts to protected bird and fauna species in addition to water quality impacts and habitat loss. Adverse effects were not concluded and minimal mitigation measures suggested (e.g., turbine siting to reduce bird collisions and offsite washing of concrete and vehicles). Smithstown Wind Farm is operational and given the Proposed Project concludes no adverse effects to the site integrity of SPAs, and following the implementation of the mitigation measures outlined in Section 6.2 which will prevent significant adverse effects on the integrity of European sites, it is concluded that the Proposed Project, in combination with the existing Smithstown Wind Farm, will not adversely affect the integrity of any European site in view of its conservation objectives.

Rahora Wind Farm (An Coimisiún Pleanála Reference: PL10.206373)

An application was made in 2003 by Ecopower Developments Ltd. (Kilkenny County Council planning reference 03/1117 [refused but overturned by An Coimisiún Pleanála]) for the development of a wind farm in the townlands of Rahor, Ballallog, Guillkagh More, Brownstown, County Kilkenny. Rahora Wind Farm is fully operational and is located ca. 2 km northeast of the proposed wind farm site. An EIS was submitted in 2003 and concluded the absence of Annex protected mammals and habitats but noted the presence of the Annex I protected bird species golden plover. Adverse effects were not concluded as a result of Rahora Wind Farm. This wind farm is operational and given the Proposed Project concludes no adverse effects to the site integrity of any European site and following the implementation of the mitigation measures outlined in Section 6.2 which will prevent significant adverse effects on the integrity of European sites, it is concluded that the Proposed Project, in combination with the existing Rahora Wind Farm, will not adversely affect the integrity of any European site in view of its conservation objectives.

Beallough Wind Farm (An Coimisiún Pleanála Reference: PL93.245176)

Beallough Wind Farm is fully operational and is located ca. 18 km southwest from the Proposed Project. Beallough Wind Farm consists of two turbines and thus is of a small scale and is located at a significant distance (ca. 18 km as the crow flies) and within a different catchment to the Proposed Project. Following the implementation of the mitigation measures outlined in Section 6.2 which will prevent significant adverse effects on the integrity of European sites, it is concluded that the Proposed Project, in combination with the existing Beallough Wind Farm, will not adversely affect the integrity of any European site in view of its conservation objectives.

Ballyhale Flood Relief Scheme (An Coimisiún Pleanála Reference: JA10.317082)

An application was made by Kilkenny County Council in 2023 for a flood relief scheme (FRS) in Ballyhale, County Kilkenny ca. 11 km northwest of the Proposed Project. This project is present within the same subcatchment (Nore_SC_130) to that of the Proposed Project and leads downstream to the River Barrow and River Nore SAC. A Screening for Appropriate Assessment

and NIS were prepared by Altemar Ltd. (Altemar, 2022). This NIS concludes: '*Following the implementation of the mitigation measures outlined, the proposed works would not be deemed to have a significant impact. No significant negative impacts are likely on Natura 2000 sites, alone in combination with other plans and projects based on the implementation of standard construction phase mitigation measures'* (Altemar, 2022). Considering the conclusion of Ballyhale Flood Relief Scheme NIS and following the implementation of the mitigation measures outlined in Section 6.2 which will prevent significant adverse effects on the integrity of European sites, it is concluded that the Proposed Project, in combination with Ballyhale Flood Relief Scheme, will not adversely affect the integrity of any European site in view of its conservation objectives.

Other Smaller Developments:

There are a number of small projects and applications in the area surrounding the Proposed Project that involve the construction or extension of small residential properties and/or agricultural infrastructure. A full list of these developments is provided in Appendix A-XIII. Due to the lack of connectivity, and nature and scale of these small developments there will be no significant effects on any designated sites and therefore there is no potential for in-combination effects with the Proposed Project.

6.3.2 Plans

Kilkenny City and County Development Plan 2021-2027 (hereinafter referred to as the Plan) sets out policies and objectives for the proper planning and sustainable development of the City and County whilst having regard to relevant national plans, policies and strategies. Chapter 1 – Introduction of the Plan outlines Objective 1A " *To implement the provisions of Articles 6(3) and 6(4) of the EU Habitats Directive and ensure that any plan or project within the functional area of the Planning Authority is subject to appropriate assessment in accordance…*" (KCCDP, 2021).

Chapter 9 - Heritage, Culture and the Arts outlines development management requirements:

" *To ensure that development proposals, where relevant, improve the ecological coherence of the Natura 2000 network and encourage the retention and management of landscape features that are of major importance for wild fauna and flora as per Article 10 of the Habitats Directive";*

"To protect and where possible enhance wildlife habitats and landscape features which act as ecological corridors/networks and stepping stones, such as river corridors, hedgerows and road verges, and to minimise the loss of habitats and features of the wider countryside (such as ponds, wetlands, trees) which are not within designated sites"; and

"To ensure that appropriate mitigation and/or compensation measures to conserve biodiversity, landscape character and green infrastructure networks are required in developments where habitats are at risk or lost as part of a development".

Adherence to the Council's policies and objectives will therefore ensure that all plans and projects proposed within the area are subjected to the tests of Appropriate Assessment which will assess the potential for likely significant effects to European sites, and where deemed necessary, the potential for an adverse effect on European site integrity, either alone or in-combination with other plans and projects. For these reasons, there is no potential for in-combination effects with the Proposed Project.

7. CONCLUSION

In the absence of mitigation, the potential risks to the Lower River Suir SAC, the River Barrow and River Nore SAC and the River Nore SPA is the potential reduction in water quality and subsequent effects on QI and SCI species (e.g., habitat loss, reduction in food biomass) and disturbance to QI fauna species. However, following the application of the detailed mitigation measures, potential adverse effects will be avoided, and it can be determined that there will be no risk of adverse effects on the QI and SCI species, or on overall site integrity, either alone or in combination with other plans or projects, in light of the conservation objectives of these European sites.

Following an assessment of the bird survey results and CRM it can be concluded that there will be no risk of adverse effects on the SCI species, or on overall site integrity, either alone or in combination with other plans or projects, in light of the conservation objectives of the Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA.

In accordance with Article 6(3) of the Habitats Directive, and based on the best available scientific information, it can therefore be stated with no reasonable scientific doubt that the implementation of the Proposed Project, subject to the identified mitigation measures, will not adversely affect the integrity of any European sites during the construction, operational and decommissioning phases of the Proposed Project, either alone or in-combination with any other plans or projects.

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Appendix A-I SAC — Adverse Effects on Site Integrity – Lower River Suir

Table 8-1 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of the Lower River Suir SAC (NPWS, 2017)[6]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation			
Habitat area	Kilometre	Area stable or increasing, subject to natural processes	The Proposed Project has the potential to result in the degradation of water quality and the release of suspended solids into watercourses located downstream, which can negatively impact *Ranuncullion fluitantis* and *Callitricho-batrachion* vegetation (Ní Bhroin, 2006). Impacts to the vegetation would result in a change of the area and distribution of the habitat which **would constitute an adverse effect on site integrity.**
Habitat distribution	Occurrence	No decline, subject to natural processes	
Hydrological regime: river flow	Metres per second	Maintain appropriate hydrological regimes	The Proposed Project will not take place within the boundary of the SAC, and it will not result in changes to the hydrological regime of rivers within the SAC. There is no potential for adverse effects.
Hydrological regime: groundwater discharge	Metres per second	Maintain appropriate hydrological regime	The Proposed Project will not take place within the boundary of the SAC, and it will not result in changes to the groundwater hydrological regime of rivers within the SAC, as groundwater impacts are not anticipated beyond 200 m of excavations. There is no potential for adverse effects.
Hydrological regime: tidal influence	Daily water level fluctuations - metres	Maintain	The Proposed Project will not take place within the boundary of the SAC, and it will not result in changes to the tidal regime of rivers within the SAC. There is no potential for adverse effects.
Substratum composition: particle size range	Millimetres	Maintain appropriate substratum particle size range, quantity and quality, subject to natural processes	The Proposed Project has the potential to result in the degradation of water quality and the release of suspended solids into watercourses located downstream. This could lead to a change in substratum composition which **would constitute an adverse effect on site integrity.**

[6] Only the QIs with potential to be affected by the Proposed Project are considered as other QIs have been excluded (refer to Section 6.1.3.1) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Water quality	Various	Maintain appropriate water quality to support the natural structure and functioning of the habitat	The Proposed Project has the potential to result in the degradation of water quality and the release of suspended solids into watercourses located downstream, which can negatively impact *Ranuncullion fluitantis* and *Callitricho-batrachion* vegetation (Ní Bhroin, 2006). Impacts to the vegetation would result in a change of the area and distribution of the habitat which **would constitute an adverse effect on site integrity.**
Typical species	Occurrence	Maintain typical species in good condition, including appropriate distribution and abundance	
Floodplain connectivity	Hectares	Maintain floodplain connectivity necessary to support the typical species and vegetation composition of the habitat	The Proposed Project will not take place within the boundary of the SAC, and it will not result in changes to the floodplain connectivity within the SAC. There is no potential for adverse effects.
Fringing habitats	Hectares	Maintain marginal fringing habitats that support the typical species and vegetation composition of the habitat	The Proposed Project has the potential to result in the degradation of water quality and the release of suspended solids into watercourses located downstream, which can negatively impact *Ranuncullion fluitantis* and *Callitricho-batrachion* vegetation (Ní Bhroin, 2006). Impacts to the vegetation would result in a change of the area and distribution of the habitat which **would constitute an adverse effect on site integrity.**
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels			
Hydrological regime: Flooding depth/height of water table	Metres	Maintain appropriate hydrological regime	The Proposed Project will not result in a change or impacts to the hydrological regime of watercourses within the SAC. There is therefore no potential for adverse effects.
Habitat area	Hectares	Area stable or increasing, subject to natural processes	The Proposed Project has the potential to result in the degradation of water quality within the SAC. Surface water pollution can negatively impact aquatic or alluvial plant species. Impacts to the plant communities (including composition, positive and negative indicator species) within the habitat could result in a decrease in the area and distribution of the tall herb habitat which **would constitute an adverse effect on site integrity.**
Habitat distribution	Occurrence	No decline, subject to natural processes	
Vegetation composition: positive indicator species	Number of species at a representative number of monitoring stops	At least three positive indicator species present	
Vegetation composition: positive indicator species	Percentage cover at a representative number of monitoring stops	Cover of positive indicator species at least 40%	

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Cover of negative indicator species not more than 33%	
Vegetation composition: nonnative species	Percentage cover at a representative number of monitoring stops	Cover of non-native species not more than 1%	No invasive plant species were identified within the Proposed Project during surveys. In addition, no instream works will be undertaken within any watercourse as part of the Proposed Project. Considering the above, there is no potential for the introduction of invasive species into the SAC boundary. Thus, there is no potential for adverse effects.
Vegetation composition: scrub, bracken and heath	Percentage at a representative number of monitoring stops	Cover of scrub, bracken (Pteridium aquilinum) and heath not more than 5%	The Proposed Project has the potential to result in the degradation of water quality within the SAC. Surface water pollution can negatively impact aquatic or alluvial plant species. Impacts to the plant communities within the habitat could occur. This **would constitute an adverse effect on site integrity.**
Vegetation structure: height	Height (centimetres) at a representative number of monitoring stops	Herb height at least 50cm	
Physical structure: bare soil	Percentage at a representative number of monitoring stops	Cover of bare soil not more than 10%	The Proposed Project will not take place within the boundary of the SAC. There is no potential for the Proposed Project to impact upon the cover of bare soil in this habitat. Thus, there is no potential for adverse effects.
Physical structure: grazing and disturbance	Square metres in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m²	The Proposed Project will not result in an impact on the physical structure of this habitat as a result of grazing and disturbance. Thus, there is no potential for adverse effects.
White-clawed crayfish (*Austropotamobius pallipes*)			
Distribution	Occurrence	No reduction from baseline	The 'baseline' distribution of white-clawed crayfish in the SAC is presented in mapping included in the NPWS Conservation Objectives Report (NPWS, 2017). The report shows that white-clawed crayfish occur extensively throughout the River Suir and its tributaries.
Population structure: recruitment	Occurrence of juveniles and females with eggs	Juveniles and/or females with eggs in all occupied tributaries	
Water quality	EPA Q value	At least Q3-4 at all sites sampled by EPA	

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Habitat quality: heterogeneity	Occurrence of positive habitat features	No reduction in habitat heterogeneity or habitat quality	The Proposed Project has the potential to result in a degradation of water quality which would impact habitat quality downstream of the Proposed Project and within the boundary of the SAC. White-clawed crayfish are sensitive to changes in water quality and require well oxygenated habitat, free of silt and pollution (Reynolds, 1998). An alteration in the availability of habitat suitability within the SAC would constitute a change from the baseline distribution of white-clawed crayfish which would alter the reference range for the species in the SAC, further inhibiting the maintenance of favourable conservation condition. The degradation of water quality could also reduce the carrying capacity of the SAC to support this species. Changes in the baseline distribution, water quality and habitat quality **would constitute an adverse effect on site integrity.**
Negative indicator species	Occurrence	No alien crayfish species	Crayfish plague has been confirmed within both the River Nore and the River Barrow (IFI press release August 2019[7] and September 2017[8]). The Proposed Project however will not include any instream works within any watercourse (within the SAC or upstream), thus there is no pathway for the introduction of alien crayfish or for the further spread of crayfish plague within the SAC, therefore, there is no potential for adverse effects as a result of the Proposed Project.
Disease	Occurrence	No instances of disease	
Sea Lamprey (*Petromyzon marinus*)			
Distribution: extent of anadromy	Percentage of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	No instream works will be undertaken within the SAC as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility/migration through river channels, therefore, there is no potential for adverse effects.

[7] https://www.fisheriesireland.ie/news/notices/crayfish-plague-confirmed-in-the-river-nore#:~:text=An%20outbreak%20of%20crayfish%20plague,to%20help%20prevent%20its%20spread. (Accessed: October 2025).
[8] https://www.fisheriesireland.ie/news/press-releases/crayfish-plague-spreads-to-river-barrow-and-water-users-are-urged-to-follow#:~:text=19th%20September%202017%3A%20Large%20numbers,in%20the%20last%20two%20years (Accessed: October 2025).

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	The Proposed Project has the potential to result in the degradation of water quality downstream and within the SAC. The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey which would reduce the carrying capacity of the SAC to support this species. A reduction in water quality could reduce the population of this species. A reduction in fine spawning habitat, juvenile density and positive sample sites would **constitute an adverse effect on site integrity.**
Juvenile density in fine sediment	Juveniles/m²	Juvenile density at least 1/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
Brook Lamprey (*Lampetra planeri*)			
Distribution	Percentage of river accessible	Access to all water courses down to first order streams	No instream works will be undertaken within the SAC or as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility/migration through river channels, therefore, there is no potential for adverse effects.
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	The Proposed Project has the potential to result in the degradation of water quality downstream and within the SAC. The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey which would reduce the carrying capacity of the SAC to support this species. A reduction in water quality could reduce the population size of this species. A reduction in fine spawning habitat, juvenile density and positive sample sites would **constitute an adverse effect on site integrity.**
Juvenile density in fine sediment	Juveniles/m²	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
River Lamprey (*Lampetra fluviatilis*)			
Distribution	Percentage of river accessible	Access to all water courses down to first order streams	No instream works will be undertaken within the SAC or as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility/migration through river channels, therefore, there is no potential for adverse effects.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Population structure of juveniles	Number of age/size groups	At least three age/size groups of river/brook lamprey present	The Proposed Project has the potential to result in the degradation of water quality downstream and within the SAC. The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey which would reduce the carrying capacity of the SAC to support this species. A reduction in water quality could reduce the population size of this species. A reduction in fine spawning habitat, juvenile density and positive sample sites would **constitute an adverse effect on site integrity.**
Juvenile density in fine sediment	Juveniles/m²	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
Atlantic Salmon (*Salmo salar*)			
Distribution: extent of anadromy	Percentage of river accessible	100% of river channels down to second order accessible from estuary	No instream works will be undertaken within the SAC or as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility through river channels therefore, there is no potential for adverse effects.
Adult spawning fish	Number	Conservation limit (CL) for each system consistently exceeded	While the Suir is currently below its CL (79%) (NPWS, 2017), the Proposed Project has the potential to result in the degradation of water quality and habitat, which could result in further impacts on the CL of the River Suir. A decrease in adult spawning fish would **constitute an adverse effect on the integrity of the site.**
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 minutes sampling	Crisp (2000) notes that 'salmon spawning site selection is governed by complex environmental factors, which are all essential for successful spawning, egg survival and hatching, including intra-gravel flow, gravel size, water depth, as well as stream velocity and cover' and that 'one of the most important factors for salmon egg survival is oxygen supply, which is dependent upon dissolved oxygen concentration and inter-gravel flow'. High concentrations of suspended solids in the river are undesirable as they are likely to result in infilling of the gravel pores with fine material. The release of suspended solids and/or pollution has the potential to impact spawning sites which would **constitute an adverse effect on site integrity.**
Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes	

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Out-migrating smolt abundance	Number	No significant decline	No instream works will be undertaken within the Proposed Project or within the SAC. The Proposed Project will therefore not inhibit smolt out migration. There is no potential for adverse effects on out-migrating smolt abundance.
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	The Proposed Project may result in the degradation of water quality downstream, within the SAC. The Blackwater (Kilmacow)_020 and Smartscastle Stream_010, are located within the Proposed Project which lead downstream to the Middle Suir Estuary which is present within the SAC boundary. These Blackwater (Kilmacow)_020 and Smartscastle Stream_010 are assigned Q4 and Q3-4 values, respectively. The degradation of water quality due to the Proposed Project could prevent the above watercourses from maintaining and further downstream, achieving at least a Q4 water quality status. A degradation in water quality would therefore **constitute an adverse effect on site integrity.**
Otter (*Lutra lutra*)			
Distribution	Percentage positive survey sites	No significant decline	No works will be undertaken within the SAC boundary, therefore there is no potential for the disturbance of the species or change in its distribution within the SAC. In addition, no evidence of otter was recorded within the Proposed Project. There is no potential for adverse effects.
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 116.17ha above high water mark (HWM) and 726.61ha along river banks	The Proposed Project will not result in any decline of terrestrial habitat within the SAC, as no works (including the clearance of vegetation) will occur outside the Proposed Project. There is therefore no potential for adverse effects.
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 712.27ha	The Proposed Project will not result in any decline in marine habitat, as no works (including the clearance of vegetation) will occur outside the Proposed Project. There is therefore, no potential for adverse effects.
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 382.31km	The Proposed Project will not result in any decline in the extent of freshwater river habitat within the SAC, as no works (including the clearance of vegetation) will occur outside the Proposed Project. There is therefore no potential for adverse effects.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Couching sites and holts	Number	No significant decline	No holts or couching sites were recorded within the Proposed Project, or within watercourses (150 m downstream) of the Proposed Project. However, there is potential for holts to be identified during pre-construction confirmatory surveys. As such, there is potential for a loss in the number of couching sites and holts as a result of the Proposed Project. A loss of couching sites and holts would therefore **constitute an adverse effect on site integrity.**
Fish biomass available	Kilograms	No significant decline	The potential degradation of water quality within the River Suir could affect the availability of fish biomass to otter and affects as a result of direct contact within pollutants. A significant pollution event from the Proposed Project could result in a decline in available feeding resources for otter. A significant decline in fish biomass available for otter would **constitute an adverse effect on site integrity.**
Barriers to connectivity	Number	No significant increase	No instream works will be undertaken within the SAC or as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility through river channels therefore, there is no potential for adverse effects.

Appendix A-II Adverse Effects on Site Integrity – River Barrow and River Nore SAC

Table 8-2 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of the River Barrow and River Nore SAC (NPWS, 2025a)[9]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation			
Habitat distribution	Occurrence	No decline, subject to natural processes	The proposed development has the potential to result in the degradation of water quality and the release of suspended solids into watercourses located downstream, which can negatively impact *Ranuncullion fluitantis* and *Callitricho-batrachion* vegetation (Ní Bhroin, 2006). Impacts to the vegetation would result in a change of the area and distribution of the habitat which **would constitute an adverse effect on site integrity.**
Habitat area	Kilometres	Area stable or increasing, subject to natural processes	
Hydrological regime: river flow	Metres per second	Maintain appropriate hydrological regimes	The Proposed Project will not result in any changes to the hydrological regime of rivers within the SAC. There is no potential for adverse effects.
Hydrological regime: groundwater discharge	Metres per second	The groundwater flow to the habitat should be permanent and sufficient to maintain tufa formation	The Proposed Project will not result in a change or impacts to the groundwater hydrological regime of the SAC, as groundwater impacts are not anticipated beyond 200 m of excavations There is no potential for adverse effects.
Substratum composition: particle size range	Millimetres	The substratum should be dominated by large particles and free from fine sediments	The Proposed Project has the potential to result in the degradation of water quality and the release of suspended solids into watercourses located downstream, which can negatively impact *Ranuncullion fluitantis* and *Callitricho-batrachion* vegetation (Ní Bhroin, 2006). Impacts to the vegetation would result in a change of the area and distribution of the habitat which **would constitute an adverse effect on site integrity.**
Water chemistry: minerals	Milligrammes per litre	The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits	
Water quality: suspended sediment	Milligrammes per litre	The concentration of suspended solids in the water column should be sufficiently low to prevent excessive deposition of fine sediments	
Water quality: nutrients	Milligrammes per litre	The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition	

[9] Only the QIs with potential to be affected by the Proposed Project are considered as other QIs have been excluded (refer to Section 6.1.3.2) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Vegetation composition: typical species	Occurrence	Typical species of the relevant habitat sub-type should be present and in good condition	
Floodplain connectivity	Area	The area of active floodplain at and upstream of the habitat should be maintained	The Proposed Project will not result in a change in the river connectivity to floodplains. There is no potential for adverse effects.
Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels			
Habitat distribution	Occurrence	No decline, subject to natural processes	The Proposed Project has the potential to result in the degradation of water quality within the SAC. Surface water pollution can negatively impact aquatic or alluvial plant species. Impacts to the plant communities within the habitat could result in a decrease in the area and distribution of the tall herb habitat which **would constitute an adverse effect on site integrity.**
Habitat area subject to natural processes	Hectares	Area stable or increasing, subject to natural processes	
Vegetation structure: sward height	Centimetre	30-70% of sward is between 40 and 150 cm in height	
Vegetation composition: broadleaf herb: grass ratio	Percentage	Broadleaf herb component of vegetation between 40 and 90%	
Vegetation composition: typical species	Number	At least 5 positive indicator species present	
Hydrological regime: Flooding depth/height of water table	Metres	Maintain appropriate hydrological regimes	The Proposed Project will not result in a change or impacts to the hydrological regime of watercourses within the SAC. There is therefore no potential for adverse effects.
Vegetation composition: negative indicator species	Occurrence	Negative indicator species, particularly non-native invasive species, absent or under control- NB Indian balsam (*Impatiens glandulifera*), monkeyflower (*Mimulus guttatus*), Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*)	No invasive plant species were identified within the Proposed Project during surveys. In addition, no instream works will be undertaken within any watercourse as part of the Proposed Project. Considering the above, there is no potential for the introduction of invasive species into the SAC boundary. Thus, there is no potential for adverse effects.
White-clawed crayfish (*Austropotamobius pallipes*)			
Distribution	Occurrence	No reduction from baseline	The 'baseline' distribution of white-clawed crayfish in the SAC is presented in mapping included in the NPWS Conservation Objectives Report (NPWS, 2025a). The report shows that white-clawed crayfish occur extensively throughout the River Nore and its tributaries.
Population structure: recruitment	Percentage occurrence of juveniles and females with eggs	Juveniles and/or females with eggs in at least 50% of positive samples	
Water quality	EPA Q value	At least Q3-4 at all sites sampled by EPA	

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Habitat quality: heterogeneity	Occurrence of positive habitat features	No decline in heterogeneity or habitat quality	The Proposed Project has the potential to result in a degradation of water quality which would impact habitat quality downstream of the Proposed Project and within the boundary of the SAC. White-clawed crayfish are sensitive to changes in water quality and require well oxygenated habitat, free of silt and pollution (Reynolds, 1998). An alteration in the availability of habitat suitability within the SAC would constitute a change from the baseline distribution of white-clawed crayfish which would alter the reference range for the species in the SAC, further inhibiting the maintenance of favourable conservation condition. The degradation of water quality could also reduce the carrying capacity of the SAC to support this species. Changes in the baseline distribution, water quality and habitat quality **would constitute an adverse effect on site integrity.**
Negative indicator species	Occurrence	No alien crayfish species	Crayfish plague has been confirmed within both the River Nore and the River Barrow (IFI press release August 2019[10] and September 2017[11]). The Proposed Project however will not include any instream works within any watercourse (within the SAC or upstream), thus there is no pathway for the introduction of alien crayfish or for the further spread of crayfish plague within the SAC, therefore, there is no potential for adverse effects as a result of the Proposed Project.
Disease	Occurrence	No instances of disease	
Sea Lamprey (*Petromyzon marinus*)			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	No instream works will be undertaken within the SAC as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility/migration through river channels, therefore, there is no potential for adverse effects.

[10] https://www.fisheriesireland.ie/news/notices/crayfish-plague-confirmed-in-the-river-nore#:~:text=An%20outbreak%20of%20crayfish%20plague,to%20help%20prevent%20its%20spread. (Accessed: October 2025).
[11] https://www.fisheriesireland.ie/news/press-releases/crayfish-plague-spreads-to-river-barrow-and-water-users-are-urged-to-follow#:~:text=19th%20September%202017%3A%20Large%20numbers,in%20the%20last%20two%20years (Accessed: October 2025).

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	The Proposed Project has the potential to result in a degradation of water quality downstream and within the SAC. The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey which would reduce the carrying capacity of the SAC to support lamprey. A reduction in water quality could reduce the population of this species. A reduction in fine spawning habitat, juvenile density and positive sample sites **would constitute an adverse effect on site integrity.**
Juvenile density in fine sediment	Juveniles/m²	Juvenile density at least 1/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Brook Lamprey (*Lampetra planeri*)			
Distribution	% of river accessible	Access to all watercourses down to first order streams	No instream works will be undertaken within the SAC as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility/anadromy through river channels, therefore, there is no potential for adverse effects.
Population structure of juveniles	Number of age/size groups	At least three age/size groups of brook/river lamprey present	The Proposed Project has the potential to result in a degradation of water quality downstream and within the SAC. The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey which would reduce the carrying capacity of the SAC to support lamprey. A reduction in water quality could reduce the population of this species. A reduction in fine spawning habitat, juvenile density and positive sample sites **would constitute an adverse effect on site integrity.**
Juvenile density in fine sediment	Juveniles/m²	Mean catchment juvenile density of brook/river lamprey at least 2/m²	
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
River lamprey (*Lampetra fluviatilis*)			
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem and major tributaries down to second order accessible from estuary	No instream works will be undertaken within the SAC as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility/migration through river channels, therefore, there is no potential for adverse effects.
Population structure of juveniles	Number of age/size groups	At least three age/size groups of river/brook lamprey present	The Proposed Project has the potential to result in a degradation of water quality downstream and within the SAC.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Juvenile density in fine sediment	Juveniles/m²	Mean catchment juvenile density of brook/river lamprey at least 2/m²	The degradation of water quality can reduce the availability of suitable habitat such as fine sediment and spawning habitat for lamprey which would reduce the carrying capacity of the SAC to support lamprey. A reduction in water quality could reduce the population of this species. A reduction in fine spawning habitat, juvenile density and positive sample sites **would constitute an adverse effect on site integrity.**
Extent and distribution of spawning habitat	m² and occurrence	No decline in extent and distribution of spawning beds	
Availability of juvenile habitat	Number of positive sites in 2nd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	
Atlantic salmon (*Salmo salar*)			
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary	No instream works will be undertaken within the SAC or as part of the Proposed Project. There is no potential for the Proposed Project to inhibit accessibility through river channels therefore, there is no potential for adverse effects.
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded	The Proposed Project has the potential to result in the degradation of water quality and habitat, which could result in further impacts on the CL of the River Nore. A decrease in adult spawning fish **would constitute an adverse effect on site integrity.**
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling	Crisp (2000) notes that 'salmon spawning site selection is governed by complex environmental factors, which are all essential for successful spawning, egg survival and hatching, including intra-gravel flow, gravel size, water depth, as well as stream velocity and cover' and that 'one of the most important factors for salmon egg survival is oxygen supply, which is dependent upon dissolved oxygen concentration and inter-gravel flow'. High concentrations of suspended solids in the river are undesirable as they are likely to result in infilling of the gravel pores with fine material. The release of suspended solids and/or pollution has the potential to impact spawning sites which **would constitute an adverse effect on site integrity.**
Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes	
Out-migrating smolt abundance	Number	No significant decline	No instream works will be undertaken within the Proposed Project or within the SAC. The Proposed Project will therefore

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
			not inhibit smolt out migration. There is no potential for adverse effects on out-migrating smolt abundance.
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	The Proposed Project may result in the degradation of water quality downstream, within the SAC. The Arrigale_020, the Arrigale_030 and the Nore_240 are located downstream of the Proposed Project and within the SAC boundary are assigned Q4-5, Q4 and Q3-4 values, respectively. The degradation of water quality due to the Proposed Project could prevent the above watercourses from maintaining and further downstream, achieving at least a Q4 water quality status. A degradation in water quality **would therefore constitute an adverse effect on site integrity.**
Otter (*Lutra lutra*)			
Distribution	Percentage positive survey sites	No significant decline	No works will be undertaken within the SAC boundary, therefore there is no potential for the disturbance of the species or change in its distribution within the SAC. In addition, no evidence of otter was recorded within the Proposed Project. There is no potential for adverse effects.
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 122.8ha above high water mark (HWM); 1136.0ha along riverbanks / around ponds	The Proposed Project will not result in any decline of terrestrial habitat within the SAC, as no works (including the clearance of vegetation) will occur outside the Proposed Project. There is therefore no potential for adverse effects.
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 857.7ha	The Proposed Project will not result in any decline in marine habitat, as no works (including the clearance of vegetation) will occur outside the Proposed Project. There is therefore, no potential for adverse effects.
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 616.6km	The Proposed Project will not result in any decline in the freshwater river habitat within the SAC, as no works (including the clearance of vegetation) will occur outside the Proposed Project. There is therefore no potential for adverse effects.
Extent of freshwater (lake) habitat	Hectares	No significant decline. Area mapped and calculated as 2.6ha	The Proposed Project will not result in any decline in the freshwater lake habitat, as no works (including the clearance of

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
			vegetation) will occur outside the Proposed Project. There is therefore, no potential for adverse effects.
Couching sites and holts	Number	No significant decline	No holts or couching sites were recorded within the Proposed Project, or within watercourses (150 m downstream) of the Proposed Project. However, there is potential for holts to be identified during pre-construction confirmatory surveys. As such, there is potential for a loss in the number of couching sites and holts as a result of the Proposed Project. A loss of couching sites and holts would therefore **constitute an adverse effect on site integrity.**
Fish biomass available	Kilograms	No significant decline	The potential degradation of water quality within the River Nore could affect the availability of fish biomass to otter and affects as a result of direct contact within pollutants. A significant pollution event from the works area could result in a decline in available feeding resources for otter. A significant decline in fish biomass available for otter **would constitute an adverse effect on site integrity.**

Appendix A-III ADVERSE EFFECTS ON SITE INTEGRITY – RIVER NORE SPA

Table 8-3 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of the River Nore SPA (NPWS, 2024a)

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Kingfisher (*Alcedo atthis*)			
Population size	Number of breeding territories/pairs	No significant decline in the long term	No instream works will be undertaken within the SAC or as part of the Proposed Project. Kingfisher require vertical sandy/soft banks for nesting/breeding for which no such habitat was identified within the study area of the Proposed Project. This habitat is prevalent along the main channel of the River Nore where known kingfisher territories were recorded (Cummins *et al.*, 2010). Kingfisher are also a predominantly sedentary species (Snow and Perrins, 1998; Goodship and Furness 2022). The Proposed Project will not take place within the SAC boundary and/or within proximity to the main River Nore channel. For these reasons, the Proposed Project will not result in adverse effects to the population size, breeding rates, territories and/or extent of breeding sites.
Productivity rate	Number of fledged young per confirmed breeding pair	Sufficient productivity to maintain the population trend as stable or increasing	
Spatial distribution of territories	Numbers and distribution of occupied territories across site	No significant loss of distribution in the long term, other than that occurring due to natural patterns of variation	
Disturbance to breeding sites	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact upon breeding Kingfisher	
Extent and quality of nesting banks and other suitable nesting features	Hectares; condition assessment	Sufficient area of high-quality nesting habitat to support the population target	
Forage spatial distribution, extent, abundance and availability	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable forage habitat and available forage biomass to support the population target	The Proposed Project has the potential to result in the degradation of water quality to waterbodies which are within and hydrologically connected to the SPA. The degradation of water quality within watercourses of the SPA could result in a decline in available feeding resources for kingfisher and impacts due to the direct contact with pollutants. A significant decline in feeding resources available for kingfisher **would constitute an adverse effect on site integrity.**
Water quality	Water quality indicators	Both biotic (i.e. Q-value) and abiotic indices reflect overall good-high quality status	
Barriers to connectivity	Number, location, shape and hectares	No significant increase	The Proposed Project will not include any instream works or any works within the SPA. There is no potential for the Proposed Project to result in barriers to connectivity. There is therefore, no potential for adverse effects.

Appendix A-IV Adverse Effects on Site Integrity – Wexford Harbour and Slobs SPA

Table 8-4 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of the Wexford Harbour and Slobs SPA (NPWS, 2012)[12]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Lesser black-backed gull (*Larus fuscus*)			
Population trend	Percentage change	Long term population trend stable or increasing	During VP surveys, lesser black-backed gull were recorded incidentally, foraging and loafing, within the proposed wind farm site during both breeding and non-breeding seasons. The peak count recorded during the breeding season VP surveys was a flock of 250 birds. During the non-breeding season, the peak count recorded was 187 birds. The CRM predicted 1.09 collisions during the non-breeding season and 6.84 collisions during the breeding season (based on VP survey data). This would equate to 277.83 collisions during the 35-year lifespan of the Proposed Project, or a collision every 0.66 years. Based on the Wexford Harbour and Slobs SPA baseline population of 1,086 individuals (data from I-WeBS -Irish Wetland Bird Surveys] [NPWS, 2011b]), the fatality of a single bird through collision with the wind turbines during the non-breeding season would equate to <0.1 % of the SPA population. The number of gulls recorded during the breeding and non-breeding season fluctuated. Furthermore, given the extensive foraging range (236 km [Woodward *et al.,* 2019]) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. Evidence also indicates that lesser black-backed gull does not exhibit macro-avoidance behaviour in response to wind farms (Furness, 2019). For the aforementioned reasons, the Proposed Project will not result in adverse effects to the population and distribution of lesser black-backed gull.
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	

[12] Only the SCIs with potential to be affected by the Proposed Project are considered as other SCIs have been excluded (refer to Section 6.1.3.4) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Appendix A-V ADVERSE EFFECTS ON SITE INTEGRITY – SALTEE ISLANDS SPA

Table 8-5 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of the Saltee Islands SPA (NPWS, 2011a)[13]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Lesser black-backed gull (*Larus fuscus*)			
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline	During VP surveys, lesser black-backed gull were recorded incidentally, foraging and loafing, within the proposed wind farm site during both breeding and non-breeding seasons. The peak count recorded during the breeding season VP surveys was a flock of 250 birds. During the non-breeding season, the peak count recorded was 187 birds. This species was not recorded breeding within the proposed wind farm site and surrounding area, with lack of breeding habitat noted for this species. The CRM predicted 1.09 collisions during the non-breeding season and 6.84 collisions during the breeding season (based on VP survey data). This would equate to 277.83 collisions during the 35-year lifespan of the Proposed Project, or a collision every 0.66 years. The main colony on the Saltee Islands SPA has an estimated population of 251 apparently occupied nests in 2015-2018 (Cummins *et al.*, 2019). Lesser black-backed gulls begin to disperse from their breeding colonies in July and by August many birds are likely to be hundreds of kilometres from their colonies (Gittings, 2020). If the population of 251 individuals were to occur outside of the SPA, the fatality of a single bird through collision with the wind turbines during the non-breeding season would equate to 0.4 % of the SPA population. The number of gulls recorded during the breeding and non-breeding season fluctuated. Furthermore, given the extensive foraging range (236 km [Woodward *et al.,* 2019]) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull.
Productivity rate	Mean number	No significant decline	
Distribution: breeding colonies	Number; location; area (hectares)	No significant decline	
Prey biomass available	Kilogrammes	No significant decline	
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	
Disturbance at the breeding site	Level of impact	No significant increase	

[13] Only the SCIs with potential to be affected by the Proposed Project are considered as other SCIs have been excluded (refer to Section 6.1.3.5) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
			Evidence also indicates that lesser black-backed gull does not exhibit macro-avoidance behaviour in response to wind farms (Furness, 2019). For the aforementioned reasons, the Proposed Project will not result in adverse effects to the breeding population, productivity rate, distribution, availability of prey biomass, provide a barrier to connectivity and/or disturbance to breeding sites of lesser black-backed gull.

Appendix A-VI Adverse Effects on site Integrity – Poulaphouca Reservoir SPA

Table 8-6 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of Poulaphouca Reservoir SPA (NPWS, 2024b)[14]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Lesser black-backed gull (*Larus fuscus*)			
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	During VP surveys, lesser black-backed gull were recorded incidentally, foraging and loafing, within the proposed wind farm site during both breeding and non-breeding seasons. The peak count recorded during the breeding season VP surveys was a flock of 250 birds. During the non-breeding season, the peak count recorded was 187 birds. This species was not recorded breeding within the proposed wind farm site and surrounding area, with lack of breeding habitat noted for this species. The CRM predicted 1.09 collisions during the non-breeding season and 6.84 collisions during the breeding season (based on VP survey data). This would equate to 277.83 collisions during the 35-year lifespan of the Proposed Project, or a collision every 0.66 years. Supporting documents assessing the lesser black-backed gull population in this SPA are unavailable, but the site synopsis document outlines a winter population of 651 individuals (NPWS, 2014c). Based on this, the fatality of a single bird through collision with the wind turbines during the non-breeding season would equate to 0.2 % of the SPA population. The number of gulls recorded during the breeding and non-breeding season fluctuated. Furthermore, given the extensive foraging range (236 km [Woodward *et al.,* 2019]) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. Evidence also indicates that lesser black-backed gull does not exhibit macro-avoidance behaviour in response to wind farms (Furness, 2019).
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	
Forage spatial distribution, extent and abundance	Location, hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	

[14] Only the SCIs with potential to be affected by the Proposed Project are considered as other SCIs have been excluded (refer to Section 6.1.3.6) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
			For the aforementioned reasons, the Proposed Project will not result in adverse effects to the winter population and spatial distribution and disturbance of such, result in barriers to connectivity, the spatial distribution, extent and abundance of foraging areas, roost distribution and extent and/or supporting habitat of lesser black-backed gull.

Appendix A-VII Adverse Effects on site Integrity – Ballycotton Bay SPA

Table 8-7 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of Ballycotton Bay SPA (NPWS, 2014a)[15]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Lesser Black-backed Gull (*Larus fuscus*)			
Population trend	Percentage change	Long term population trend stable or increasing	During VP surveys, lesser black-backed gull were recorded incidentally, foraging and loafing, within the proposed wind farm site during both breeding and non-breeding seasons. The peak count recorded during the breeding season VP surveys was a flock of 250 birds. During the non-breeding season, the peak count recorded was 187 birds. The CRM predicted 1.09 collisions during the non-breeding season and 6.84 collisions during the breeding season (based on VP survey data). This would equate to 277.83 collisions during the 35-year lifespan of the Proposed Project, or a collision every 0.66 years. Based on Ballycotton Bay SPA baseline population of 1,293 individuals (data from I-WeBS [5 year mean peak for the period 1995/1996 to 1999/2000] [NPWS, 2014d]), the fatality of a single bird through collision with the wind turbines during the non-breeding season would equate to <0.1 % of the SPA population. The number of gulls recorded during the breeding and non-breeding season fluctuated. Furthermore, given the extensive foraging range (236 km [Woodward *et al.,* 2019]) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. Evidence also indicates that lesser black-backed gull does not exhibit macro-avoidance behaviour in response to wind farms (Furness, 2019).
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by golden plover, other than that occurring from natural patterns of variation	

[15] Only the SCIs with potential to be affected by the Proposed Project are considered as other SCIs have been excluded (refer to Section 6.1.3.7) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
			For the aforementioned reasons, the Proposed Project will not result in adverse effects to the population and distribution of lesser black-backed gull.

Appendix A-VIII ADVERSE EFFECTS ON SITE INTEGRITY – CORK HARBOUR SPA

Table 8-8 Assessment of the Potential for Adverse Effects (Pre-Mitigation) on the Conservation Objectives of Cork Harbour SPA (NPWS, 2014b)[16]

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
Lesser Black-backed Gull (*Larus fuscus*)			
Population trend	Percentage change	Long term population trend stable or increasing	During VP surveys, lesser black-backed gull were recorded incidentally, foraging and loafing, within the proposed wind farm site during both breeding and non-breeding seasons. The peak count recorded the during breeding season VP surveys was a flock of 250 birds. During the non-breeding season, the peak count recorded was 187 birds. The CRM predicted 1.09 collisions during the non-breeding season and 6.84 collisions during the breeding season (based on VP survey data). This would equate to 277.83 collisions during the 35-year lifespan of the Proposed Project, or a collision every 0.66 years. Based on the Cork Harbour SPA baseline population of 783 individuals (data from I-WeBS [5 year mean peak for the period 1995/1996 to 1999/2000] [NPWS, 2014e]), the fatality of a single bird through collision with the wind turbines during the non-breeding season would equate to <0.1 % of the SPA population. The number of gulls recorded during the breeding and non-breeding season fluctuated. Furthermore, given the extensive foraging range (236 km) and availability of suitable habitat in the wider area, the proposed wind farm site is not considered to be a key foraging resource for lesser black-backed gull. Evidence also indicates that lesser black-backed gull does not exhibit macro-avoidance behaviour in response to wind farms (Furness, 2019).
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by golden plover, other than that occurring from natural patterns of variation	

[16] Only the SCIs with potential to be affected by the Proposed Project are considered as other SCIs have been excluded (refer to Section 6.1.3.8) due to distance or because they are not sensitive to the identified impacts and effects and thus not likely to be affected.

Attributes	Measures	Target	Potential for Adverse Effects on Site Integrity
			For the aforementioned reasons, the Proposed Project will not result in adverse effects to the population and distribution of lesser black-backed gull.

Appendix A-IX APPROPRIATE ASSESSMENT SCREENING REPORT

TOBIN

Ballyfasy Wind Farm, Co. Kilkenny

Appropriate Assessment Screening Report

MANOGATE LTD

A **FuturEnergy Ireland** and **ART Generation** Joint Venture

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1. INTRODUCTION

TOBIN was commissioned by Manogate Limited to prepare a report to inform the screening for Appropriate Assessment (AA) for submission to An Coimisiún Pleanála as part of a planning application for the proposed Ballyfasy Wind Farm in County Kilkenny and all associated infrastructure ('the Proposed Project[1]').

1.1 DESCRIPTION OF THE PROPOSED WIND FARM SITE

The proposed wind farm is located in the southern portion of County Kilkenny within the townlands of Ballyfasy Upper, Knockbrack, Bishopsmountain, Ballymartin and Ballywairy. The proposed project is located ca. 3.5 km east of Mullinavat, ca. 4 km south of Listerlin and ca. 5 km northwest of Glenmore.

The wind farm site study area is ca. 348.14 ha in size and is present within Coillte forestry in addition to private agricultural land, with a total footprint of ca. 53 ha for the proposed wind farm[2] infrastructure. Access to the proposed wind farm site is via the local roads L3417, L7499, and L3424.

1.2 OVERVIEW DESCRIPTION OF THE PROPOSED PROJECT

In summary, the Proposed Project comprises:

- A wind farm of 10 no. turbines, onsite 110 kilovolt (kV) substation and ancillary infrastructure such as turbine foundations, hardstanding areas, borrow pits and access roads. Design flexibility is being sought from An Coimisiún Pleanála for the turbine ranges (i.e., tip height, rotor diameter and hub height) used by the Proposed Project;
- Grid Connection Options (GCO) (two options being considered). Design flexibility is being sought from An Coimisiún Pleanála for the GCO's; and
- Works along the proposed Turbine Delivery Route (TDR). Further details on the TDR are included in Section 3.

Two GCO's are being considered to connect the proposed wind farm to the national grid. Only one GCO will be constructed for the Proposed Project. Proposed GCO One is a 12 km long underground cable connection from the proposed onsite 110 kV substation to the consented Castlebanny Wind Farm 110 kV substation (An Coimisiún Pleanála reference 309306-21). Proposed GCO Two would connect the onsite 110 kV substation to the existing 110 kV Great Island-Kilkenny Line via a loop in connection within the proposed wind farm site southeast of turbine (T) 6. Both GCO's have been fully assessed within this AA Screening. Along the proposed TDR, works will be required to allow for the delivery of oversize loads, these areas are referred to as proposed TDR works areas. The design flexibility ranges have been fully considered within this AA Screening. Further details on the Proposed Project are provided in Section 3 of this report.

[1] Reference to the 'Proposed Project' refers to the whole development which includes the wind farm site and all associated infrastructure (e.g., grid connection options and turbine delivery route).

[2] Reference to the 'proposed wind farm site' refers to the proposed turbines, on-site substation and ancillary infrastructure.

1.3 PURPOSE OF THIS REPORT

The EU Habitats Directive (92/43/EEC) and the Birds Directive 2009/147/EC are transposed into Irish law through the European Communities (Bird and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) and the Planning and Development Act 2000 (as amended)whereby European sites comprise Special Areas of Conservation (SAC) and Special Protection Areas (SPA) (this definition is also outlined in EHLG (2009).

The purpose of this report is to provide supporting information to assist the competent authority, in this case An Coimisiún Pleanála to carry out screening for likely significant effects on European sites arising from the Proposed Project.

1.4 RELEVANT LEGISLATION

The main pieces of relevant legislation are as follows:

- The Habitats Directive 92/43/EEC;
- The Birds Directive 2009/147/EC;
- European Communities (Birds and Natural Habitats) Regulations 2011 – 2022; and
- Planning and Development Acts 2000 - PART XAB.

2. METHODS

The approach taken in preparing this document complies with standard methods and best practice guidance, as listed in Section 9 References.

2.1 SCOPE

The scope of this AA Screening report is to determine, on the basis of a preliminary assessment and objective criteria, whether the Proposed Project, alone and in-combination with other plans or projects, has the potential for likely significant effects on a European site(s) in view of the site's conservation objectives.

The approach can be summarised as follows:

- Identify the Zone of Influence (ZoI) of the Proposed Project and European sites within this area;
- Identify the qualifying interests (QIs)/special conservation interests (SCIs) of the European sites within the ZoI and review their conservation objectives;
- Review whether there is potential for the QIs/SCIs to be affected by the Proposed Project based on information such as the vulnerabilities of the European site, proximity to the Proposed Project, and the nature and scale of the works associated with the Proposed Project;
- Consider the likelihood of the identified potential impacts occurring based on the information collated and professional judgement; and
- Identify any potential likely significant effects on European sites.

2.1.1 Study Area and Survey Area

The study areas for the desk study and field surveys were identified by considering the nature of the Proposed Project, the size and location of the Proposed Project and the ecological features likely, or known, to be present. Further details describing the survey area for the field surveys undertaken is provided in Section 2.2.2.

2.1.2 Zone of Influence

The ZoI is defined by the Chartered Institute of Ecology and Environmental Management (CIEEM) as follows:

> *"The 'zone of influence' for a project is 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. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change."* (CIEEM, 2018).

Irish guidance (DoEHLG, 2010) states, for the zone of influence of plans:

> "*A distance of 15 km is currently recommended in the case of plans derives from UK guidance (Scott Wilson et al, 2006)*". The guidance goes on to state that "*for projects, the distance could be much less than 15 km, and in some cases less than 100 m, but this*

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."

The ZoI for the Proposed Project has been identified through a review of the nature and scale of the development, the development location relative to European sites, presence of ecological and landscape connectivity, such as waterways, hedgerows and treelines between the Proposed Project and European sites, known impacts and effects likely to arise as a result of this type of project, distance from European sites and the QIs/SCIs of the European sites.

The ZoI of the Proposed Project is discussed in Section 5.1.1 of this report.

2.1.3 Consultation

Consultation with various state agencies and environmental Non-Governmental Organisations (NGOs) was undertaken in September 2023, October 2024 and May 2025 which included Inland Fisheries Ireland (IFI) and the Development Application Unit (DAU) of the National Parks and Wildlife Service (NPWS).

The following paragraphs set out the responses received in relation to Biodiversity from the above consultees.

IFI

A response was received from IFI on the 17th October 2023 and on the 18th November 2024 which highlighted a number of ecological concerns which included; ecological water quality and no deterioration of such, baseline ecological assessments (including fish species and biological surveys), management of materials to ensure no matter reaches surface waters, restriction on instream works during the period 1st July to 30th September, minimisation of water crossings, soil erosion, borrow pit locations and to ensure full environmental assessments are undertaken (e.g., EIAR, Natura Impact Statement [NIS], Construction Environmental Management Plan [CEMP]). In response to IFI concerns, TOBIN have undertaken a full suite of aquatic surveys (in 2023, 2024 and 2025), both within and downstream of the Proposed Project, in order to inform the planning application. TOBIN has also prepared this AA Screening report, Natura Impact Statement (NIS) and associated ecological reports (i.e. EIAR) which fully assessed the receiving aquatic environment, and which will ensure the protection of all hydrologically connected watercourses during all works associated with the Proposed Project.

DAU

A response was received from the DAU on the 20th November 2024 (reference: G Pre003462024) however the response related to archaeology only and no reference was made to ecological concerns. Further correspondence was made on the 27th May 2025, and a response was received on the 5th June 2025, whereby DAU acknowledged receipt and had no further comment on this consultation. No reference was made to ecological concerns by the DAU.

2.2 Baseline Data Collection

2.2.1 Desk Study

The ecological desk study for the Proposed Project consisted of the following:

- Identification of all European sites within the ZoI of the Proposed Project and review of their site synopsis, Natura 2000 data forms and Conservation Objectives (NPWS, 2025a);
- NPWS datasets on Annex I habitats, Annex II species and Annex I bird species (NPWS, 2025b);
- Article 17 habitats and species datasets (NPWS, 2019a; NPWS, 2019b);
- NPWS sensitive data request (NPWS, 2025c); and
- Annex II species and Annex I bird species recorded by the National Biodiversity Data Centre (NBDC) for grid squares (hectad) S51, S52, S53, S61, S62 and S63 which encompass the Proposed Project (NBDC, 2025).

2.2.2 Field Survey

A range of ecological field surveys were undertaken within the survey areas (as defined in the relevant sections below) in September 2022, September 2023, August 2024, April and August 2025 by qualified and experienced TOBIN Ecologists (see Section 2.3).

The ecological surveys that were carried out are relevant to the consideration of the potential for the Proposed Project to affect the conservation objectives of European sites in the ZoI of the Proposed Project, namely otter (*Lutra lutra*) surveys, bird surveys and fish and aquatic surveys, all of which are described hereunder. While additional ecological surveys were undertaken, they are not specifically relevant to this AA Screening. See the Environmental Impact Assessment Report (EIAR) (submitted with the Planning Application) for full details of all ecological surveys undertaken within the Proposed Project.

2.2.2.1 Bird Surveys

The bird survey areas for the assessment have been determined based on the ZoI, bird survey areas and guidance on potential connectivity to designated sites (SNH, 2016). A study area of 20 km has been used, on a precautionary basis, for this assessment based on the maximum core foraging range of pink footed goose.

2.2.2.1.1 Vantage Point

Vantage Point Surveys (VPS) were carried out between May 2020 and March 2025 (inclusive) from three Vantage Points (VP) locations (Table 2-1). No surveys were completed between August 2021 and April 2022 (inclusive). There were initially two VPs (VP1 and VP2). The third (VP3) was added to the survey schedule from January 2023 onwards to ensure full coverage of the survey area. The VPs were selected to provide coverage of the proposed turbine locations and a surrounding 500 m buffer (the VP survey area) in line with NatureScot (2017) guidance[3].

The VPs were selected using viewshed analysis of the proposed wind farm site, turbine locations and a 500 m buffer, undertaken using Geographic Information Systems (GIS) software. This analysis was originally completed for a smaller proposed wind farm layout in May 2020. Following this, VP1 and VP2 were selected for the completion of VPS. The layout of the proposed wind farm site was revised in December 2022 with the addition of two turbines to the

[3] It should be noted that the NatureScot guidance 'Recommended bird survey methods to inform impact assessment of onshore windfarms' was updated during 2025, however 2017 guidance was used for surveys undertaken prior to update of the guidance.

west of the original eight turbines. A revised viewshed analysis was then completed and the additional VP location (VP3) was selected. The layout of the proposed wind farm site was revised again in April 2024 with an 11-turbine design. Viewshed analysis was repeated following this and it was determined that the additional turbine fell within the viewshed of VP3, and there was no requirement for additional VPs. A total of 3 years' surveys were carried out with the revised VPs which aligns with/exceeds NatureScot (2017) guidance.

In line with NatureScot (2017) guidance, VPS focused on 'target species'. These are species which are afforded a higher level of legislative protection, are of particular conservation concern, or are at particular risk from onshore wind developments. Target species during VPS were as follows:

- All gull species;
- Any species listed on Annex I of the EU Birds Directive;
- Any species listed as Red or Amber of the Birds of Conservation Concern Ireland (BoCCI) 2020-26 (Gilbert *et al.,* 2021), where collision risk presents potential for population level effects; and
- Species with potential connectivity to nearby European sites i.e. SPAs.

Each recorded flight path was numbered and cross-referenced, with the following data recorded:

- Number of birds;
- Behaviour where applicable (e.g., foraging, commuting, display etc);
- Duration of flight within the VP viewshed; and
- Flight height range and flight duration.

During the breeding season VPS were completed at varying times during the day, ranging from early morning to late evening, so that patterns of bird activity could be recorded. The height bands used to estimate flight height were:

- 1 - <20 m;
- 2 – 20 m to 40 m;
- 3 – 40 m to 120 m; and
- 4 - >120 m.

During the non-breeding seasons of 2020/2021 and 2022/2023, VPS were undertaken diurnally. During the 2023/2024 and the 2024/2025 non-breeding seasons, some VPS were undertaken commencing either 30 minutes prior to sunrise or terminating at least 30 minutes after sunset. Surveys during these times facilitated the potential recording of any crepuscular flight activity associated with certain key species, such as commuting flights of wetland birds and hen harrier roost flights.

Table 2-1 Summary of VP Survey Effort

Season	Breeding/Non-breeding	Years	Survey Hours		
			VP1	VP2	VP3
1	Breeding	2020	32	32	N/A
2	Non-breeding	2020/2021	39	33	N/A
3	Breeding	2021/2022	46	50.5	N/A
4	Non-breeding	2022/2023	36	36	27
5	Breeding	2023	36	39	39
6	Non-breeding	2023/2024	37	37.5	38
7	Breeding	2024	36	36	36
8	Non-breeding	2024/2025	39	36	36.5
Total			301	300	176.5

2.2.2.1.2 Breeding Bird Surveys

Breeding Bird Surveys (BBS) were conducted during the 2020, 2023 and 2024 breeding seasons (refer to Appendix A-II for full details on survey dates). Five transects (BBST1 to BBST5) were selected to provide coverage of the proposed wind farm site at the commencement of surveys, plus a 500 m buffer (the BBS survey area). Surveys were undertaken using an adapted British Trust for Ornithology (BTO) Breeding Bird Survey methodology with all species seen or heard recorded (BTO, 2018). Habitats present within the BBS survey area consisted of open grassland, grassland margins, hedgerows, conifer plantation, and heath.

During the breeding seasons, the transect surveys were completed between April and July inclusive. There were three survey visits during the 2020 breeding season, covering BBST1 and BBST2, four visits in 2023, covering BBST1 to BBST4, and five visits in 2024, covering BBST1 to BBST5. Surveys were undertaken in suitable weather conditions. The timing of surveys did not strictly follow the BTO, 2018 guidance however, this methodology is targeted towards songbirds which sing at dawn; passerine species are not generally considered to be significantly impacted by wind farms (NatureScot, 2017).

Throughout the survey programme, all species seen or heard were recorded. The target species and number of individuals were recorded to establish the species assemblage and abundance along each transect (NatureScot, 2017).

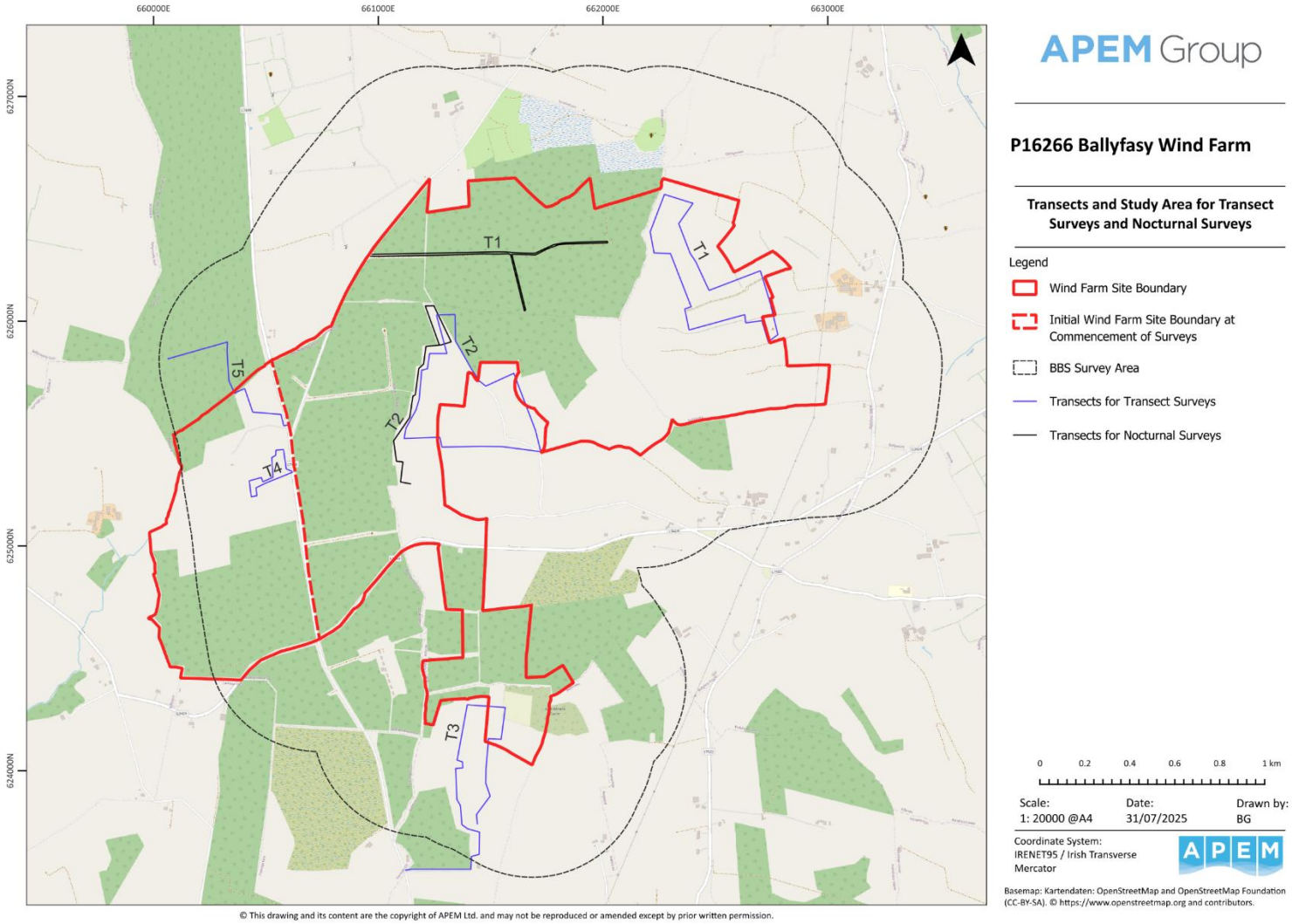


Figure 2-1 Transect and Nocturnal Survey Areas

2.2.2.1.3 Nocturnal Surveys

To supplement the BBS, additional dusk visits were undertaken to record crepuscular or nocturnal species which are difficult to detect during standard surveys. Target species included all owl species, woodcock and nightjar. Nocturnal surveys were completed along two transects (Figure 2-1) within the BBS survey area, with a single visit during the 2023 breeding season and two visits during the 2024 breeding season. Surveys commenced between 21:20 and 21:50 and terminated between 22:20 and 23:15. The location of any target species seen or heard during the transect surveys were recorded using ArcGIS Field Maps.

2.2.2.1.4 Wintering Bird Surveys

Wintering Bird Surveys were undertaken during the 2020/2021, 2023/2024 and 2024/2025 non-breeding seasons. The survey method used was the 'look-see' methodology outlined by Bibby *et al.,* (2000), with transects walked at a steady pace and the number of birds seen or heard tallied for each transect. Throughout the survey programme, all species seen or heard were recorded. The target species (refer to Section 2.2.2.1.1) and number of individuals were recorded to establish the species assemblage and abundance along each transect. Surveys were completed over two visits in November and February during each non-breeding season. The survey area and transects utilised in these surveys are identical to those employed during the breeding season surveys.

BBST1 and BBST2 were surveyed in the non-breeding season of 2020-2021, BBST1 to BBST4 were surveyed in 2023-2024, though BBST4 was not surveyed in February 2024, and all five transects were surveyed in 2024-2025.

2.2.2.1.5 Hinterland Surveys

Hinterland surveys were completed from three VP locations (HVP1, HVP2 and HVP3) in the wider area surrounding the proposed wind farm site. These locations were surveyed to determine the presence of breeding peregrine and roosting hen harrier within a 2 km buffer around the proposed wind farm site.

During the breeding season the HVP surveys were completed during daytime hours. During the non-breeding season, these surveys were timed to commence 30 minutes before sunrise or terminate 30 minutes after sunset to survey for roosting hen harriers. All HVP surveys were completed over one to two hours.

2.2.2.2 Marsh Fritillary

Marsh fritillary (*Euphydryas aurinia*) surveys were carried out by TOBIN Ecologists on the 11th of August 2025 within the study area of the Proposed Project (refer to Figure 3-1). Survey methodology followed the UK Butterfly Conservation Monitoring Scheme Methodology for Marsh Fritillary Larval Webs (UKBMS 2019). Larval surveys were carried out in sunny conditions during the optimal survey period (August to September) when colonies of individuals are known to construct conspicuous webs over devil's-bit scabious (*Succisa pratensis*) leaves and adjacent vegetation.

2.2.2.3 Otter

Otter surveys were carried out following the approach set out in the NRA (2008) guidelines. The otter surveys were conducted in September 2022, 2024, and 2025 at waterbodies within 150

m of any proposed infrastructure. In addition, all drains and watercourses at lands accessed were checked for signs of otter presence and activity such as holts (breeding and temporary), slides and territorial marking points (spraints), each sign was recorded.

2.2.2.4 Fish and Aquatic Ecology

The Proposed Project is present within both the Suir and Nore catchments. Surface water features present within, and hydrologically connected to, the Proposed Project includes four WFD river waterbodies;

- Blackwater (Kilmacow)_020 River (WFD waterbody code: IE_SE_16B020091) (corresponding EPA name: Ballyknockbeg [EPA code: 16_1485]);
- Smartscastle Stream_010 River (IE_SE_16S070500) (corresponding EPA name: Smartscastle (Stream) [EPA code: 16_3474];
- Arrigle_010 River (IE_SE_15A020100) (corresponding EPA name: Smithstown 15 [EPA code: 15_1470]); and
- Arrigle_020 River (IE_SE_15A020250) (corresponding EPA name: Mullenhakill [EPA code: 15_637]).

Aquatic surveys (crayfish sampling [CS], kick sampling [KS] and visual assessment [VA]) were carried out by TOBIN Ecologists at a total of 18 aquatic survey sites (refer to Figure 2-2 and Figure 2-3) that drain the Proposed Project and eventually flow into downstream European sites. The European sites concerned include the Lower River Suir SAC (site code: 002137), the River Barrow and River Nore SAC (002162) and the River Nore SPA (004233), which are at various distances from the Proposed Project (Section 5.2). A description of the survey methods is provided below.

2.2.2.4.1 Aquatic Habitat Suitability Survey

An assessment on the suitability of the riverine habitat to support aquatic species of conservation concern was conducted on all 18 aquatic survey sites and focused on Annex II species listed as QIs for European sites within the ZoI of the Proposed Project (Section 5.2). Such species included white-clawed crayfish (*Austropotamobius pallipes*), brook- (*Lampetra planeri*), river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*), Atlantic salmon (*Salmo salar*) and freshwater pearl mussel (FWPM) (*Margaritifera margaritifera*).

2.2.2.4.2 White-clawed Crayfish

White-clawed crayfish surveys were carried out at a total of six aquatic survey sites (aquatic sites 2, 4, 7, 10, 11 and 12); two locations on the Blackwater (Kilmacow)_020 River, two locations on the Smartscastle Stream_010 and two locations on the Arrigle_010 River (Figure 2-2).

Surveys were carried out by suitably qualified TOBIN Ecologists under licence (NPWS Licence No. C158/2028) from the NPWS. The surveys were conducted in August and September, at which time there is no 'berried' females or females with young hatchling still attached and when crayfish are most active and present in shallow waters (Reynolds, 2006).

The surveys consisted of the assessment of suitable habitat, hand and visual searching and trapping as per Reynolds *et al.,* (2010), O'Connor *et al.,* (2009), Peay (2003). Refuge sites such as spaces under large boulders and crevices or burrows within the riverbanks were investigated by hand using gloves and small nets as required.

2.2.2.4.3 Atlantic Salmon

A fisheries assessment of river waterbodies was carried out on all waterbodies at a total of 17 aquatic survey sites (all sites with the exception of survey site 12 [crayfish only]) utilising elements of the approaches in the Fishery Assessment Methodology (O'Grady, 2006) and '*Ecology of the Atlantic Salmon'* (Hendry and Cragg-Hine, 2003) to broadly characterise the river sites (i.e., channel profiles, substrata etc.).

A broad appraisal/overview of the upstream and downstream habitat at each site was undertaken to evaluate the watercourse's ability to support salmonids.

2.2.2.4.4 Lamprey Species

An evaluation of potential lamprey habitats within the study area was carried out on all waterbodies at a total of 17 aquatic survey site (all sites with the exception of survey site 12 [crayfish only]) using methodologies outlined in '*Ecology of the River, Brook, and Sea Lamprey'* (Maitland, 2003) and NPWS Irish Wildlife Manuals lamprey surveys (O'Connor, 2007).

Scoop surveys were undertaken in suitable habitat to identify the presence or absence of the three lamprey species listed as QIs of European sites within the ZoI of the Proposed Project. This involved taking a sample of the silt (at the edge of the riverbank) with a hand net. The hand net was inserted into the sediment at a 45° angle, and a volume of silt was scooped into the net, and the sediment was checked for lamprey (ammocetes, juveniles and adults). Any lamprey caught were then identified using the field guide produced by Gardiner (2003).

2.2.2.4.5 Freshwater Pearl Mussel

Ecofact Environmental Consultants Ltd. were appointed by TOBIN to undertake a Stage 1 freshwater pearl mussel (*Margaritifera margaritifera*) survey within watercourses located downstream of the Proposed Project to establish whether the species is present within the ZoI. The study area included the proposed wind farm site and 5 km downstream. The survey was undertaken under license (NPWS Licence No. C131/2024) in September 2024 under optimal environmental conditions, and followed the methodology outlined within the NPWS guidance '*Margaritifera margaritifera' Stage 1 and Stage 2 survey guidelines* (Anon, 2004). The survey considered both the Nore pearl mussel (*Margaritifera durrovensis*) and the freshwater pearl mussel, but both species are collectively referred to as freshwater pearl mussel (FWPM) with this report.

A total of 14 FWPM sites were surveyed; seven sites on the Arrigle_010 River, two sites on the Blackwater (Kilmacow)_020 River, four sites on the Smartscastle Stream_010 and one site on Oaklands_010 River (IE_SE_14O130860), which are illustrated on Figure 2-4. The FWPM survey report is included in Appendix A-I of this report.





Legend

- Proposed Wind Farm Boundary
- Rivers

Aquatic Survey Locations

- CS
- KS
- KS|CS
- VA

0 500 1,000
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	13/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-2:
Aquatic Survey Site Locations
Within and Downstream of
the Proposed Wind Farm Site

Scale @ A3: 1:25,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

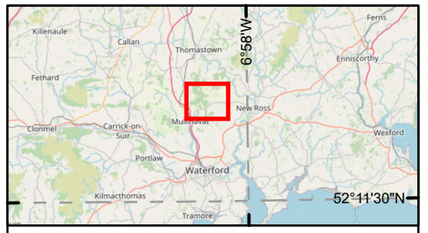
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Map Ref: 11474-025-Aq.SL-P.App.BO-TOB-A

Draft: A





Legend

- Wind Farm Study Area
- Grid Connection Options
  - Option 1
  - Option 2
  - Unmapped stream GCO1
  - Rivers
- Aquatic Survey Locations
  - KS
  - KS|CS
  - VA

0 500 1,000
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	13/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-3:
Aquatic Survey Site Locations
at the Proposed GCO One

Scale @ A3: 1:30,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

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Map Ref: 11474-026-Aq.SL..GC0-P.App.BO-TOB-A

Draft: A

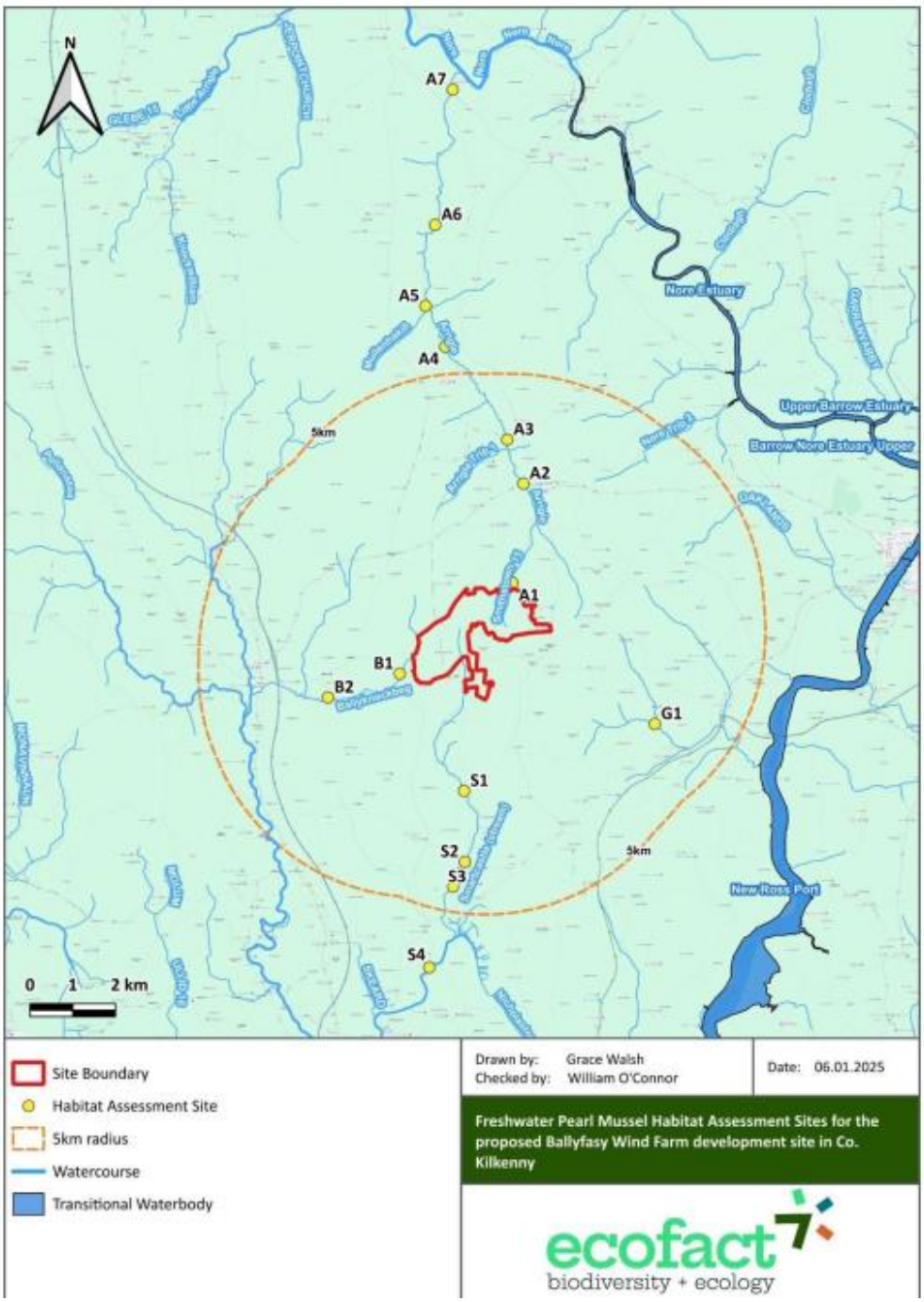


Figure 2-4 Freshwater Pearl Mussel Survey Sites (Arrigle River [A Site Numbers], Ballyknockbeg River [B], Glenmore River [G] and Smartscastle (Stream) [S]).

2.3 PROJECT TEAM

This report was prepared by Sarah Nolan MEng.Sc and B.Sc. (Hons), Project Ecologist with TOBIN. Sarah has nine years post-graduate experience in the environmental sector of which six years are within environmental consultancy. Sarah's experience includes public and private infrastructure developments where she conducts Screenings for Appropriate Assessment and Natura Impact Statements.

This report was senior reviewed by Laura Higgins is a Senior Ecologist with TOBIN and is skilled in the preparation of Ecological Impact Assessments, Appropriate Assessment Screenings and NISs. Laura's role in the project consisted of review of ecological reports. She is a full member of the Chartered Institute of Ecology and Environmental Management, she is therefore also bound by their Code of Professional Conduct.

2.3.1 TOBIN Ecologists

Further credentials of TOBIN Ecologists are provided hereunder.

Sarah Nolan BSc. (Hons) Earth & Ocean Science, MEngSc. Water, Waste & Environmental Engineering

Sarah Nolan is a qualified Project Ecologist with nine years post-graduate experience in the environmental sector of which five years are within environmental consultancy. Sarah also carried out habitat, protected species and INNS surveys and aquatic surveys (biological water quality) for the Proposed Project. Sarah predominantly carries out Screenings for Appropriate Assessment, Natura Impact Statements and Preliminary Ecological Constraints Reports. Sarah is also responsible for the data analysis and report writing for the objective of No Net Loss of Biodiversity for a large infrastructure development in Ireland.

Laura Higgins B.Sc. (Hons) Applied Ecology

Laura is a Senior Ecologist with TOBIN and holds Full CIEEM Membership. Laura has been responsible for the management and delivery of a wide range of project types for the public and private sectors including large scale residential, industrial and infrastructure developments.

Áine Sands B.Sc. (Hons) Applied Ecology

Áine is a qualified Senior Ecologist with over 10 years post-graduate experience in ecology and environmental consultancy and holds Full CIEEM Membership. Áine has acted as Lead Ecologist for a number of large renewable energy projects, with a particular focus on wind farm development. Áine has a strong understanding of National and European legislation associated with biodiversity and is cognisant of relevant rulings by the Court of Justice of the European Union (CJEU). Áine's role in the project consisted of habitat, protected species and INNS surveys and senior review of the Biodiversity Chapter of the EIAR.

Sinéad O'Reilly B.Sc. (Hons) Zoology M.Res Freshwater Ecology

Sinéad O' Reilly, a Senior Ecologist with TOBIN, undertook the aquatic surveys and contributed to this chapter. She is a qualified and experienced environmental consultant with thirteen years' post-graduate experience in freshwater sciences and environmental consultancy in Ireland. Sinead has a strong technical background as a freshwater ecologist and has extensive field

experience in freshwater habitats and species across Ireland. Sinéad's role in the project consisted of aquatic surveys (biological river quality and white-clawed crayfish surveys).

2.3.2 Third-Party Specialists

Ecofact Environmental Consultants

The FWPM surveys were undertaken by Dr. William O'Connor with assistance from Grace Walsh M.Sc. and Eoin McMahon. Dr. William O'Connor is a senior environmental scientist who has over 20 year's professional ecological management experience. He is a graduate of the University of Wales, Cardiff where he was awarded an MS.c in Applied Hydrobiology, and the National University of Ireland, Galway where he received a PhD degree in Zoology.

APEM Ltd

The ornithology assessment was completed to inform the ornithology chapter of the EIAR accompanying this application. The assessment has informed this AA Screening report where relevant, and was undertaken by the following ornithologists:

Senior Ornithologist Billy Gardener (MSc.Res, BSc. [Hons]) who was the lead author of the EIAR and undertook the collision risk modelling. Billy has almost 4 years' experience in consultancy, including working on a number of Irish wind farm EIA projects. Billy has managed many surveys, undertaken impact assessments and conducted Collision Risk Modelling.

Principal Ornithology Consultant Matt Rea (MSc., BSc. [Hons], Associate member of CIEEM [ACIEEM]). Matt is an experienced ornithologist with ten years of consultancy experience who has worked on over 60 onshore wind projects across the UK and Ireland. He has managed surveys, undertaken numerous impact assessments and is experienced in Collision Risk Modelling. Matt assisted with technical guidance and was the reviewer for the Ornithology Chapter.

3. DETAILS OF THE PROPOSED PROJECT

The Proposed Project (Figure 3-1) will occupy an area of ca. 348.14 ha in County Kilkenny. The proposed wind farm site borders between the L3417, L7499, L3424 and L3420 local roads. It is located ca. 4 km east from the M9 motorway at Mullinavat. GCO One (if constructed) will involve cables being laid within a section of the L7499, L3417, R704 and L3418 roads. GCO Two is present within the proposed wind farm site and will connect the onsite 110 kV substation to the existing 110kV Great Island-Kilkenny Line via a loop in connection.

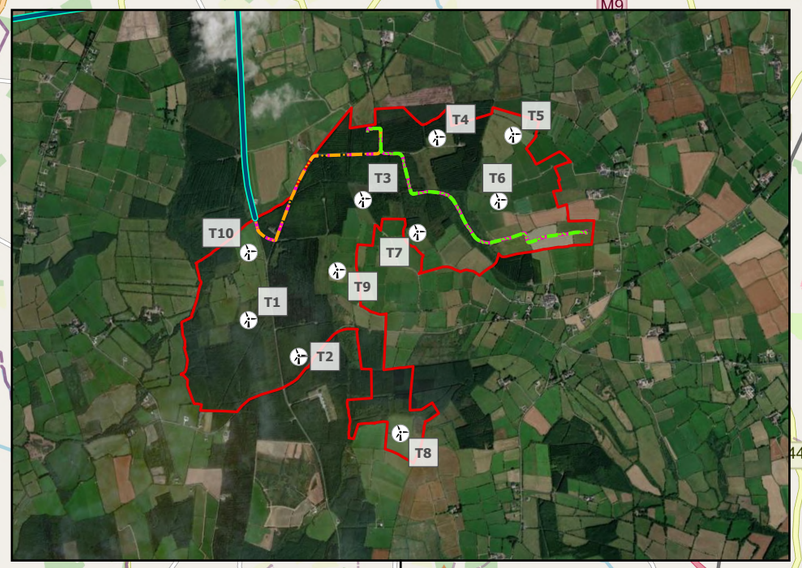
A summary of the Proposed Project, as relevant to this AA Screening, is as follows:

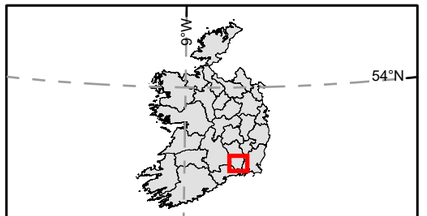
- The erection of 10 turbines. Each turbine will have a maximum blade tip height of between 170 m – 180 m, a rotor diameter of between 149 m – 163 m and a hub height of 95 m – 105.5 m;
- The project will have a MEC of between 57 – 72 MW;
- Associated hardstandings at each turbine location;
- New access roads and upgrading of existing access roads;
- Five permanent site entrances (a new permanent site entrance at the L3417 local road and modifications to existing site entrances along the L3417, L7499 and L3424 local roads);
- A new temporary road crossing location to allow turbine delivery along the L3417, L7499 and L3424 local roads;
- Permanent construction of ca. 6.5 km of new internal site access roads and upgrade of ca. 2 km existing internal site roads, to include passing bays and all associated drainage;
- Construction of temporary and permanent drainage and sediment control systems;
- Five onsite clear-span bridges;
- Installation of one permanent 100 m meteorological mast;
- Three temporary construction compounds with associated temporary site offices, parking areas and security fencing;
- Two temporary borrow pits and three deposition areas;
- Two GCO are included and assessed as part of the Proposed Project, however only one GCO would be constructed.:
    - The proposed GCO One (Figure 3-1) proposes to install a 110 kV underground cable connection from the Proposed Project to the consented Castlebanny Wind Farm 110 kV substation 12 km to the north. The proposed GCO One is 12 km in length and mainly follows the public road network adjacent to T10 travelling north along the local road L3417, crossing at the junction at Three Friars Cross (regional road R704), continuing north along the L3418, before travelling west over agricultural grassland and conifer plantation and terminating at the consented Castlebanny 110 kV substation; or,
    - GCO Two proposes to connect to the existing 110 kV Great Island-Kilkenny overhead line via a loop in connection 2.3 km east of the proposed onsite substation, and thus, all the proposed cabling and associated infrastructure will be located within the proposed wind farm site.

The construction of one permanent 110 kV electrical substation which includes:

  - 1 no. EirGrid Control Building containing, a Relay Room, Battery Room, Generator Room, Messroom, WC, and Workshop/ Store Room;
  - 1 no. Independent Power Producer (IPP) Control Building containing a Switchgear Room, Control Room, Office, Messroom, WC, Control Room, and Store Room;
  - Lightening Masts;
  - A Telecommunications mast;
  - Parking;
  - Security Palisade Fencing;
  - Electrical Plant and Infrastructure and Grid Ancillary Services Equipment;
  - Drainage Infrastructure;
  - All associated and ancillary works;
- Related site works and ancillary works including signage, berms, landscaping, and soil excavation;
- Forestry felling (both permanent and temporary) to facilitate construction and operation of the Proposed Project;
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm substation; and
- The TDR (Figure 3-1) which would include the trimming and/or removal of hedgerows and/or treelines at four private locations along the route. The proposed TDR follows the public road network from the Port of Waterford to the Proposed Project following the national road N29 (Port Road), the N25 (Waterford bypass), the M9 motorway to Mullinavat, County Kilkenny before exiting to the regional road R704 and then travelling south at the junction at Three Friars Cross along the local L3417.

A 35-year operational life from the date of full commissioning of the Proposed Project is being sought for all works (other than temporary and permanent works specified above), and the subsequent decommissioning. Permission is being sought for a period of 10 years. The full Proposed Project has been considered and has been addressed as part of this Screening for Appropriate Assessment.







Legend

- Wind Farm Study Area
- Turbine locations
- Turbine Delivery Route

Grid Connection Options

- Option 1
- Option 2

0 2.5 5
Kilometres

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	09/10/2025	First issue	S.P	A.M

Client: Manogate Ltd.

Project: Ballyfasy Wind Farm

Title: Figure 3-1
Proposed Project Extent

Scale @ A3: 1:125,000

Prepared by: S.Pezzetta
Checked by: A.Murphy
Date: October 2025

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Map Ref: 11474-001-P.App.BO-OSM-TOB-A

Draft: A

4. DESKTOP AND FIELD SURVEY RESULTS

Below outlines the results of the desktop study and ecological field surveys undertaken for the Proposed Project.

4.1 BIRDS

Desktop Results

A review of the NBDC database (NBDC, 2025) was conducted for the 10 km hectads S51, S52, S53, S61, S62 and S63 which encompass the Proposed Project. The NBDC website was reviewed in November 2025 for records of Annex I bird species. Only data which has been recorded within the last 10 years has been considered. The results are presented in Table 4-1.

Table 4-1 Annex I Birds Recorded by the NBDC for Hectads S51, S52, S53, S61, S62 and S63

Hectad	Species	Record Count	Date of Last Record
S51	Golden plover (*Pluvialis apricaria*)	8	25/09/2022
	Kingfisher (*Alcedo atthis*)	13	13/02/2023
	Little egret (*Egretta garzetta*)	15	01/03/2019
	Peregrine (*Falco peregrinus*)	3	13/08/2017
	Whooper swan (*Cygnus cygnus*)	5	23/03/2024
S52	Little egret (*Egretta garzetta*)	3	08/01/2018
S53	Golden plover (*Pluvialis apricaria*)	4	29/11/2016
	Little egret (*Egretta garzetta*)	7	02/02/2018
	Peregrine (*Falco peregrinus*)	11	15/03/2020
	Short-eared owl (*Asio flammeus*)	1	11/06/2021
S61	Golden plover (*Pluvialis apricaria*)	4	10/07/2020
	Hen harrier (*Circus cyaneus*)	5	18/10/2022
	Little egret (*Egretta garzetta*)	23	29/02/2024
	Peregrine (*Falco peregrinus*)	7	01/10/2020
	Sandwich tern (*Thalasseus sandvicensis*)	2	28/04/2023
	Whooper swan (*Cygnus cygnus*)	3	04/02/2019
S62	Bar-tailed godwit (*Limosa lapponica*)	1	10/07/2020

Hectad	Species	Record Count	Date of Last Record
	Little egret (*Egretta garzetta*)	6	19/07/2020
S63	Kingfisher (*Alcedo atthis*)	18	12/04/2024
	Little egret (*Egretta garzetta*)	8	29/05/2022
	Short-eared owl (*Asio flammeus*)	2	01/07/2014

Field Survey Results

As previously outlined in Section 2.2.2.1, a suite of bird surveys were undertaken over the period of May 2020 to March 2025 inclusive. In line with NatureScot (2017) guidance, VPS focused on 'target species'. These are species which are afforded a higher level of legislative protection, are of particular conservation concern, or are at particular risk from onshore wind developments. The ornithological survey results are discussed hereunder.

4.1.1 Vantage Point Surveys

A total of 267 flights by nine identified target species were recorded during the most recent two years of surveys between April 2023 and March 2025 (survey period including all three VP sites). The species recorded most frequently was lesser black-backed gull (*Larus fuscus*) with a total of 190 flights, followed by kestrel (*Falco tinnunculus*) (31 flights) and golden plover (*Pluvialis apricaria*) (14 flights). Flight activity was lower for all other target species. Peak flight activity occurred in the 2024 breeding season, with 110 flights by target species, whereas the lowest flight activity was recorded in the 2023 breeding season, with 49 flights. Lesser black-backed gull was recorded regularly in flight (flocks of one to 250 individuals), with birds landing to forage within open areas of the proposed wind farm site, with flight activity concentrated towards the north-east of the VP survey area. Kestrel was regularly recorded hunting within the survey area. This species appeared to favour the eastern, northern and central parts of the survey area. Eight kestrel flights were also recorded in the south-west during the 2023 breeding season.

A total of 14 golden plover flights were recorded near the centre of the survey area in the 2024-2025 non-breeding season. Most were recorded on 28th October 2024, in flocks of two to 26 individuals. Some of these were commuting flights and others involved birds circling and landing. As the other species were recorded in very low numbers, there was limited evidence of areas favoured by these species. Hen harrier (*Circus cyaneus*) was recorded seven times throughout the survey programme, with one observed hunting in the centre of the survey area in October 2023. Merlin (*Falco columbarius*) was recorded five times, with no observations of hunting behaviour.

During the previous seasons of VPS between the 2020 breeding season and the 2022-2023 non-breeding season, a total of 72 flights by five target species were recorded. The most frequently recorded species was buzzard (*Buteo buteo*), with 51 flights, followed by lesser black-backed gull, with 11 flights.

4.1.2 Breeding Bird Surveys

A total of 48 species were recorded during the programme of transect surveys (2020, 2023 and 2024). However, the majority of these species were passerines and in line with NatureScot (2017) guidance which states that passerines are not readily impacted by wind farms, these records have been omitted from the results.

Only three non-passerine breeding bird species were recorded during the survey programme: mallard (*Anas platyrhynchos*), lesser black-backed gull and buzzard.

It should be noted that no spatial data was collected during Breeding Bird Surveys and behavioural information was very limited. Lesser black-backed gull was recorded on four survey transects during 2023, with the largest record on a single transect being 16 birds. During 2024 surveys lesser black-backed gull was recorded during five survey transects, with 28 birds the largest record from a single transect.

Further lesser black-backed gulls were recorded incidentally during breeding season VPS, foraging in fields within the proposed wind farm site. Aggregations of up to 250 birds were recorded.

4.1.3 Wintering Bird Surveys

A total of 39 species were recorded during Wintering Bird Surveys (2020/2021, 2023/2024 and 2024/2025). However, the majority of these species were passerines and in line with NatureScot (2017) guidance, which states that passerines are not readily impacted by wind farms, these records have been omitted from the results.

Only two non-passerine species were recorded during the survey programme: lesser black-backed gull and buzzard. Lesser black-backed gull was recorded in small numbers during 2023/24 surveys, with a single record of six birds noted, while there were three records of birds recorded during 2024/25 surveys, again with a peak count of six birds.

It should be noted that no spatial data was collected during Wintering Bird Surveys and behavioural information was very limited.

Further lesser black-backed gulls were recorded, incidentally during winter season VPS, foraging in fields, within the proposed wind farm site. Aggregations of up to 80 birds were recorded.

4.1.4 Hinterland Surveys

No peregrine or hen harrier were recorded during the surveys. A total of four kestrel flights were recorded, however there was no evidence of breeding activity. Additional species recorded during hinterland surveys were mallard, black-headed gull, lesser black-backed gull and buzzard.

It should be caveated that limited behavioural information was noted during Hinterland Surveys and there was limited coverage of the wider survey area from the HVPs used. However, it is considered unlikely that any raptor species other than kestrel bred successfully and went undetected within 1 km of the proposed wind farm site given the lack of flight records.

4.1.5 Nocturnal Surveys

There were no records of any target species during the three nocturnal survey visits, and no nocturnal species were recorded during dawn and dusk VPS.

4.2 Otter

All streams and drainage ditches within the Proposed Project site were surveyed for the presence of otter (refer to Figure 2-2 and Figure 2-3). No holts, spraints, slides, couches or other evidence of otter activity was recorded within the Proposed Project. However, aquatic survey site 11 (Figure 2-2) adjacent to the Proposed Project and sites 13 to 16 along the proposed GCO One (Figure 2-3) were noted to have commuting and foraging potential for otter. Aquatic survey sites 3, 9 and 10 (downstream of the Proposed Project) (Figure 2-2) were also noted to have potential for otter.

A review of the NBDC data records indicated that otter have previously been recorded by the NBDC on the Smartscastle Stream_010 ca. 5 km downstream of the Proposed Project, on three occasions on the Blackwater (Kilmacow)_50 ca. 27 km downstream from the Proposed Project (Blackwater [Kilmacow]_010) and on the transitional waterbody Nore Estuary, which the Arrigle_010 River leads downstream to at an approximate hydrological distance of 30 km (NBDC, 2024).

NPWS data (NPWS, 2025b) illustrates the presence of otter habitat and freshwater commuting habitat primarily in the lower tributaries and main channels of the River Nore and River Suir, including their estuaries. However, otter freshwater commuting habitat was noted on the Arrigle_010 River ca. 2.8 km downstream of the boundary of the proposed wind farm site, and also within the Arrigle_020 River ca. 411 m downstream from the proposed GCO one crossing of the Arrigle_020. The otter habitat is present within the boundary of the River Barrow and River Nore SAC (NPWS, 2025b).

Considering the previous recordings of otter and the suitable habitat present, it is considered likely that otter use the connected streams and rivers that are hydrologically connected to the Proposed Project for foraging and commuting.

Otter is a QI of the downstream hydrologically connected Lower River Suir SAC and the River Barrow and River Nore SAC.

4.3 Marsh Fritillary

Marsh fritillary surveys were undertaken in suitable habitat (e.g., calcareous grasslands, fens, bogs and heath habitat) which is present adjacent to T3 at the area of wet grassland and wet heath. This area was thoroughly searched for the presence of the marsh fritillary host plant, devil's-bit scabious, and the plant searched for any presence of larvae and/or webs. Whilst devil's-bit scabious was occasionally found in this habitat, no marsh fritillary larvae, webs and/or individuals were recorded. Furthermore, there are no European sites present within the ZoI for which marsh fritillary is a QI species.

4.4 Fish and Aquatic Species

4.4.1 White-clawed Crayfish

White-clawed crayfish surveys were carried out at a total of six aquatic survey sites (2, 4, 7, 10, 11 and 12) deemed to have suitable habitat, within the study area of the Proposed Project. Whilst suitable habitat (i.e., soft riverbanks, boulders, rock and debris for shelter/cover) was recorded as present within the survey sites, white-clawed crayfish were not recorded at any site during trapping and hand searching surveys.

Whilst this species was not identified during field surveys, the desktop study (NBDC, 2025) identified its presence within the Smartscastle Stream_020 ca. 10km downstream from the Proposed Project (Smartscastle Stream_010).

White-clawed crayfish is a QI of the downstream hydrologically connected Lower River Suir SAC and the River Barrow and River Nore SAC.

4.4.2 Atlantic Salmon

It was determined from the aquatic surveys that suitable salmonid spawning habitat was present at aquatic site 4 (Arrigle_010), sites 8-10 (Smartscastle Stream_010) and site 11 (Blackwater [Kilmacow]_020) whereby heterogenous fluvial habitat ideal for spawning and early life stages of salmonids existed. These watercourses contained riffles, instream mix of cobble and gravel base with dappled shade from over hanging banks or riparian vegetation provide good salmonid nursery habitat.

Substrate siltation was noted however at some watercourses; aquatic sites 1-3 (Arrigle_010) and aquatic site 7 (Smartscastle Stream_010). These first order streams were heavily silted over a low gradient that flowed through forestry plantations and agricultural lands. Heavy siltation of these waterbodies can prevent or disrupt alevin emergence and reduce the fitness of the fry and parr.

The upper reaches of the Blackwater (Kilmacow)_020 River, Smartscastle Stream_010 and Arrigle_010 River within the Proposed Project are considered to be of poor quality for spawning and nursery habitat due to poor water quality, channel modification, siltation, unsuitable substrate and fluvial habitat.

A juvenile brown trout parr was recorded during kick sampling at aquatic site 5, which provided a good indication of spawning and nursery conditions in this watercourse. Brown trout were also visible swimming and jumping within the Arrigle_010 River.

Atlantic salmon is a QI of the downstream hydrologically connected Lower River Suir SAC and the River Barrow and River Nore SAC.

4.4.3 Lamprey Species

Aquatic surveys determined that the moderate flowing low gradient nature of watercourses in the study area of the Proposed Project provided suitable conditions for lamprey larvae, which require soft substrates into which they can burrow.

An area of 0.2 m^2 was surveyed for lamprey ammocetes in suitable sediment present along river edges at aquatic site 4 (Arrigle_010), aquatic sites 7 and 10 (Smartscastle Stream_010) and

aquatic site 11 (Blackwater [Kilmacow]_020). Two lamprey ammocoetes were recorded at aquatic site 4 (Arrigle_010) ca. 2.7 km downstream of the Proposed Project. The remaining sites did not contain lamprey ammocetes.

All species of lamprey are QI of the downstream hydrologically connected Lower River Suir SAC and River Barrow and River Nore SAC.

4.4.4 Freshwater Pearl Mussel

The FWPM is protected under Annex II and V of the EU Habitats Directive.

FWPM is acknowledged to be one of the most demanding species of high-water quality and high riverbed quality in the world (Atkinson *et al.*, 2023) and require fast flowing, well oxygenated, pristinely clean rivers with clean gravels and sand (Moorkens, 1999).

The Suir catchment and western extent of the Proposed Project (encompasses T1 to T3 and T8 to T10) is present within a FWPM sensitive area whereby there are previous records of FWPM, but the current status is unknown (NPWS, 2020). FWPM is a QI of the downstream hydrologically connected (ca. 17.9 km downstream) Lower River Suir SAC and River Barrow and River Nore SAC (ca. 406 m downstream from the closest point [proposed GCO one crossing of the Arrigle_020 River]).

A sensitive data request was sent to NPWS for any records of FWPM within and hydrologically connected to the Proposed Project. However, no FWPM was recorded (NPWS, 2025c).

The results of the FWPM surveys undertaken by Ecofact Environmental Consultants Ltd. are summarised hereunder. The full report can be found in Appendix A-I.

Nore_SC_140 sub-catchment

A small area (ca. 539.42 m^2) of the Proposed Project is present within the Nore_SC_140 sub-catchment. No watercourses from this sub-catchment are present within or adjacent to the Proposed Project. No records of FWPM have been recorded within this sub-catchment, and this species was confirmed absent during surveys of the Oaklands_010 River. Based on the survey results and the absence of any previous records from the Nore_SC_140 sub-catchment the presence of FWPM in the ZoI of the Nore_SC_140 sub-catchment has been ruled out.

Smartscastle Stream_010 and Blackwater (Kilmacow)_020 (Blackwater [Kilmacow]_SC_010 sub-catchment)

No suitable habitat for FWPM was recorded within the Smartscastle Stream_010 and Blackwater (Kilmacow)_020 Rivers. The watercourses are deemed to be too small with unsuitable gradient and water quality to support the species, and the catchment overall is highly modified. Based on the survey results and absence of any records from the Blackwater [Kilmacow]_SC_010 sub-catchment the presence of FWPM in the ZoI of the Smartscastle Stream_010 and Blackwater (Kilmacow)_020 Rivers is ruled out.

Arrigle_010 (Nore_SC_130 sub-catchment)

FWPM surveys conducted by Ecofact concluded no suitable habitat within the Arrigle_010 River, both within and downstream of the Proposed Project. Locations at the River Barrow and River Nore SAC boundary (refer to Figure 5-3) were also examined which concluded no presence of FWPM. Moorkens *et. al.,* 1992 reported no live mussels within the tributary of the

River Nore (this includes the Arrigle_010); the Arrigle_010 was included in the FWPM survey and the survey extended over 4 km of the river (which was estimated to be around 90 % of the suitable habitat in the river). Based on the current survey and absence of any records from the Nore_SC_130 sub-catchment the presence of FWPM in the ZoI of the Arrigle_010 and Nore_SC_130 is ruled out.

The FWPM surveys concluded the absence of the species within the sub-catchments and associated watercourses draining the proposed wind farm site and as such FWPM is not present within the ZoI of the Proposed Project. Furthermore, the FWPM catchments, habitats and distribution within the Lower River Suir SAC (Clodiagh catchment [NPWS, 2017]) and River Barrow and River Nore SAC (Ballymurphy, Mountain and Nore subcatchments [NPWS, 2025d]) do not have a hydrological connectivity and/or are upstream from the Proposed Project.

5. SCREENING FOR APPROPRIATE ASSESSMENT

5.1 IDENTIFICATION OF EUROPEAN SITES

The first step in the identification of European sites (including proposed and candidate sites) that could be affected by the Proposed Project is to determine the potential ZoI. When the ZoI of the development has been determined, European sites within this area can be identified and the potential for these sites to be affected can be evaluated by considering:

- Scale and type of the development;
- Proximity to the development;
- Qualifying interests; and
- Ecological[4] and Landscape[5] connectivity.

5.1.1 Determining the likely Zone of Influence

The source-pathway-receptor model (OPR, 2021) was used to identify the ZoI of the Proposed Project. This conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this model must be in place. In the context of the Proposed Project, the model comprises:

- Source(s) – potential impacts from the Proposed Project, e.g., loss of habitat, direct emissions (water, air, noise and light);
- Pathway(s) – hydrological, physical or ecological connectivity between the Proposed Project and the European site; (e.g. water bodies and proximity); and
- Receptor(s) – QIs and/or SCIs of the European sites.

The ZoI of the Proposed Project (in the absence of any mitigation measures) is described hereunder.

- The ZoI for habitat loss is confined to the Proposed Project site and specifically to habitats within the footprint of turbines and associated infrastructure (e.g., access roads, hardstanding, substation);
- The ZoI for water quality impacts are confined to waterbodies present within or downstream of the Proposed Project site and are not considered effective once the first waterbody of depositional nature is reached (i.e., lake water body; transitional water body). The ZoI for hydrological impacts for the Proposed Project is therefore defined as waterbodies within, adjacent to, or downstream of the Proposed Project until the Nore Estuary (Water Framework Directive [WFD] waterbody code: IE_SE_100_0400) and Middle Suir Estuary (IE_SE_100_0550) are reached;

[4] *'Connectivity is defined as a measure of the functional availability of the habitats needed for a particular species to move through a given area. Examples include the flight lines used by bats to travel between roosts and foraging areas or the corridors of appropriate habitat needed by some slow colonising species if they are to spread'* (CIEEM, 2018).

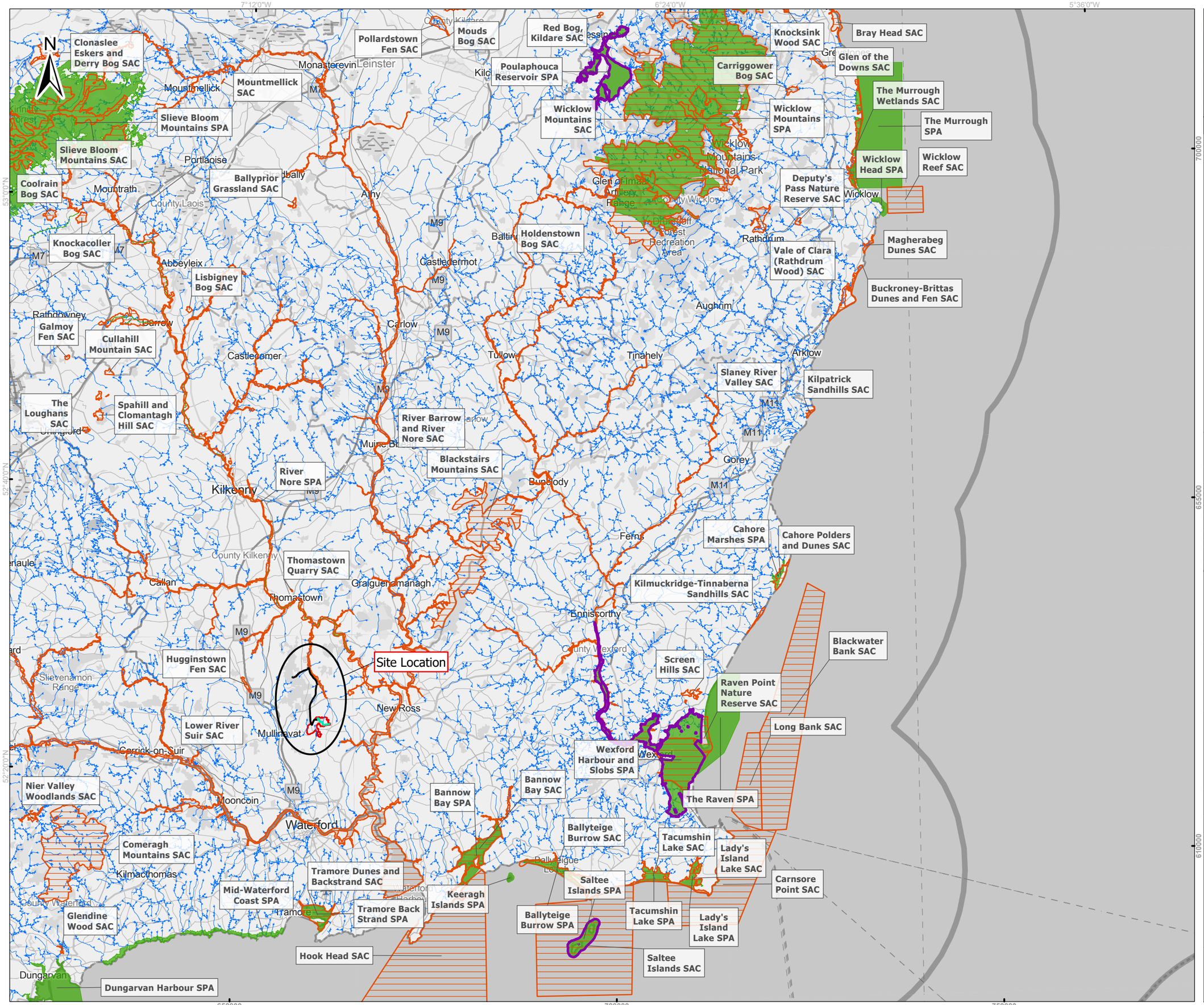
[5] *Landscape connectivity is a combined product of structural and functional connectivity, i.e., the effect of physical landscape structure and the actual species use of the landscape* (Kettunen *et al.* 2007)

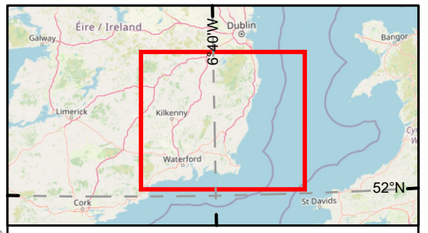
- The ZoI for groundwater impacts is confined to the same ground waterbody as the Proposed Project, which in this case is Inistioge (IE_SE_G_076) and Mullinavat (IE_SE_G_155);
- The ZoI for air quality (i.e., dust impacts) for the Proposed Project is defined to be within the spatial limit of 50 m to 250 m (IAQM, 2024). European sites are considered a 'high sensitivity receptor'. Therefore, the ZoI for dust impacts to vegetation is defined to be 50m surrounding all turbines and associated infrastructure (e.g., access roads and GCO's), areas of stockpiling, borrow pits and access roads utilised by machinery;
- The ZoI for disturbance to terrestrial mammals was defined with regard to the NRA guidance related to otter (NRA, 2008) which states that noise impacts from construction works can impact breeding otter holts within 150 m of a noise source (i.e., proposed infrastructure or construction activity);
- The ZoI for disturbance for avifauna varies for species (e.g., 200-300 m for hen harrier [Goodship & Furness, 2022]; 500 m for non-breeding golden plover [Goodship & Furness, 2022]). Furthermore, the core foraging ranges for species recorded during bird surveys has been considered when assessing potential impacts and whether the species are SCIs of an associated SPA (e.g., The mean-max foraging range for lesser black-backed gull is 236 km [Woodward *et al.,* 2019]).

As previously discussed in Section 2.2.2.4, four waterbodies are present within/adjacent to and drain from the Proposed Project; Blackwater (Kilmacow)_020 River, Smartscastle Stream_010 River, Arrigle_010 and Arrigle_020 River. All watercourses lead downstream to European sites, namely the Lower River Suir SAC (downstream connection from both the Blackwater [Kilmacow]_020 River and Smartscastle Stream_010), the River Barrow and River Nore SAC and the River Nore SPA (downstream connection from the Arrigle_010 and Arrigle_020 River).

Additional European sites with potential connectivity to the Proposed Project are the Wexford Harbour and Slobs SPA (004076), Saltee Islands SPA (004002), Poulaphouca Reservoir SPA (004063), Ballycotton Bay SPA (004022) and Cork Harbour SPA (004030). These European sites are designated for the SCI species lesser black-backed gull and are present within their mean-max foraging range of 236 km (Woodward *et al.,* 2019).

European sites with connectivity to the Proposed Project (utilising the source-pathway-receptor model) are illustrated in Figure 5-1 to Figure 5-3.





Legend

- Wind Farm Study Area

Grid Connection Options

- Option 1
- Option 2
- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)
- SPAs with bird species recorded during surveys
- Rivers

0 10 20
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	03/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 5-1:
European Sites Within the Source-Pathway-Receptor Zone of the Proposed Project (a)

Scale @ A3: 1:450,000

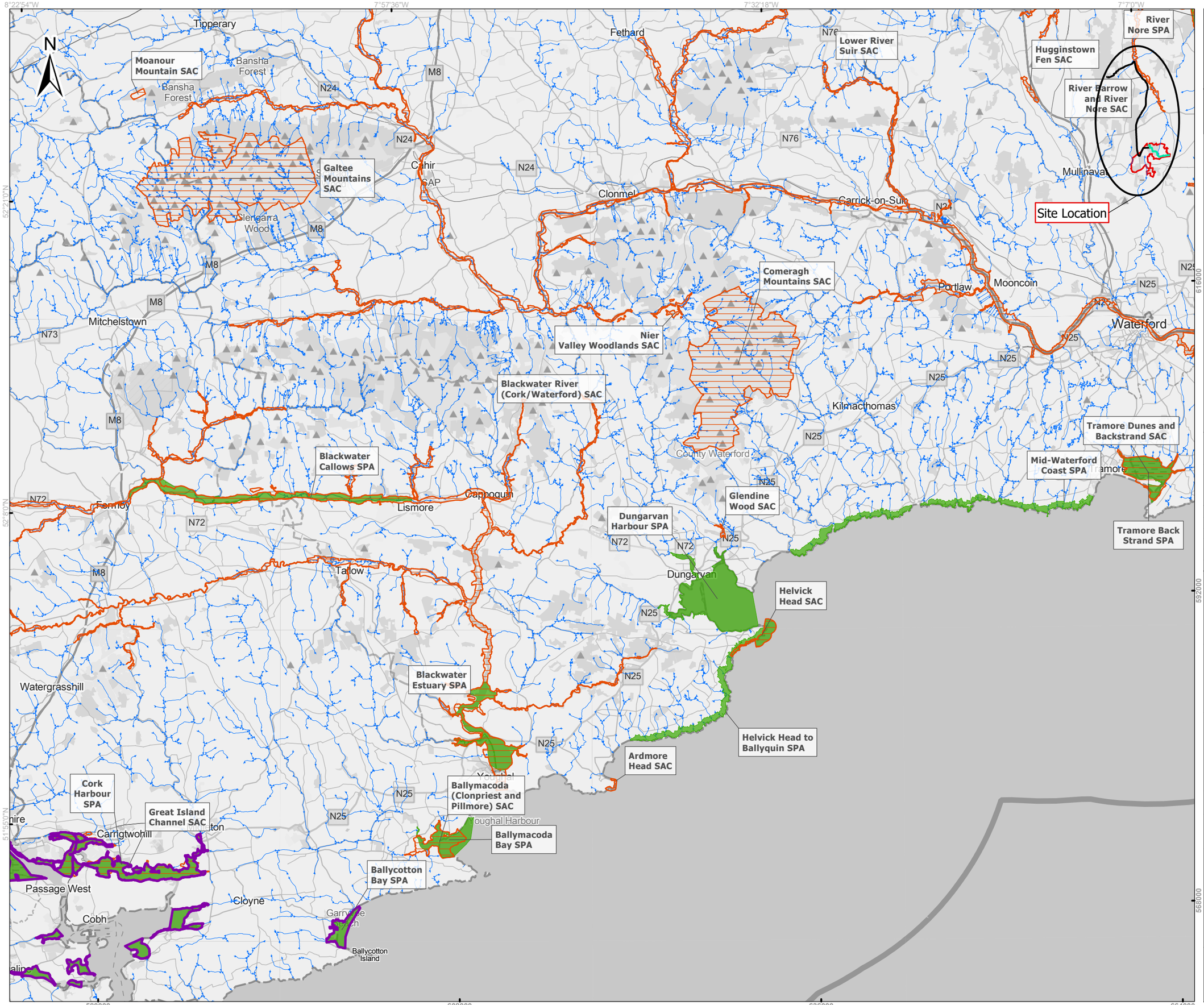
Prepared by: S.Pezzetta
Checked by: A.Murphy
Date: November 2025

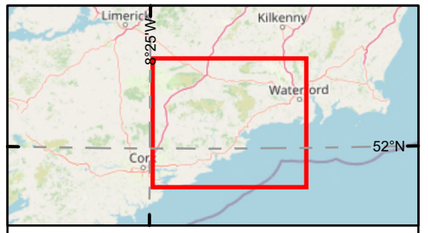
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Map Ref: 11474-001..AA-EU.S-ZOI-TOB-A

Draft: A





Legend

- Wind Farm Study Area
- Grid Connection Options
  - Option 1
  - Option 2
- Special Areas of Conservation (SACs)
- Special Protection Areas (SPAs)
- SPAs with bird species recorded during surveys
- Rivers

0 5 10
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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A	03/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 5-2:
European Sites Within the Source-Pathway-Receptor Zone of the Proposed Project (b)

Scale @ A3: 1:270,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

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Map Ref: 11474-002..AA-EU.S-ZOI-TOB-A

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7°8'6"W
7°4'48"W
52°2'648"N
52°2'516"N
633600
630400
659200
662400
N
Garrandarragh
River Barrow and River Nore SAC
ARRIGLE_020
ARRIGLE_010
BLACKWATER (KILMACOW)_010



Legend

- Wind Farm Study Area
- Turbine locations

Grid Connection Options

- Option 1
- Special Areas of Conservation (SACs)
- Rivers

0 250 500
Meters

Spatial Reference
Datum: IRENET95
EPSG: 2157

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A	03/11/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 5-3:
Location of the Proposed GCO One in Proximity to the River Barrow and River Nore SAC

Scale @ A3: 1:17,090

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	November 2025

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Map Ref: 11474-003..AA-EU.S-GCR-TOB-A

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5.2 DESCRIPTION OF EUROPEAN SITES

A summarised description of the European sites identified as being within the ZoI of the Proposed Project have been prepared using the supporting information available on the NPWS website (NPWS, 2025a).

River Barrow and River Nore SAC

This European site is hydrologically connected to the Proposed Project via the Arrigle_010 River at an approximate hydrological distance of ca. 2.7 km downstream and via the Arrigle_020 River at an approximate hydrological distance of ca. 406 m downstream of the GCO one crossing. The River Barrow and River Nore SAC '*consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford.*' (NPWS, 2025e).

The River Barrow and River Nore SAC is designated for 12 Annex I habitats and 10 Annex II species which are listed in Table 5-1.

Lower River Suir SAC

This European site is hydrologically connected to the Proposed Project via the Blackwater (Kilmacow)_020 River at an approximate hydrological distance of ca. 18 km downstream and via the Smartscastle Stream_010 River at an approximate hydrological distance of 13km downstream. The Lower River Suir SAC '*consists of the freshwater stretches of the River Suir immediately south of Thurles, the tidal stretches as far as the confluence with the Barrow/Nore…and many tributaries'* (NPWS, 2023).

The Lower River Suir SAC is designated for seven Annex I habitats and eight Annex II species which are listed in Table 5-1.

River Nore SPA

The River Nore SPA (004233) is located ca. 9 km northeast (as the crow flies) of the Proposed Project and is also hydrologically connected via the Arrigle_010 and Arrigle_020 River at an approximate hydrological downstream distance of ca. 14.6 km and ca. 7 km respectively. This SPA is designated for one SCI species, kingfisher (*Alcedo atthis*); a shy, reclusive bird that is a predominantly sedentary species associated with riparian habitat of streams, rivers, canals and drains (Snow and Perrins, 1998; Goodship and Furness 2022).

Wexford Harbour and Slobs SPA

The Wexford Harbour and Slobs SPA (004076) is located ca. 34 km east (as the crow flies) of the Proposed Project. The site is divided between the natural estuarine habitats of Wexford Harbour, the reclaimed polders known as the North and South 'Slobs', and the tidal section of the River Slaney (NPWS, 2014b). This SPA designated for 33 SCI species, including lesser black-backed gull, which are listed in Table 5-1.

Saltee Islands SPA

The Saltee Islands SPA (004002) is located ca. 42km southeast (as the crow flies) of the Proposed Project. The Saltee Islands SPA is situated some 4-5 km off the coast of south Co. Wexford and comprises the two islands, Great Saltee and Little Saltee, and the surrounding seas

both between them and to a distance of 500 m from them (NPWS, 2012a). This SPA is designated for ten SCI species, including lesser black-backed gull, which are listed in Table 5-1.

Poulaphouca Reservoir SPA

Poulaphouca Reservoir SPA (004063) is located ca. 81 km northeast (as the crow flies) of the Proposed Project. Poulaphouca Reservoir SPA, located in the western foothills of the Wicklow Mountains, was created in 1944 by damming of the River Liffey for the purpose of generating electricity from hydropower. The reservoir covers an area of ca. 20 km^2 and is the largest inland waterbody in the mideast and southeast regions (NPWS, 2014a). This SPA is designated for two SCI species, including lesser black-backed gull, which are listed in Table 5-1.

Ballycotton Bay SPA

Ballycotton Bay SPA (004022) is located ca. 83 km southwest (as the crow flies) of the Proposed Project. Situated on the south coast of County Cork, Ballycotton Bay is an east-facing coastal complex, which stretches northwards from Ballycotton to Ballynamona, a distance of ca. 2 km. The site comprises two sheltered inlets which receive the flows of several small rivers (NPWS, 2015a). This SPA is designated for 12 SCI species, including lesser black-backed gull, which are listed in Table 5-1.

Cork Harbour SPA

Cork Harbour SPA (004030) is located ca. 88 km southwest (as the crow flies) of the Proposed Project. Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour (NPWS, 2015b), which are listed in Table 5-1.

Table 5-1 Identification of European sites within the Zone of Influence of the Proposed Project

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
River Barrow and River Nore SAC [002162] (NPWS, 2025d)	• [1140] Mudflats and sandflats not covered by seawater at low tide (to maintain the Favourable conservation condition) • [1310] *Salicornia* and other annuals colonizing mud and sand (to maintain the Favourable conservation condition) • [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (to maintain the Favourable conservation condition) • [1130] Estuaries • [1170] Reefs (to maintain the Favourable conservation condition) • [1410] Mediterranean salt meadows (*Juncetalia maritimi*) • 3260 Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation (to maintain the Favourable conservation condition) • [4030] European dry heaths (to maintain the Favourable conservation condition) • [6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (to maintain the Favourable conservation condition) • [7220] * Petrifying springs with tufa formation (Cratoneurion) (to maintain the Favourable conservation condition)	**Physical:** None. The boundary of this European site does not overlap with and is not located adjacent to the Proposed Project. At the closest distance, this European site is located adjacent (ca. 1 m) from the proposed GCO one. Terrestrial habitats/species (e.g., Killarney fern, European dry heaths and old sessile oak woods) are present within the SAC boundary and have no source-pathway-receptor link identified from the Proposed Project. **Hydrological:** Hydrological connectivity via the Arrigle_010 River at an approximate hydrological downstream distance of ca. 2.7 km and from the proposed GCO one crossing of the Arrigle_020 River ca. 406 m downstream. In the absence of mitigation, the Proposed Project has the potential to result in the degradation of water quality of these hydrologically connected rivers during the construction and decommissioning phases of the Proposed Project. The SAC is designated for QIs which are sensitive to changes in water quality (e.g., FWPM, otter, hydrophilous tall herb fringe communities of plains and of the montane to alpine levels).The marine QIs (e.g., mudflats and	**Yes**

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (to restore the Favourable conservation condition) • [91E0] * Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) (to restore the Favourable conservation condition) • [1016] Desmoulin's whorl snail (*Vertigo moulinsiana*) (to maintain the Favourable conservation condition) • [1029] Freshwater pearl mussel (*Margaritifera margaritifera*) (to restore the Favourable conservation condition) • [1092] White-clawed crayfish (*Austropotamobius pallipes*) (to maintain the Favourable conservation condition) • [1095] Sea lamprey (*Petromyzon marinus*) (to restore the Favourable conservation condition) • [1096] Brook lamprey (*Lampetra planeri*) (to restore the Favourable conservation condition) • [1099] River lamprey (*Lampetra fluviatilis*) (to restore the Favourable conservation condition) • [1103] Twaite shad (*Alosa fallax*) (to restore the Favourable conservation condition) • [1106] Atlantic salmon (*Salmo salar*) (only in fresh water) (to restore the Favourable conservation condition) • [1355] Otter (*Lutra lutra*) (to restore the Favourable conservation condition)	sandflats and Atlantic salt meadows) are outside the ZoI as they are located beyond the depositional waterbody New Ross Port (IE_SE_100_0200). **Hydrogeological**: Alluvial forests, petrifying springs and Desmoulin's whorl snail are groundwater dependent terrestrial ecosystems (GWDTE) or species dependent on such. Excavation activities have the potential to impact upon groundwater quality. However, whilst these QIs are recorded within the same groundwaterbody (New Ross [IE_SE_G_152] and Inistioge [IE_SE_G_076]) as the Proposed Project, they are located at a significant distance (closest record of alluvial forest is ca. 8 km northeast and Desmoulin's whorl snail is ca. 25 km northeast). The ZoI for groundwater impacts from excavation activities is not considered greater than 200 m. **Ecological:** The Proposed Project occurs within the foraging/commuting range of QI species (e.g., otter commuting habitat is recorded within the Arrigle_010; Atlantic salmon; lamprey species).	

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• [1421] Killarney fern (*Trichomanes speciosum*) (to maintain the Favourable conservation condition)		
Lower River Suir SAC [002137] (NPWS, 2017)	• [1330] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (to restore the Favourable conservation condition) • [3260] Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation (to restore the Favourable conservation condition) • [6430] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (to maintain the Favourable conservation condition) • [91A0] Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles (to restore the Favourable conservation condition) • [91E0] Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (Alno-Padion, Alnion incanae, Salicion albae) (to restore the Favourable conservation condition) • [91J0] *Taxus baccata* woods of the British Isles* (to restore the Favourable conservation condition) • [1029] Freshwater pearl mussel (*Margaritifera margaritifera*) (to restore the Favourable conservation condition) • [1092] White-clawed crayfish *Austropotamobius pallipes)* (to maintain the Favourable conservation condition) • [1095] Sea lamprey (*Petromyzon marinus*) (to restore the Favourable conservation condition)	**Physical:** None. The boundary of this European site does not overlap with and is not located adjacent to the Proposed Project. At the closest distance, this European site is located ca. 10 km southwest (as the crow flies). Terrestrial habitats/species (e.g., old sessile oak woods and *taxus baccata* woods) are present within the SAC boundary and have no source-pathway-receptor link identified from the Proposed Project. **Hydrological:** Hydrological connectivity via the Blackwater (Kilmacow)_020 River (ca. 18 km downstream) and the Smartscastle Stream_010 River (ca. 13 km downstream). In the absence of mitigation, the Proposed Project has the potential to result in the degradation of water quality of these hydrologically connected rivers during the construction and decommissioning phases of the Proposed Project. The SAC is designated for QIs which are sensitive to changes in water quality (e.g., FWPM, otter and hydrophilous tall herb fringe communities of plains and of the montane to alpine levels). The marine QI Atlantic salt meadows are	**Yes**

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• [1096] Brook lamprey (*Lampetra planeri)* (to restore the Favourable conservation condition) • [1099] River lamprey (*Lampetra fluviatilis*) (to restore the Favourable conservation condition) • [1103] Twaite shad (*Alosa fallax fallax*) (to restore the Favourable conservation condition) • [1106] Atlantic Salmon (*Salmo salar*) (to restore the Favourable conservation condition) • [1355] Otter (*Lutra lutra*) (to maintain the Favourable conservation condition)	outside the ZoI as they are located within a waterbody (Lower Suir Estuary [IE_SE_100_0500]) of depositional nature. **Hydrogeological**: Alluvial forests are GWDTE. Excavation activities have the potential to impact upon groundwater quality. However, this QI is not located within the same groundwaterbody as the Proposed Project. **Ecological:** The Proposed Project occurs within the foraging/commuting range of QI species (e.g., otter, Atlantic salmon and lamprey species).	
River Nore SPA [004233] (NPWS, 2024a)	• Kingfisher (*Alcedo atthis*) [A229] (to maintain the Favourable conservation condition)	**Physical:** None. The boundary of this European site does not overlap with and is not located adjacent to the Proposed Project. **Hydrological:** Hydrological connectivity via the Arrigle_010 and Arrigle_020 River at an approximate hydrological downstream distance of ca. 14 km and 7 km respectively. In the absence of mitigation, the Proposed Project has the potential to result in the degradation of water quality of these hydrologically connected rivers during the construction and decommissioning phases of the Proposed Project. A degradation of water quality could	Yes

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
		negatively impact upon feeding resources for kingfisher. **Ecological:** Kingfisher are very territorial species which nest in banks along rivers (Snow and Perrins, 1998; Goodship and Furness 2022). Considering the territorial nature of the species, they are unlikely to occur outside the boundaries of the SPA and therefore are unlikely to occur within proximity to the Proposed Project. This species was not recorded during bird surveys from the period May 2020 and March 2025 (inclusive).	
Wexford Harbour and Slobs SPA [004076] (NPWS, 2012b)	• Little grebe (*Tachybaptus ruficollis*) [A004] (to maintain the Favourable conservation condition) • Great crested grebe (*Podiceps cristatus*) [A005] (to maintain the Favourable conservation condition) • Cormorant (*Phalacrocorax carbo*) [A017] (to maintain the Favourable conservation condition) • Grey heron (*Ardea cinerea*) [A028] (to maintain the Favourable conservation condition) • Bewick's swan (*Cygnus columbianus bewickii*) [A037] (to maintain the Favourable conservation condition) • Whooper swan (*Cygnus cygnus*) [A038] (to maintain the Favourable conservation condition) • Light-bellied brent goose (*Branta bernicla hrota*) [A046] (to maintain the Favourable conservation condition)	**Physical:** None. This SPA is located ca. 34 km east of the Proposed Project The boundary of this European site does not overlap or is not located adjacent to the Proposed Project. **Hydrological:** None. There is no hydrological pathway to this European site. **Ecological:** During bird surveys conducted over the period May 2020 and March 2025 (inclusive) lesser black-backed gull, hen harrier and golden plover were recorded. However, the core foraging range for hen harrier is 2 km (maximum 10 km) and golden plover is 3 km (maximum 11 km) (SNH, 2016). For this reason, both hen harrier and golden plover	**Yes**

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• Shelduck (*Tadorna tadorna*) [A048] (to maintain the Favourable conservation condition) • Teal (*Anas crecca*) [A052] (to maintain the Favourable conservation condition) • Mallard (*Anas platyrhynchos*) [A053] (to maintain the Favourable conservation condition) • Pintail (*Anas acuta*) [A054] (to maintain the Favourable conservation condition) • Scaup (*Aythya marila*) [A062] (to maintain the Favourable conservation condition) • Goldeneye (*Bucephala clangula*) [A067] (to maintain the Favourable conservation condition) • Red-breasted merganser (*Mergus serrator*) [A069] (to maintain the Favourable conservation condition) • Hen harrier (*Circus cyaneus*) [A082] (to maintain the Favourable conservation condition) • Coot (*Fulica atra*) [A125] (to maintain the Favourable conservation condition) • Oystercatcher (*Haematopus ostralegus*) [A130] (to maintain the Favourable conservation condition) • Golden plover (*Pluvialis apricaria*) [A140] (to maintain the Favourable conservation condition) • Grey plover (*Pluvialis squatarola*) [A141] (to maintain the Favourable conservation condition) • Lapwing (*Vanellus vanellus*) [A142] (to maintain the Favourable conservation condition)	which were recorded during surveys are not considered to be part of the SCI population of this SPA. However, the mean-maximum foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore, utilising the precautionary approach, sightings of this species within the proposed wind farm site may be part of the SCI population of this SPA.	

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• Knot (*Calidris canutus*) [A143] (to maintain the Favourable conservation condition) • Sanderling (*Calidris alba*) [A144] (to maintain the Favourable conservation condition) • Dunlin (*Calidris alpina*) [A149] (to maintain the Favourable conservation condition) • Black-tailed godwit (*Limosa limosa*) [A156] (to maintain the Favourable conservation condition) • Bar-tailed godwit (*Limosa lapponica*) [A157] (to maintain the Favourable conservation condition) • Curlew (*Numenius arquata*) [A160] (to maintain the Favourable conservation condition) • Redshank (*Tringa totanus*) [A162] (to maintain the Favourable conservation condition) • Black-headed gull (*Chroicocephalus ridibundus*) [A179] (to maintain the Favourable conservation condition) • Lesser Black-backed gull (*Larus fuscus*) [A183] (to maintain the Favourable conservation condition) • Greenland white-fronted goose (*Anser albifrons flavirostris*) [A395] (to maintain the Favourable conservation condition) • Wigeon (*Mareca penelope*) [A855] (to maintain the Favourable conservation condition) • Little tern (*Sternula albifrons*) [A885] (to maintain the Favourable conservation condition)		

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• Wetland and waterbirds [A999] (to maintain the Favourable conservation condition)		
Saltee Islands SPA [004002] (NPWS, 2011)	• Fulmar (*Fulmarus glacialis*) [A009] (to maintain the Favourable conservation condition) • Gannet (*Morus bassanus*) [A016] (to maintain the Favourable conservation condition) • Cormorant (*Phalacrocorax carbo*) [A017] (to maintain the Favourable conservation condition) • Shag (*Phalacrocorax aristotelis*) [A018] (to maintain the Favourable conservation condition) • Lesser black-backed gull (*Larus fuscus*) [A183] (to maintain the Favourable conservation condition) • Herring gull (*Larus argentatus*) [A184] (to maintain the Favourable conservation condition) • Kittiwake (*Rissa tridactyla*) [A188] (to maintain the Favourable conservation condition) • Guillemot (*Uria aalge*) [A199] (to maintain the Favourable conservation condition) • Razorbill (*Alca torda*) [A200] (to maintain the Favourable conservation condition) • Puffin (*Fratercula arctica*) [A204] (to maintain the Favourable conservation condition)	**Physical:** None. This SPA is located ca. 42 km southeast of the Proposed Project. The boundary of this European site does not overlap with and is not located adjacent to the Proposed Project. **Hydrological:** None. There is no hydrological pathway to this European site. **Ecological:** During bird surveys conducted over the period May 2020 and March 2025 (inclusive) the only SCI species of this SPA that was recorded was lesser black-backed gull. The mean-maximum foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore, utilising the precautionary approach, sightings of this species within the proposed wind farm site may be part of the SCI population of this SPA.	**Yes**
Poulaphouca Reservoir SPA [004063] (NPWS, 2024b)	• Greylag goose (*Anser anser*) [A043] (to maintain the Favourable conservation condition) • Lesser black-backed gull (*Larus fuscus*) [A183] (to maintain the Favourable conservation condition)	**Physical:** None. This SPA is located ca. 81 km northeast of the Proposed Project The boundary of this European site does not overlap or is	**Yes**

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
		not located adjacent to the Proposed Project. **Hydrological:** None. There is no hydrological pathway to this European site. **Ecological:** During bird surveys conducted over the period May 2020 and March 2025 (inclusive) the only SCI species of this SPA that was recorded was that of the lesser black-backed gull. The mean-maximum foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore, utilising the precautionary approach, sightings of this species within the proposed wind farm site may be part of the SCI population of this SPA.	
Ballycotton Bay SPA [004022] (NPWS, 2014c)	• Teal (*Anas crecca*) [A052] (to maintain the Favourable conservation condition) • Ringed plover (*Charadrius hiaticula*) [A137] (to maintain the Favourable conservation condition) • Golden plover (*Pluvialis apricaria*) [A140] (to maintain the Favourable conservation condition) • Grey plover (*Pluvialis squatarola*) [A141] (to maintain the Favourable conservation condition) • Lapwing (*Vanellus vanellus*) [A142] (to maintain the Favourable conservation condition)	**Physical:** None. This SPA is located ca. 83 km southwest of the Proposed Project. The boundary of this European site does not overlap or is not located adjacent to the Proposed Project. **Hydrological:** None. There is no hydrological pathway to this European site. **Ecological:** During bird surveys conducted over the period May 2020 and March 2025 (inclusive) lesser black-backed gull and golden plover	**Yes**

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• Black-tailed godwit (*Limosa limosa*) [A156] (to maintain the Favourable conservation condition) • Bar-tailed godwit (*Limosa lapponica*) [A157] (to maintain the Favourable conservation condition) • Curlew (*Numenius arquata*) [A160] (to maintain the Favourable conservation condition) • Turnstone (*Arenaria interpres*) [A169] (to maintain the Favourable conservation condition) • Common gull (*Larus canus*) [A182] (to maintain the Favourable conservation condition) • Lesser black-backed gull (*Larus fuscus*) [A183] (to maintain the Favourable conservation condition) • Wetland and waterbirds [A999] (to maintain the Favourable conservation condition)	were recorded. However, the core foraging range for golden plover is 3 km (maximum 11 km) (SNH, 2016). For this reason, golden plover which were recorded during surveys are not considered to be part of the SCI population of this SPA. However, the mean-maximum foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore, utilising the precautionary approach, sightings of this species within the proposed wind farm site may be part of the SCI population of this SPA.	
Cork Harbour SPA [004030] (NPWS, 2014d)	• Little grebe (*Tachybaptus ruficollis*) [A004] (to maintain the Favourable conservation condition) • Great crested grebe (*Podiceps cristatus*) [A005] (to maintain the Favourable conservation condition) • Cormorant (*Phalacrocorax carbo*) [A017] (to maintain the Favourable conservation condition) • Grey heron (*Ardea cinerea*) [A028] (to maintain the Favourable conservation condition) • Shelduck (*Tadorna tadorna*) [A048] (to maintain the Favourable conservation condition) • Teal (*Anas crecca*) [A052] (to maintain the Favourable conservation condition)	**Physical:** None. This SPA is located ca. 88 km southwest of the Proposed Project. The boundary of this European site does not overlap or is not located adjacent to the Proposed Project. **Hydrological:** None. There is no hydrological pathway to this European site. **Ecological:** During bird surveys conducted over the period May 2020 and March 2025 (inclusive) lesser black-backed gull and golden plover were recorded. However, the core foraging range for golden plover is 3	**Yes**

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• Pintail (*Anas acuta*) [A054] (to maintain the Favourable conservation condition) • Red-breasted merganser (*Mergus serrator*) [A069] (to maintain the Favourable conservation condition) • Oystercatcher (*Haematopus ostralegus*) [A130] (to maintain the Favourable conservation condition) • Golden plover (*Pluvialis apricaria*) [A140] (to maintain the Favourable conservation condition) • Grey plover (*Pluvialis squatarola*) [A141] (to maintain the Favourable conservation condition) • Lapwing (*Vanellus vanellus*) [A142] (to maintain the Favourable conservation condition) • Dunlin (*Calidris alpina*) [A149] (to maintain the Favourable conservation condition) • Black-tailed godwit (*Limosa limosa*) [A156] (to maintain the Favourable conservation condition) • Bar-tailed godwit (*Limosa lapponica*) [A157] (to maintain the Favourable conservation condition) • Curlew (*Numenius arquata*) [A160] (to maintain the Favourable conservation condition) • Redshank (*Tringa totanus*) [A162] (to maintain the Favourable conservation condition) • Black-headed gull (*Chroicocephalus ridibundus*) [A179] (to maintain the Favourable conservation condition) • Common gull (*Larus canus*) [A182] (to maintain the Favourable conservation condition)	km (maximum 11 km) (SNH, 2016). For this reason, golden plover which were recorded during surveys are not considered to be part of the SCI population of this SPA. However. the mean-maximum foraging range for lesser black-backed gull is 236 km (Woodward *et al.,* 2019) and therefore, utilising the precautionary approach, sightings of this species within the proposed wind farm site may be part of the SCI population of this SPA.	

European Sites	Qualifying Interest/Special Conservation Interest *(* denotes priority habitat)* and Conservation Objective	Connectivity	Within ZoI
	• Lesser black-backed gull (*Larus fuscus*) [A183] (to maintain the Favourable conservation condition) • Common tern (*Sterna hirundo*) [A193] (to maintain the Favourable conservation condition) • Wigeon (*Mareca penelope*) [A855] (to maintain the Favourable conservation condition) • Shoveler (*Spatula clypeata*) [A857] (to maintain the Favourable conservation condition) • Wetland and waterbirds [A999] (to maintain the Favourable conservation condition)		

6. IDENTIFICATION OF POTENTIAL IMPACTS ON EUROPEAN SITES

An overview of potential impacts as a result of the construction, operational and decommissioning phases of the Proposed Project on the receiving environment is discussed hereunder. The likelihood of impacts occurring because of the Proposed Project is established in light of the type and scale of the project, the location of the project with respect to European sites within the ZoI and the QIs/SCIs and conservation objectives of those European sites.

There are several elements associated with the works, that may give rise to direct and indirect impacts on the receiving environment that have the potential to result in likely significant effects on European sites within the ZoI.

6.1 POTENTIAL IMPACTS AND EFFECTS

The potential impacts and effects associated with all phases (i.e., construction, operational and decommissioning) of the Proposed Project on the previously discussed European sites in the ZoI are discussed herein.

In summary, the potential impacts as a result of the Proposed Project consists of:

- Habitat loss (permanent and temporary);
- Habitat degradation due to water quality impacts;
- Habitat degradation due to dust deposition;
- Habitat degradation due to hydrogeological impacts;
- Disturbance (noise and lighting); and
- Collison risk.

River Barrow and River Nore SAC

As previously stated, a hydrological connection from the Proposed Project to this SAC is present via the Arrigle_010 and Arrigle_020 River. The Arrigle_010 is crossed by three clear-span bridges at T5 and T6, and an unmapped tributary of the Arrigle_010 southwest of T6. The Arrigle_010 also runs adjacent to the access road near T6.

The proposed GCO One crosses the Arrigle_010 (including unmapped waterbodies/tributaries leading downstream to this) at two locations and crosses the Arrigle_020 (including unmapped waterbodies/tributaries leading downstream to this) at four locations. All cable water crossings have been designed in the project to be undertaken via horizontal directional drilling (HDD). The proposed GCO One also runs adjacent to the River Barrow and River Nore SAC at a distance of ca. 1m, where the cable will be installed within an existing unnamed road.

The GCO Two cable will be HDD under an unmapped tributary of the Arrigle_010 southwest of T6.

There is potential for surface water runoff to enter these waterbodies and lead to the degradation of water quality. Site clearance, excavation activities, and the stockpiling of material have the potential to result in sediment laden run-off, if not appropriately managed. Additionally, pollution laden runoff (i.e., chemicals, hydrocarbons associated with the construction and decommissioning phase) can also lead to the degradation of water quality. Furthermore, increased dust as a result of construction phase activities (e.g., excavation, site clearance and movement of machinery) could lead to the deposition of dust particles creating a film on waterbodies, especially those with little to no flow.

Such deterioration of water quality could lead to effects on aquatic and semi-aquatic species (e.g., Atlantic salmon and otter) through a reduction in dissolved oxygen in the water column, increased turbidity and reduction of prey availability/effects to the food chain and, in worst case scenarios, fish mortality (Chanin, 2003; IFI, 2016).

The River Barrow and River Nore SAC is present within the ZoI for air quality/dust impacts and is defined as a 'High' sensitivity ecological receptor with the greatest impact from demolition and earth works (IAQM, 2024)

Disturbance impacts, primarily for otter, are likely as a result of increased noise and human presence during the construction and decommissioning phases. Disturbance impacts to otter are no greater than 150 m (NRA, 2008), however given the presence of the Arrigle_010 and Arrigle_020 River within the Proposed Project, there is potential for otter to utilise these stretches of river, in addition to drainage ditches, for foraging and commuting. Whilst otter are crepuscular, sightings in daytime hours are possible. Any works occurring during twilight hours, including the use of temporary lighting, will increase the potential for disturbance impacts to otter. However, no otter holts were identified and potential impacts are for foraging/commuting otter only.

Lower River Suir SAC

As previously stated, a hydrological connection from the Proposed Project to this SAC is present via the Blackwater (Kilmacow)_020 River and Smartscastle Stream_010 River. The Smartscastle Stream_010 River is crossed by a clear-span bridge at T9 and an unmapped tributary of this waterbody is crossed by a clear-span bridge at T8.

Water quality, dust deposition and disturbance impacts which were discussed above for the River Barrow and River Nore SAC are also applicable to the Lower River Suir SAC.

River Nore SPA

As previously stated, there is a hydrological connection from the Proposed Project to this SPA via the Arrigle_010 and Arrilge_020 River. The Arrigle_010 is crossed by three clear-span bridges at T5, T6 and at an unmapped tributary of the Arrigle_010 southwest of T6. The Arrigle_010 also runs adjacent to the access road near T6. The proposed GCO One crosses the Arrigle_010 (including unmapped waterbodies/tributaries leading downstream to this) at two locations and crosses the Arrigle_020 (including unmapped waterbodies/tributaries leading downstream to this) at four locations. All waterbodies lead downstream to the River Nore SPA.

There is potential for the degradation of water quality to impede upon feeding resources of kingfisher, the SCI species of this SPA.

Wexford Harbour and Slobs SPA

This European site is located at a significant distance (ca. 34 km east) from the Proposed Project with no hydrological connectivity identified. However, lesser black-backed gull, which was frequently recorded during bird surveys, is an SCI species of Wexford Harbour and Slobs SPA. Due to this species' very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull have the potential to be part of the Wexford Harbour and Slobs SPA population. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

Saltee Islands SPA

This European site is located at a significant distance (ca. 42km southeast) from the Proposed Project with no hydrological connectivity identified. However, lesser black-backed gull, which was frequently recorded during bird surveys, is an SCI species of the Saltee Islands SPA. Due to this species' very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull have the potential to be part of the Saltee Islands SPA population. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

Poulaphouca Reservoir SPA

This European site is located at a significant distance (ca. 81 km northeast) from the Proposed Project with no hydrological connectivity identified. However, lesser black-backed gull, which was frequently recorded during bird surveys, is an SCI species of the Poulaphouca Reservoir SPA. Due to this species' very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull have the potential to be part of the Poulaphouca Reservoir SPA population. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

Ballycotton Bay SPA

This European site is located at a significant distance (ca. 83 km southwest) from the Proposed Project with no hydrological connectivity identified. However, lesser black-backed gull, which was frequently recorded during bird surveys, is an SCI species of Ballycotton Bay SPA. Due to this species' very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull have the potential to be part of the Ballycotton Bay SPA population. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

Cork Harbour SPA

This European site is located at a significant distance (ca. 88 km southwest) from the Proposed Project with no hydrological connectivity identified. However, lesser black-backed gull, which was frequently recorded during bird surveys, is an SCI species of Cork Harbour SPA. Due to this species' very large foraging range of 236 km (Woodward *et al.*, 2019) and its repeated presence within the proposed wind farm site during the survey period, and utilising the precautionary approach, lesser black-backed gull have the potential to be part of the Cork Harbour SPA population. For this reason, there is potential for this species to be impacted by noise disturbances and collision risk with turbines.

7. ASSESSMENT OF SIGNIFICANCE

Potential likely significant effects via a hydrological pathway have been identified between the Proposed Project and the River Barrow and River Nore SAC, the Lower River Suir SAC and the River Nore SPA and via the use of the proposed wind farm site by SCI species of the Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA (Section 5.1 and 6.1). The Proposed Project has the potential to give rise to water quality impacts, disturbance impacts and collision risk during the construction, operational and/or decommissioning phases.

Whilst the Annex I habitats for which the River Barrow and River Nore SAC and the Lower River Suir SAC are designated would not be impacted by the Proposed Project (i.e., the Proposed Project is not present within the boundary of the SACs or any European site and with no source-pathway-receptor link identified), in the absence of mitigation, there is potential for likely significant effects on Annex II aquatic and semi-aquatic species and Annex I habitats (i.e., FWPM, white-clawed crayfish, lamprey (sea, brook, river) species, Atlantic salmon, twaite shad, otter, hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation). The results of the desktop study and ecological field surveys are discussed in Section 4 which determined the likely presence of the aforementioned aquatic and semi-aquatic species within the ZoI of the Proposed Project. Similarly, whilst direct effects on the River Nore SPA as a result of the Proposed Project will not arise, in the absence of mitigation, there is potential for likely significant effects on the SCI species (i.e., kingfisher) due to potential water quality impacts. Furthermore, direct effects on the Wexford Harbour and Slobs SPA, Saltee Islands SPA Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA will also not arise, however, in the absence of mitigation, there is potential for direct and indirect disturbance effects and collision risk to SCI species, namely lesser black-backed gull.

7.1 IN-COMBINATION EFFECTS

A study area was identified for other developments for the purpose of the cumulative assessment. This was set at a 10 km radius from the proposed wind farm site, within which 'other development' is either in situ or has planning permission (a full list of these developments is provided in Appendix A-III). These other developments included searches for any renewable energy developments, electrical and water services, roadworks, industrial, residential and any other large developments.

To conduct the in-combination impact assessment, the online planning registers for Kilkenny City and County Council as well as An Coimisiún Pleanála were used. Relevant NIS and EIAR (or historical EIS) documents, planning application details and planning drawings within the study area of the Proposed Project were reviewed to identify past and future projects, their activities and their environmental impacts.

7.1.1 Projects

Castlebanny Wind Farm (An Coimisiún Pleanála Reference: PA10.309306)

Springfield Renewables Limited (Ltd.) applied for planning for the construction of a wind farm at Castlebanny, County Kilkenny located ca. 2 km north of the Proposed Project (this development was consented but is currently in the judicial review process).

A Screening for Appropriate Assessment and NIS were prepared (Blackthorn Ecology, 2021). The NIS identified the potential for adverse effects on the River Barrow and River Nore SAC, Lower River Suir SAC, River Nore SPA and Saltee Islands SPA. The NIS details a range of mitigation measures to ensure adverse effects to European sites do not arise. The NIS concluded that '*The NIS contains information which the Board, as competent authority, may consider in making its own complete, precise and definitive findings and conclusions and upon which the Board is capable of determining that all reasonable scientific doubt has been removed as to the effects of the Proposed Project on the integrity of the relevant Natura 2000 sites. In light of the conclusions of the assessment which it shall conduct on the implications for the European sites concerned, the Board is enabled to ascertain that the Proposed Project will not adversely affect the integrity of any of the European sites concerned'* (Blackthorn Ecology, 2021). The Proposed Project has identified potential impacts to the same European sites. In the absence of mitigation, there is potential for in-combination effects with the proposed Castlebanny Wind Farm.

Ballymartin Wind Farm (An Coimisiún Pleanála Reference: PL10.208178)

Ballymartin Wind Farm is fully operational and is located adjacent to the proposed wind farm site. The initial Environmental Impact Statement (EIS) was completed in 2003 and noted that the site was not present within an ecological designation. The report notes the presence of golden plover and hen harrier, but with unsuitable breeding habitat present. An AA Screening/NIS was provided to Kilkenny County Council as part of the planning application for this project and was therefore subject to statutory planning requirements in relation to the protection of European sites. As this project was granted planning permission, it can be concluded that no direct or indirect impacts that could adversely affect the integrity of any European site were identified. In the absence of mitigation, there is potential for in-combination effects with the existing Ballymartin Wind Farm.

Smithstown Wind Farm (Kilkenny County Council: 07/2141)

Smithstown Wind Farm is fully operational and is located adjacent to the proposed wind farm site. The EIS was submitted in 2007, which assessed impacts to protected bird and fauna species in addition to water quality impacts and habitat loss. Significant effects were not concluded and minimal mitigation measures suggested (e.g., turbine siting to reduce bird collisions and offsite washing of concrete and vehicles). An AA Screening/NIS was provided to Kilkenny County Council as part of the planning application for this project and was therefore subject to statutory planning requirements in relation to the protection of European sites. As this project was granted planning permission, it can be concluded that no direct or indirect impacts that could adversely affect the integrity of any European site were identified. In the absence of mitigation, there is potential for in-combination effects with the existing Smithstown Wind Farm.

Rahora Wind Farm (An Coimisiún Pleanála Reference: PL10.206373)

An application was made in 2003 by Ecopower Developments Ltd. (Kilkenny County Council planning reference 03/1117 [refused but overturned by An Coimisiún Pleanála]) for the development of a wind farm in the townlands of Rahor, Ballallog, Guillkagh More, Brownstown, County Kilkenny. Rahora Wind Farm is fully operational and is located ca. 2 km northeast of the proposed wind farm site. An EIS was submitted in 2003 and concluded the absence of Annex protected mammals and habitats but noted the presence of the Annex I protected bird species golden plover. No significant effects were concluded as a result of Rahora Wind Farm. Given the close proximity (ca. 2 km) to the Proposed Project and in the absence of mitigation, there is potential for in-combination effects with the existing Rahora Wind Farm.

Beallough Wind Farm (An Coimisiún Pleanála Reference: PL93.245176)

Beallough Wind Farm is fully operational and is located ca. 18 km southwest from the Proposed Project. Beallough Wind Farm consists of two turbines and thus is of a small scale and is located at a significant distance (ca. 18 km as the crow flies) and within a different catchment to the Proposed Project. For these reasons, in-combination effects are not expected to occur with the Proposed Project.

Ballyhale Flood Relief Scheme (An Coimisiún Pleanála Reference: JA10.317082)

An application was made by Kilkenny County Council in 2023 for a flood relief scheme (FRS) in Ballyhale, County Kilkenny ca. 11 km northwest of the Proposed Project. This project is present within the same subcatchment (Nore_SC_130) to that of the Proposed Project and leads downstream to the River Barrow and River Nore SAC. A Screening for Appropriate Assessment and NIS were prepared by Altemar Ltd. (Altemar, 2022). This NIS concludes: '*Following the implementation of the mitigation measures outlined, the proposed works would not be deemed to have a significant impact. No significant negative impacts are likely on Natura 2000 sites, alone in combination with other plans and projects based on the implementation of standard construction phase mitigation measures'* (Altemar, 2022). In the absence of mitigation, there is potential for in-combination effects with Ballyhale FRS.

Other Smaller Developments:

There are a number of small projects and applications in the area surrounding the Proposed Project that involve the construction or extension of small residential properties and/or agricultural infrastructure. A full list of these developments is provided in Appendix A-III. Due to the lack of connectivity, and nature and scale of these small developments there will be no significant effects on any designated sites and therefore there is no potential for in-combination effects with the Proposed Project.

7.1.2 Plans

Kilkenny City and County Development Plan 2021-2027 (hereinafter referred to as the Plan) sets out policies and objectives for the proper planning and sustainable development of the City and County whilst having regard to relevant national plans, policies and strategies. Chapter 1 – Introduction of the Plan outlines Objective 1A " *To implement the provisions of Articles 6(3) and 6(4) of the EU Habitats Directive and ensure that any plan or project within the functional area of the Planning Authority is subject to appropriate assessment in accordance…*" (KCCDP, 2021).

Chapter 9 - Heritage, Culture and the Arts outlines development management requirements:

" *To ensure that development proposals, where relevant, improve the ecological coherence of the Natura 2000 network and encourage the retention and management of landscape features that are of major importance for wild fauna and flora as per Article 10 of the Habitats Directive";*

"To protect and where possible enhance wildlife habitats and landscape features which act as ecological corridors/networks and stepping stones, such as river corridors, hedgerows and road verges, and to minimise the loss of habitats and features of the wider countryside (such as ponds, wetlands, trees) which are not within designated sites"; and

"To ensure that appropriate mitigation and/or compensation measures to conserve biodiversity, landscape character and green infrastructure networks are required in developments where habitats are at risk or lost as part of a development".

In the absence of mitigation, there is potential for in-combination effects with the Kilkenny City and County Development Plan.

8. CONCLUSION

Likely significant effects on the European sites (Lower River Suir SAC, River Barrow and River Nore SAC, River Nore SPA, Wexford Harbour and Slobs SPA, Saltee Islands SPA, Poulaphouca Reservoir SPA, Ballycotton Bay SPA and Cork Harbour SPA) within the ZoI of the Proposed Project cannot be excluded based on a preliminary assessment and objective criteria of the potential impacts arising from the Proposed Project, alone and in-combination with other plans and projects, in view of the conservation objectives of the relevant sites. Therefore, it is considered that the Proposed Project should progress to the next stage of the process to determine if it will adversely affect the integrity of the eight European sites and to propose mitigation.

We therefore submit that the competent authority, in this case An Coimisiún Pleanála, can determine that an Appropriate Assessment is required for the Lower River Suir SAC (002137), the River Barrow and River Nore SAC (002162), the River Nore SPA (004233), the Wexford Harbour and Slobs SPA (004076), the Saltee Islands SPA (004002), Poulaphouca Reservoir SPA (004063), Ballycotton Bay SPA (004022) and Cork Harbour SPA (004030) and that the Proposed Project, individually or in-combination with other plans or projects and in view of its conservation objectives, has the potential to have likely significant effects. Therefore, a Stage 2 Appropriate Assessment is required.

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Appendix A-I FRESHWATER PEARL MUSSEL SURVEY REPORT

BALLYFASEY WIND FARM

Freshwater Pearl Mussel Survey



Version: 2nd of December 2025

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1. INTRODUCTION

Ecofact Environmental Consultants Ltd. was commissioned by Tobin to undertake a Stage 1 Freshwater Pearl Mussel Survey (*Margaritifera margaritifera*) of watercourses affected by the proposed Ballyfasey Wind Fram in Co. Kilkenny. The purpose of the survey was to establish if Freshwater Pearl Mussels (FPMs) were present in the likely zone of influence of the proposed wind farm development.

The survey was undertaken in September 2024 under optimal environmental conditions. FPM surveys were conducted on all watercourses draining the site. The location of the proposed Ballyfasy Wind Farm site in Co. Kilkenny is shown in Figure 1.

The Freshwater Pearl Mussel is acknowledged to be one of the most demanding species of high water quality and high river bed quality in the world (Atkinson *et al*, 2024). Whilst Ireland supports a significant proportion of the *Margaritifera* populations remaining in Europe, these populations have been in dramatic decline in recent years, with an estimated decline of between 12.6% - 32.7 % between the 2007-2012 and 2013 – 2018 monitoring periods (NPWS, 2019). The species is on the IUCN Red List of Threatened Species and throughout the island of Ireland it is rated as critically endangered (Atkinson *et al*, 2024).

The Freshwater Pearl Mussel is afforded legal protection under the Wildlife Acts (1976 - 2023) in Ireland. The species was added to the fifth schedule of the Act under Statutory Instrument No. 112 of 1990. Therefore, under Section 23, it is an offence to injure or wilfully interfere with or destroy the breeding place or resting place of *Margaritifera*. The Wildlife Act affords protection to all *Margaritifera* populations within Ireland, regardless of whether they occur within or outside of an SAC (Atkinson *et al*, 2024). At a European level, *Margaritifera* is protected under the Habitats Directive and is listed under Annex II and Annex V of the Directive. The Habitats Directive has been transposed into Irish law via the European Communities Birds and Natural Habitats Regulations 2011 (S. I. No. 477 of 2011).

The Nore Pearl Mussel (*M. durrovensis*) is now considered to be an ecotype of the Freshwater Pearl Mussel (*M. margaritifera*) rather than a separate species (Geist *et al*, 2018). In this report the name Freshwater Pearl Mussel (*M. margaritifera*) is used to cover both *M. margaritifera* and the *M. durrovensis*. The National Parks and Wildlife Service (NPWS) Qualifying Interest list of the River Barrow and River Nore Special Area of Conservation (SAC) no longer includes *M. durrovensis*. The Qualifying Interest (QI) is now *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029].

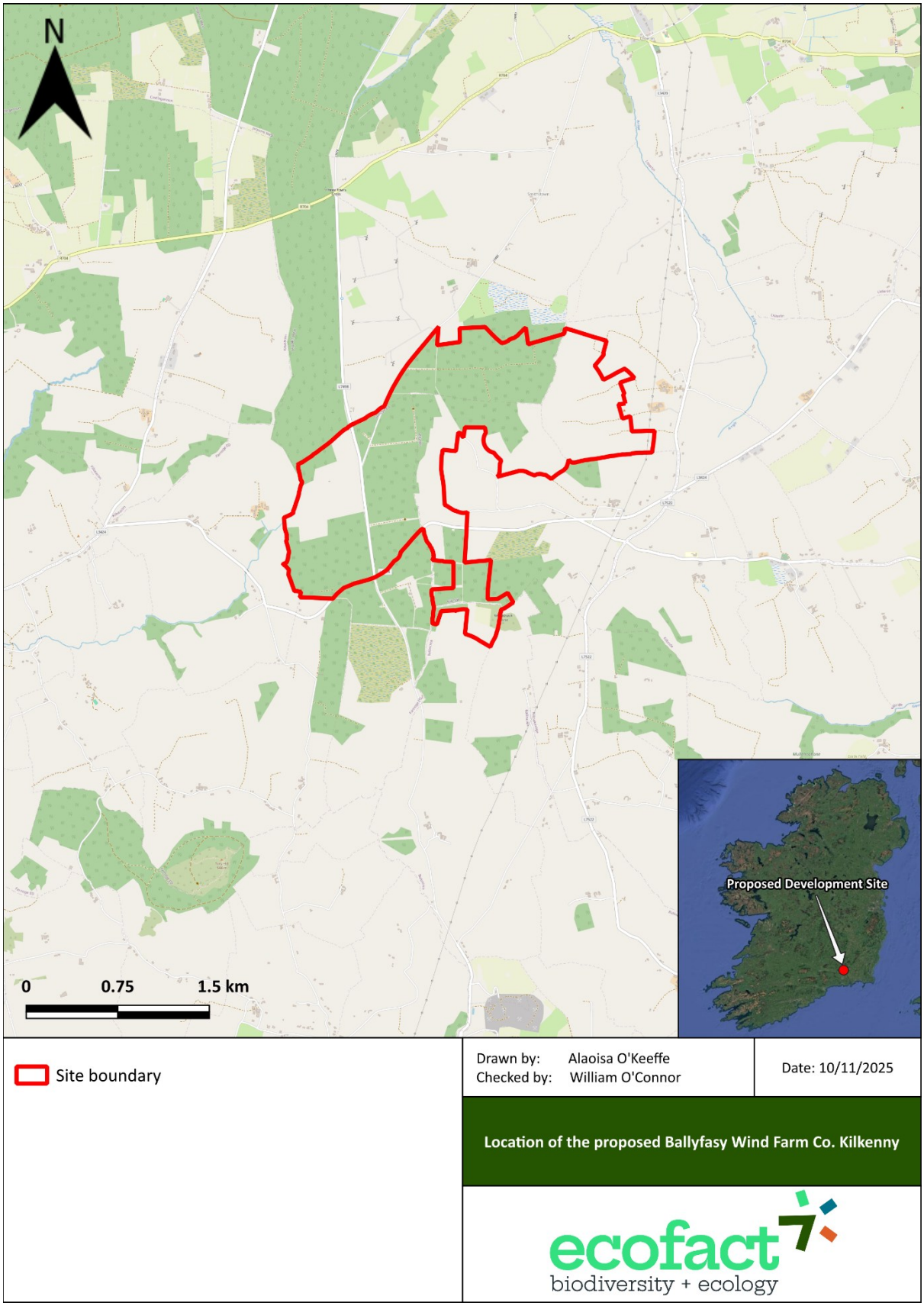


Figure 1 Location of the proposed Ballyfasy Wind Farm site in Co. Kilkenny.

2. METHODOLOGY

2.1 Desk study

A desk-study was undertaken to identify existing records for the Freshwater Pearl Mussel from within the affected river catchments, and to identify the potential for this species to occur within the study area. A desk study review of the National Parks and Wildlife Service (NPWS) designations for this species relating to the affected rivers and the relevant legislation in place for the protection of this species was also undertaken.

2.2 Field surveys

Surveys of *Margaritifera* within a watercourse carry an inherent risk of damage to mussel beds and mussel habitats, and therefore a licence is required under Sections 9, 23 and 34 of the Wildlife Act to undertake surveys of the species.

Therefore, the current survey was carried out under license (NPWS Licence No. C131/2024). The methodology employed followed the NPWS guidance '*Margaritifera margaritifera* Stage 1 and Stage 2 survey guidelines' (Anon, 2004). The surveys undertaken were to establish whether FPMs were present in the subject river channels, employing a wading / bathyscope survey. The objective of a Stage 1 FPM survey is to establish whether adult *Margaritifera margaritifera* are present or not in a river.

All watercourses were surveyed in detail to 1km downstream of the proposed wind farm site boundary. This area is shown in Figure 2. Only small 1st order watercourses are present in this area. They were all surveyed visually and no snorkelling was required. This was the survey area for the contract and all channels in this area were fully evaluated. A further general overview survey was then undertaken to 5km downstream of the proposed wind farm site (See Figure 3). The surveys in this area were general overview surveys as per the contract. Detailed assessments were also carried out at 14 selected sites (also shown in Figure 3).

2.2.1 FPM habitat assessment

Habitat has a key influence on the presence/absence and density of mussels in a river. The habitat requirements for Freshwater Pearl Mussels are outlined in Skinner *et al*. (2003). These mussels require pristine freshwater ecosystems to survive and reproduce. They inhabit medium-to-large streams or rivers with moderate to steep gradients, where fast-flowing, well-oxygenated water supports clean substrates of sand, gravel, and cobble. In Ireland, Freshwater Pearl Mussels are found in a variety of rivers, ranging from the main channels of large watercourses to small streams.

Freshwater Pearl Mussels are typically found in medium-to-large rivers and streams, particularly those classified as stream orders 2, 3, and 4 (Moorkens, 2000). These streams provide the appropriate size and flow conditions needed to support mussel populations. Gradients in these watercourses are moderate to steep, promoting fast-flowing water that ensures high levels of oxygenation. The riverbed substrata are critical, with mussels favouring small sand patches stabilized among larger stones or boulders. This type of substrate provides stability and minimizes the risk of smothering by fine sediments. Areas with significant sedimentation of silt are unsuitable, as such conditions can clog feeding structures and prevent successful juvenile recruitment. Mussel aggregations are often found in shaded areas, typically created by overhanging vegetation, which help moderate water temperatures. Substrate stability, governed by composition, flow extremes, and the gradient of the watercourse, is another crucial factor for suitable habitat. Bankside vegetation also plays an important role in mussel habitats by providing shade, stabilizing riverbanks, and reducing sediment input from erosion. These

ecological interactions highlight the dependence of Freshwater Pearl Mussels on a healthy and interconnected aquatic ecosystem.

High water quality is essential for Freshwater Pearl Mussels to survive and reproduce. They require high dissolved oxygen levels, typically exceeding 9 mg/L, and low concentrations of nutrients such as nitrogen and phosphorus. A stable pH range, generally between 6.5 and 8, is also critical. Consistent water clarity and low levels of fine sediments are necessary to avoid suffocation and habitat degradation. Cool water temperatures, typically below 20°C, are ideal for their physiological functioning. The absence of pollutants, including heavy metals, pesticides, and organic contaminants, is vital for the survival of both adult mussels and juveniles. Although older mussels can sometimes persist in areas with reduced water quality, healthy populations are strongly associated with unpolluted waters.

The survival of Freshwater Pearl Mussels is closely linked to the presence of suitable host fish, such as juvenile salmonids (*Salmo salar* and *Salmo trutta*). These fish are essential for the glochidia, the larval stage of mussels, which attach to the gills of the fish to develop. In Ireland, the hosts for glochidia are young native salmonids, typically within their first three years of life. A healthy population of juvenile salmonids is crucial, as the chances of glochidia attaching successfully are very low; most glochidia are swept downstream and die.

A general assessment of the habitat suitability and condition of the receiving watercourses was carried out at 14 selected sites. These sites are shown in Figure 3 and listed in Table 1. These sites were selected during the general survey of the wider area. These were locations which were considered to have suitable potential habitats. The habitat assessments were based on the known requirements of this species as outlined above. The surveys at these sites also had regard to the environmental parameters set out in the Fourth Schedule of the EC Environmental Objectives (Freshwater Pearl Mussel) Regulations (S.I. 296 of 2009).

2.2.2 Personnel and limitations

The surveys were completed by licenced surveyor Dr. William O'Connor, with assistance from Grace Walsh M.Sc. and Eoin McMahon. The surveys were completed during ideal conditions (dry, bright and normal water levels) during September 2024. Strict biosecurity measures were implemented between sites, including disinfecting all equipment using Virkon Aquatic. No significant limitations to the survey were identified.

Table 1 Location of the 14 sites selected for general habitat suitability and condition assessments.

Site Number	River	Segment Code	EPA Code	X	Y
A1	Arrigle	15_1470	15A02	662282	626764
A2	Arrigle	15_276	15A02	662509	629084
A3	Arrigle	15_502	15A02	662119	630104
A4	Arrigle	15_503	15A02	660647	632248
A5	Arrigle	15_90	15A02	660176	633190
A6	Arrigle	15_92	15A02	660375	635079
A7	Arrigle	15_93	15A02	660743	638230
G1	Glenmore River	16_1485	16B73	659678	624618
S1	Smartscastle (Stream)	16_1485	16B73	658011	624044
S2	Smartscastle (Stream)	16_3475	16S07	661214	621904
S3	Smartscastle (Stream)	16_3475	16S07	661255	620250
S4	Smartscastle (Stream)	16_3475	16S07	660984	619670
B1	Ballyknockbeg	16_3342	16S07	660451	617774
B2	Ballyknockbeg	15_2039	NA	665647	623522

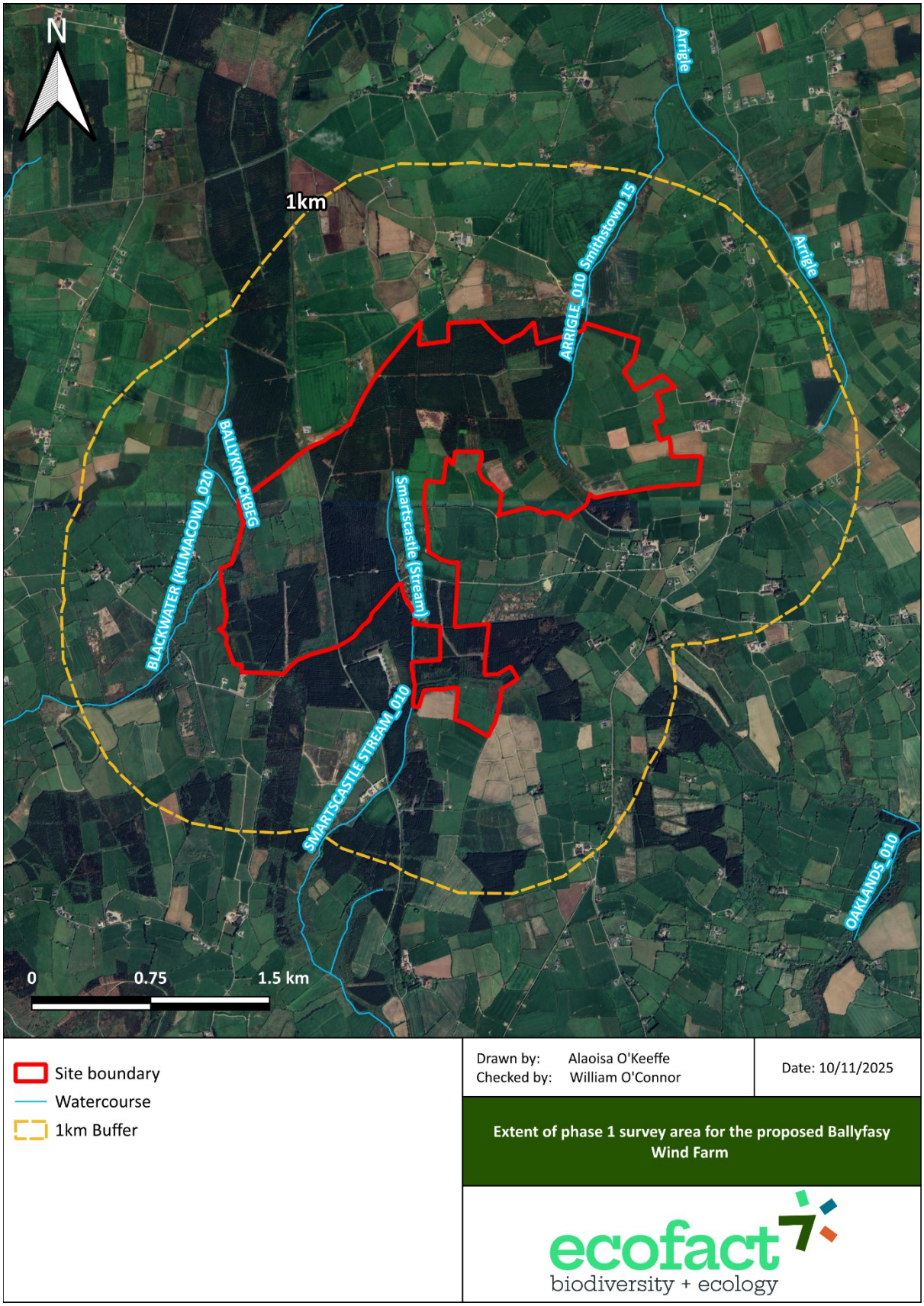


Figure 2 Extent of the Phase 1 survey of watercourses affected by the proposed Ballyfasy Wind Farm site in Co. Kilkenny.

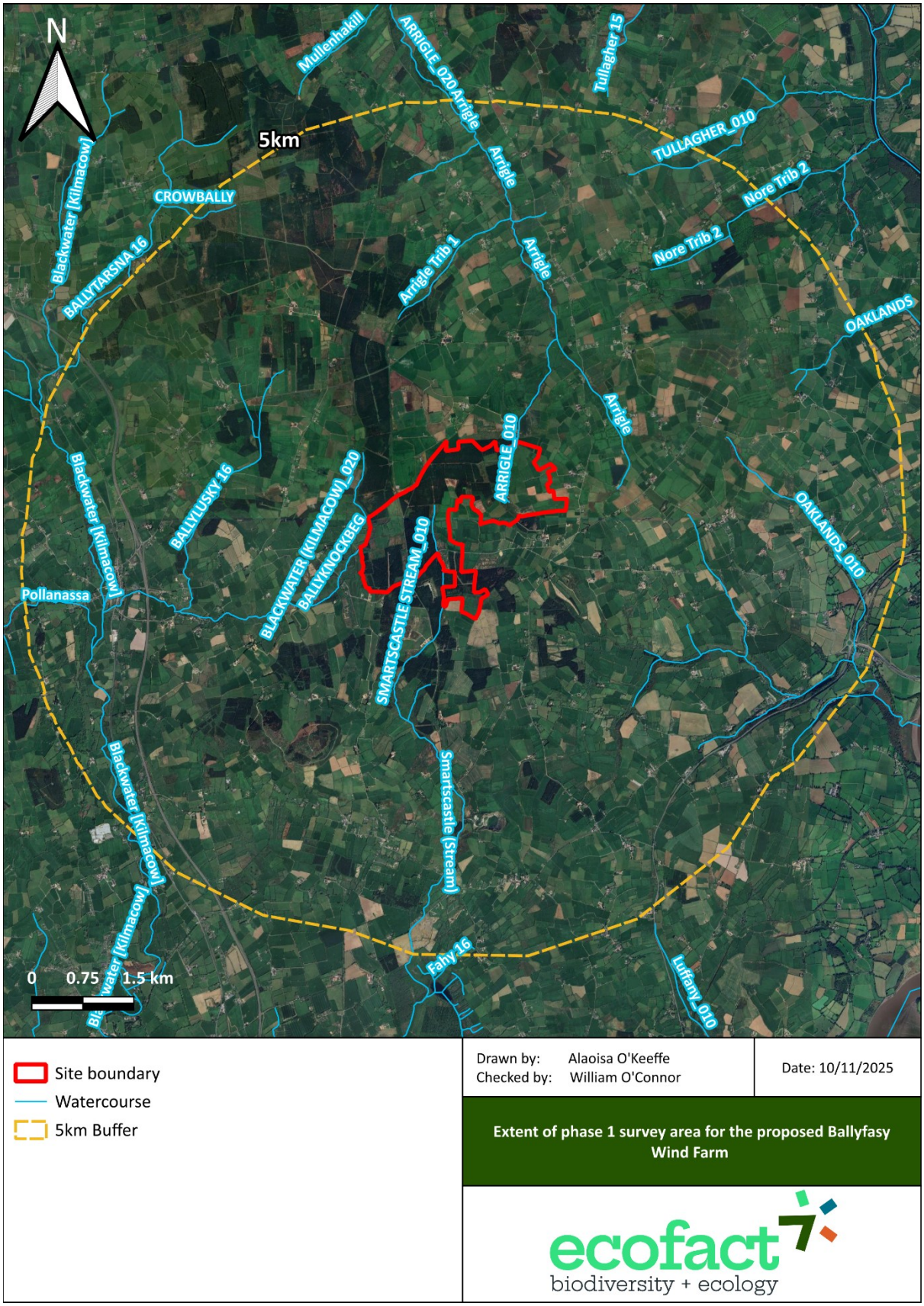


Figure 3 Extent of the general survey of watercourses affected by the proposed Ballyfasy Wind Farm site in Co. Kilkenny (5km radius).

3. RESULTS

3.1 Introduction

The location of Natura 2000 sites in relation to the proposed Ballyfasy Wind Farm site is shown in Figure 4. The proposed development is located upstream of the River Barrow and River Nore SAC (Site Code 002162) and the Lower River Suir SAC (Site Code 002137). Both of these Natura 2000 sites are designated for Freshwater Pearl Mussel [1029].

Three sub-catchments are affected by the proposed wind farm development; the Nore_SC_130 sub-catchment, the Nore_SC_140 sub-catchment, and the Blackwater[Kilmacow]_SC_010 sub-catchment. These catchments are indicated in Figure 5.

3.2 Nore_SC_130 sub-catchment

There is one watercourse within the boundary of the proposed wind farm site that is part of the Nore_SC_130 sub-catchment. This sub-catchment is shown in Figure 6. This is the Smithstown15 stream which is part of the headwaters of the River Arrigle. The Smithstown15 stream rises within the proposed development site and flows north to form the River Arrigle. The River Arrigle joins the River Nore upstream of Thomastown. The main channel of most of the River Arrigle is designated as part of the River barrow and River Nore Special Area of Conservation (SAC).

There is no suitable habitat for Freshwater Pearl Mussels in the Smithstown15 stream on the site. This watercourse is too small to support this species. The section of the River Arrigle from the Smithstown15 stream confluence downstream to the boundary of the SAC is also not considered to have any potential for Freshwater Pearl Mussels. The SAC boundary is at the R704 bridge and there is a lot of siltation at this point and there is no evidence of any mussels being present. Downstream of here the physical character of the river improves and from Ballyconnaught downstream the River Arrigle does have potential Freshwater Pearl Mussel habitats present. This area is >5km downstream of the proposed wind farm site.

The river was examined at four locations between the SAC boundary and the bridge at Ballyduff house just upstream from the River Nore. No evidence of mussels or dead shells were recorded during the spot checks completed at these locations.

There are no records of Freshwater Pearl Mussels in the River Arrigle. Moorkens *et al* (1992) reported that no live mussels were recorded in any tributaries of the River Nore. The River Arrigle was included in this survey and the survey extended over 4km of the river (which was estimated to be around 90% of the suitable habitat in the river).

This species has been confirmed absent in the areas surveyed within 1km of the wind farm site boundary. It is considered very unlikely that mussels are present in areas further downstream to the SAC boundary. No evidence of mussels or dead shells were recorded during the spot checks completed further downstream.

The River Nore main channel downstream of the River Arrigle confluence is not within the main known distribution of Freshwater Pearl Mussels in the River Nore.

The main mussel population is restricted to the section of main river channel from Poorman's Bridge to Lismaine Bridge, upstream of Ballyragget. However, the population has not successfully reproduced in the River Nore since 1970 and was considered to be on the edge of extinction in 2009 (NS 2, 2010).

The draft sub-basin management plan noted that the population in the River Nore was un-viable and on the verge of extinction (NS 2, 2010).

Water quality issues in the Nore catchment have hindered juvenile mussel recruitment, with heavy siltation and nutrient enrichment, and the timescale for such issues to be cleared is noted to be much longer than the lifespan of the last remaining mussels in the River Nore. Breeding programmes have been set up in the hope of creating self-sustaining populations that can be translocated to the Nore catchment (NS 2, 2010).

3.3 Nore_SC_140 sub-catchment

It can be seen from Figure 7 that this sub-catchment is only marginally within the red line boundary of the proposed wind farm development site. There does not seem to be any real likelihood that any drainage from the proposed development site will enter any watercourses in the catchment. There are no watercourses from the sub-catchment on or near the site. The nearest watercourse in this sub-catchment is the Parkstown Lower stream which flows into the Glenmore River. The Mullennahone stream is also located to the southeast of the red line boundary. This stream becomes the Glenmore River downstream of the Parkstown Lower stream catchment. The Glenmore River flows into the River Barrow estuary downstream of New Ross.

There are no records of Freshwater Pearl Mussels in the Nore_SC_140 sub-catchment. This species has been confirmed absent from the watercourses near the proposed wind farm site (Parkstown Lower and Mullennahone stream). The upper Glenmore River also has no potential for mussels. The Glenmore River was also inspected at Glenmore and this area was ruled out as a potential habitat for mussels. Freshwater Pearl Mussels would also not occur in the River Barrow estuary as the habitats here are unsuitable for this species.

Based on this current survey and absence of any records from this sub catchment the presence of Freshwater Pearl Mussels in the zone of influence of the proposed wind farm development is ruled out.

3.4 Blackwater [Kilmacow]_SC_010 sub-catchment

There are two watercourses within the boundary of the proposed wind farm site that are part of the Blackwater[Kilmacow]_SC_010 sub-catchment. This sub-catchment is shown in Figure 6. These are the Ballyknockbeg stream which runs along the western red line boundary of the proposed Ballyfasy Wind Farm site. This stream flows into the Ballylusky 16 stream, before joining the Blackwater [Kilmacow] River at Mullinvat. The other watercourse is the Smartcastle stream which rises on the site and flows directly south before eventually joining the tidal reaches of the Blackwater [Kilmacow] River just upstream of its confluence with the River Suir estuary.

There is no suitable habitat for Freshwater Pearl Mussels in either the Ballyknockbeg stream or Smartcastle stream on the site. These watercourses are too small, and do not have suitable gradient, to support this species. Both of these watercourses were surveyed up to 1km downstream of the proposed wind farm site boundary. It was again concluded that the habitats in these watercourses were unsuitable and no mussels were found during the survey. It is considered that these watercourses have no potential for this species within the Phase 1 survey area.

The Smartcastle stream was followed south to >5km downstream of the proposed wind farm site and again the presence of mussels was ruled out. This is a highly modified catchment that has been subjected to drainage works in the past. Water quality was also considered to be unsatisfactory with heavy siltation and growths or filamentous algae recorded. It is considered highly unlikely that mussels

are present in this watercourse. Similarly, the Ballyknockbeg stream was followed downstream as far as Mullinvat and was not considered to have any potential for mussels.

There are no Freshwater Pearl Mussel records from the Smartscastle (Stream) or Ballyknockbeg rivers. There is a single historical Freshwater Pearl Mussel record from the River Blackwater [Kilmacow] reported in Moorkens *et al* (1992). However, the species is now likely to be extinct in this catchment. Mussels have been confirmed absent in the areas surveyed within 1km of the wind farm site boundary. It was also considered very unlikely that mussels were present in areas further downstream. The general survey covered areas to >5km downstream and habitats were not considered to be suitable for this species. This is a highly modified catchment and extensive river engineering works have been undertaken in the past. Also, water quality is unsatisfactory.

The presence of Freshwater Pearl Mussels in the zone of influence of the proposed wind farm development is again ruled out.

Table 2 Evaluation of the watercourses affected by the proposed Ballyfasy Wind Farm site in relation to Freshwater Pearl Mussels.

Sub-catchment	River	Tributary	FPM Records	Suitable habitats within 1km	Suitable habitats within 5km	FPMs recorded
Nore_SC_130	Arrigle	Smithstown15	No	No	No	No
	Arrigle		No	No	No	No
Nore_SC_140	Glenmore River	Parkstown Lower*	No	No	No	No
	Glenmore River	Mullennahone	No	No	No	No
	Glenmore River		No	No	No	No
Blackwater[Kilmacow]_SC_010	Blackwater [Kilmacow]	Smartscastle (Stream)	No	No	No	No
		Ballyknockbeg	No	No	No	No

Table 3 Freshwater Pearl Mussel habitat assessments at the 14 selected sites.

Site Number	River	Description	Evaluation
A1	Arrigle	This site was located at a footbridge. The river at this location is highly modified as a result of forestry and agricultural activities. The river here is very low gradient, low flow, and is featureless. The substrate is heavily silted.	No potential mussel habitat present, presence of mussels is ruled out.
A2	Arrigle	The river at this site is larger than at Site A1 and has a rock/cobble substrate. This section has been drained and channelised in the past, with rock armouring present downstream of the bridge. Upstream of the bridge the banks are high with some bank erosion. There have been impacts as a result of encroachments by one-off house developments.	No potential mussel habitat present, presence of mussels is ruled out.
A3	Arrigle	This site was located at the R704 bridge. This section has been drained and channelised in the past. There was a lot of silt in the river at the time of the survey, and some of this appeared to	No potential mussel habitat present, presence of mussels is ruled out.

Site Number	River	Description	Evaluation
		have been recently deposited. The most likely source was considered to be nearby agricultural activities. Extensive macrophyte growth was also present.	
A4	Arrigle	The river is also modified in this area with evidence of historical flood works. The river was a similar size to Site A2 but the banks were lower. The river channel was impacted by agricultural pressures. The substrate was again comprised of rock/cobble substrate. However, it was rated as being unsuitable for mussels.	No potential mussel habitat present, presence of mussels is ruled out.
A5	Arrigle	This stretch of river was considered to have potentially suitable habitat for FPMs. The gradient was moderate, the substrate was dominated by cobbles, biological water quality was good, and the channel was unmodified with well development riparian woodland.	The areas around the bridge were checked and no mussels or dead shells were found. This was a rapid survey but this area was previously surveyed by Moorkens *et al* (1992) and no mussels were found.
A6	Arrigle	This stretch of river was accessed at a ford. This stretch had similar habitat to Site A5 and was considered to provide potential mussel habitat.	A 100m stretch at the ford was checked and no mussels or dead shells were found. This was a rapid survey but this area was previously surveyed by Moorkens *et al* (1992) and no mussels were found.
A7	Arrigle	This site was located at Ballyduff mill. This stetch of the river was again considered to be physically suitable for mussels. The river has a moderate gradient, stone/cobble substrate, and overhanging trees at this site. Water quality as considered to be satisfactory.	A 100m upstream form the bridge was checked with a rapid survey and no mussels or dead shells were found. This area was previously surveyed by Moorkens *et al* (1992) and no mussels were found.
G1	Glenmore River	This river was examined at Glenmore and upstream and is not considered to provide any potential habitat for Freshwater Pearl Mussels. Even at Glenmore this is a relatively small watercourse. The presence of mussel habitat upstream from here is ruled out.	No potential mussel habitat present, presence of mussels is ruled out. No real hydrological connectively also between the proposed wind farm site and this catchment.
S1	Smartscastle (Stream)	This site is too small and does not have any physically suitable mussel habitat present.	No potential mussel habitat present, presence of mussels is ruled out.
S2	Smartscastle (Stream)	This stream has some physically suitable FPM habitat and the gradient and substrates are somewhat suitable. However, there is evidence of historical river modification and the site was heavily silt with excessive algae growth. A 100m section of the river was checked here and	Presence of mussels is ruled out.

Site Number	River	Description	Evaluation
		the presence of mussels was ruled out.	
S3	Smartscastle (Stream)	This site has been channelised and dredged in the past. This limits it suitability for mussels to be present. The site has some borderline physically suitable mussel habitat but there are no mussels here.	Not mussel habitat, previous drainage works and water quality issues, presence of mussels is ruled out.
S4	Smartscastle (Stream)	This section of the river has been subjected to drainage works in the past and the river bed was lowered with a rock cut. This was likely to have been done to drain the former Lough Cullin. Water quality was poor at this site with visible eutrophication.	No potential mussel habitat present, presence of mussels is ruled out.
B1	Ballyknockbeg	The Ballyknockbeg is a small stream and does not have any mussel potential.	No potential mussel habitat present, presence of mussels is ruled out.
B2	Ballyknockbeg	The Ballyknockbeg is a small stream and does not have any mussel potential.	No potential mussel habitat present, presence of mussels is ruled out.

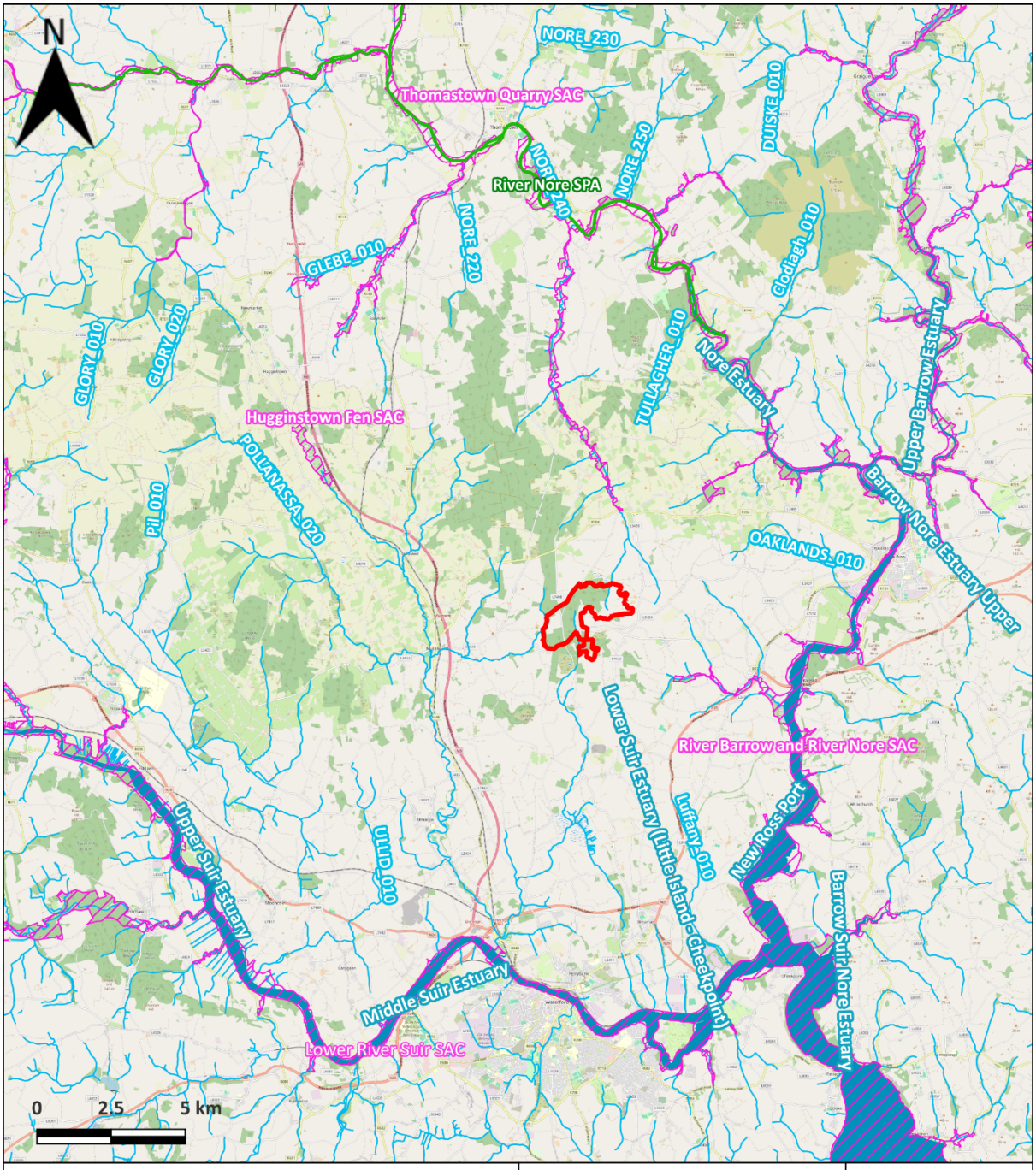


Figure 4 Location of Natura 2000 sites in relation to the proposed Ballyfasy Wind Farm site.

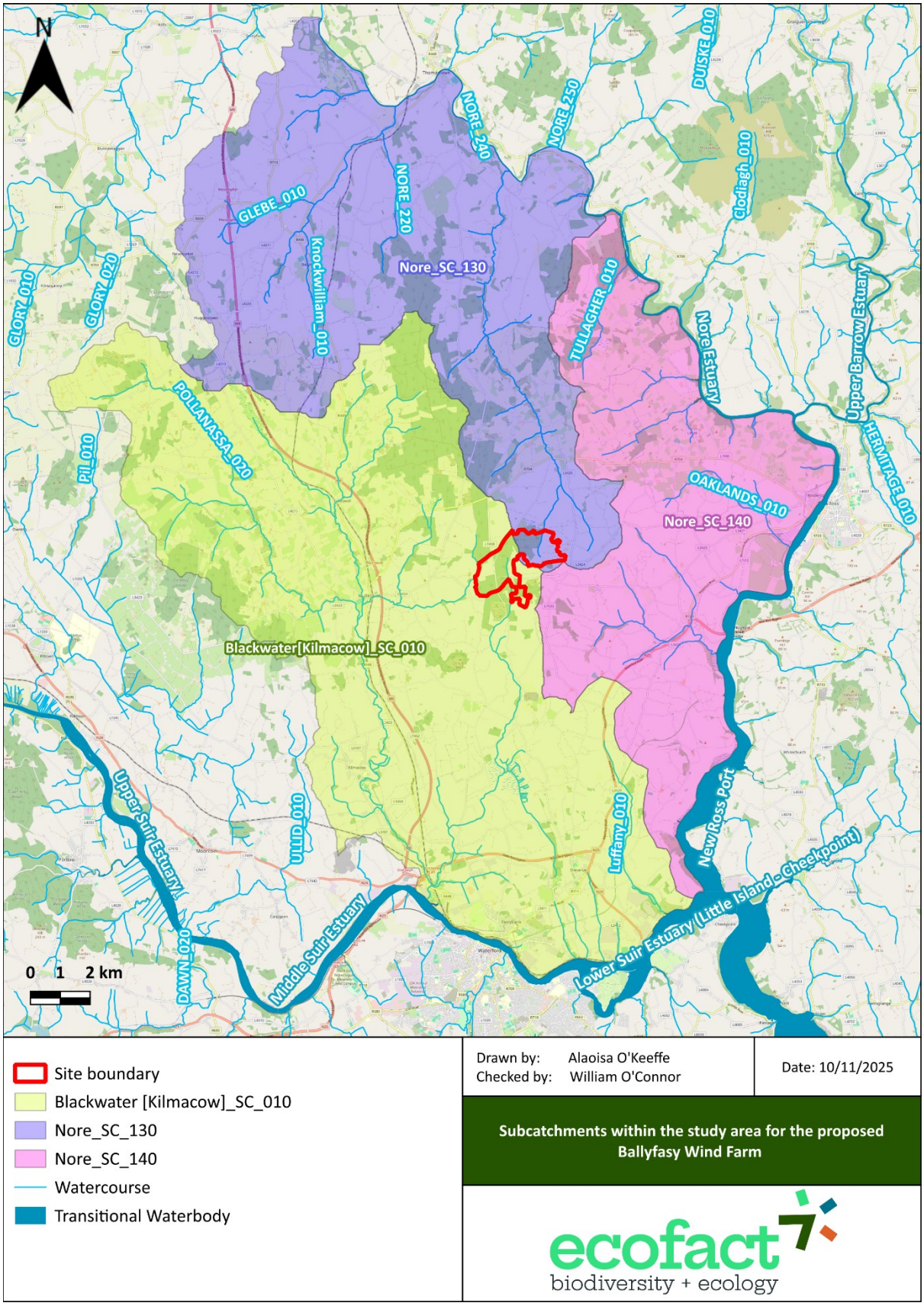


Figure 5 Sub-catchments affected by the proposed Ballyfasy Wind Farm site.

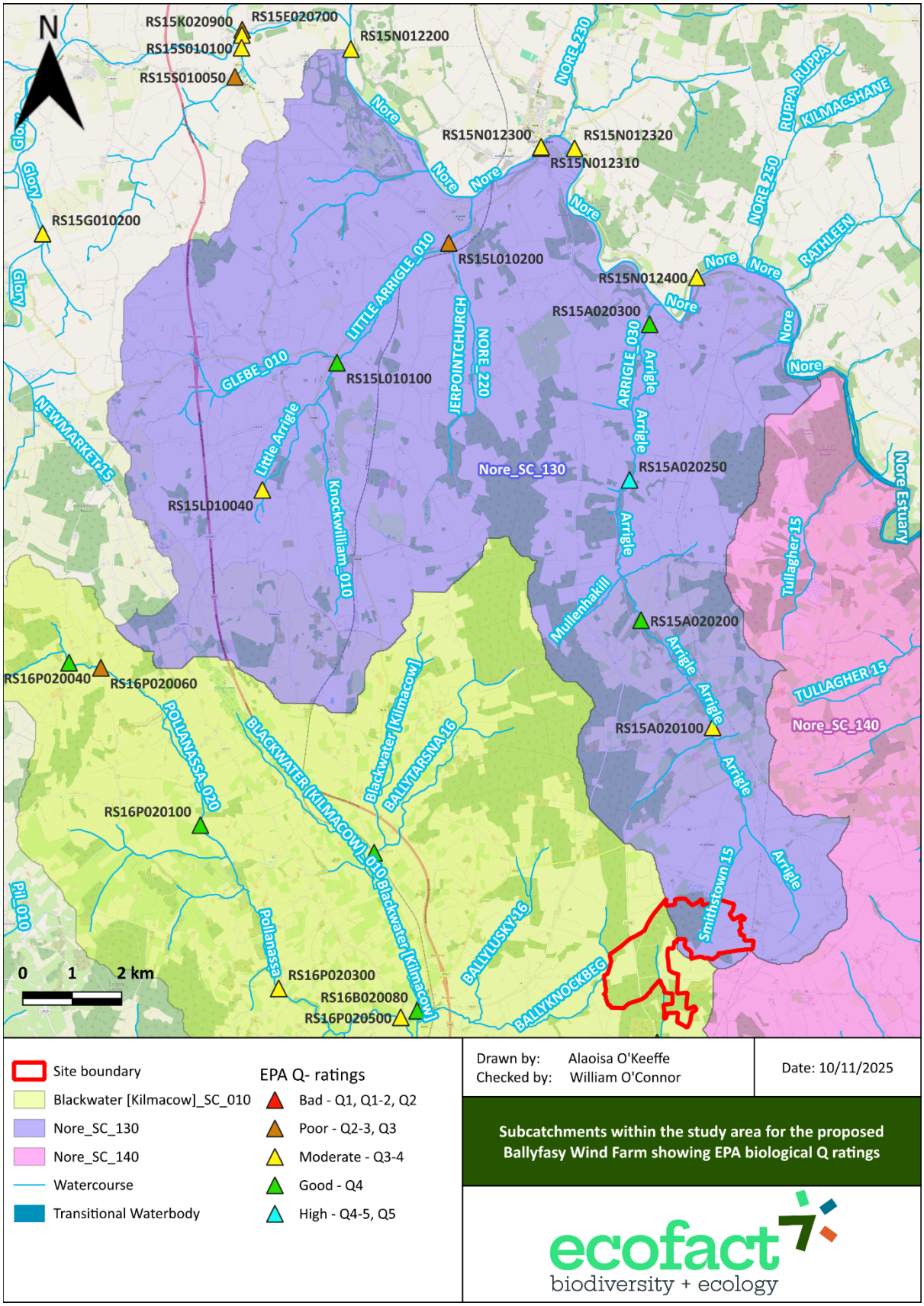


Figure 6 Location of the Nore_SC_130 sub-catchment in relation to the proposed Ballyfasy Wind Farm site.

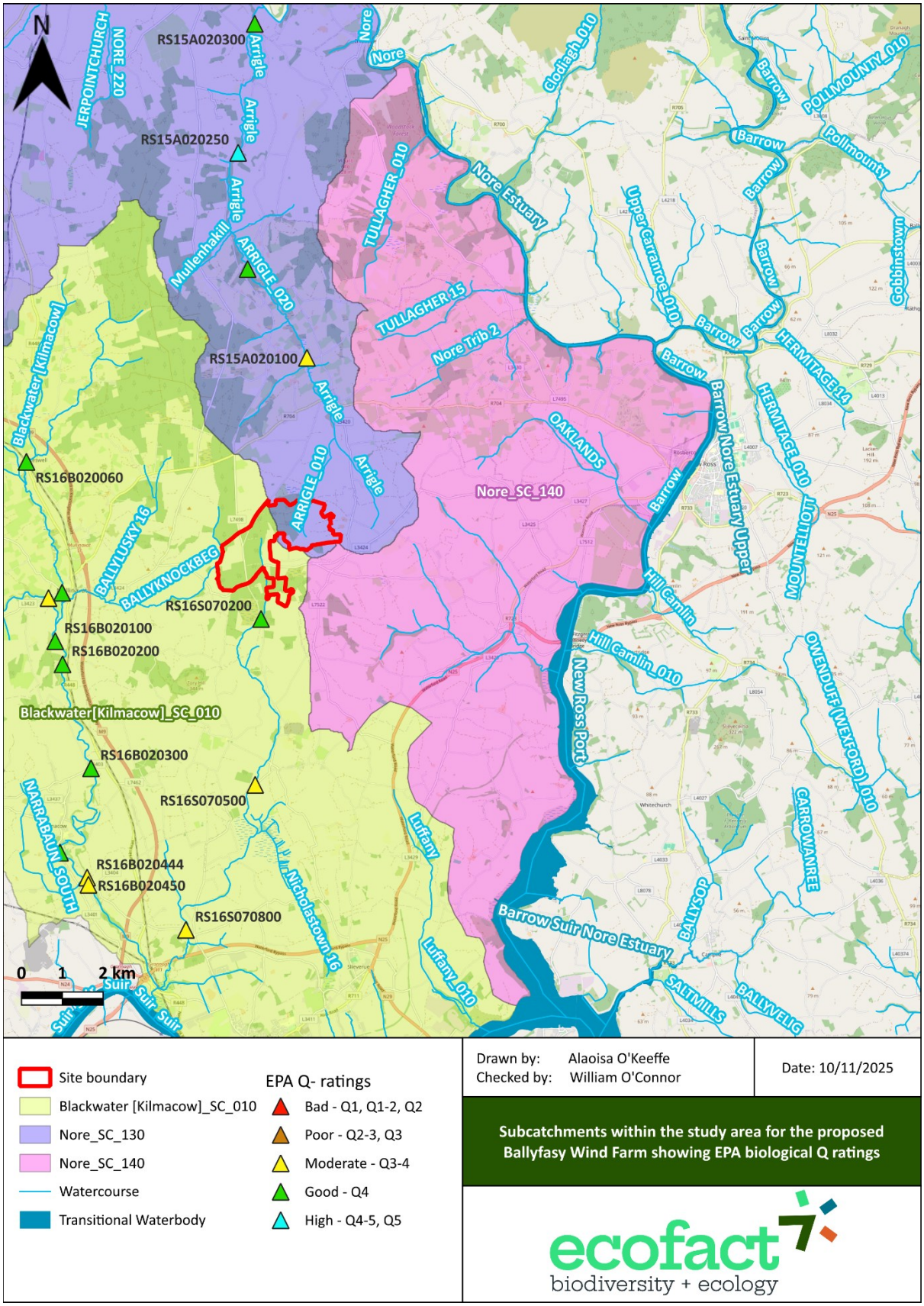


Figure 7 Location of the Nore_SC_140 sub-catchment in relation to the proposed Ballyfasy Wind Farm site.

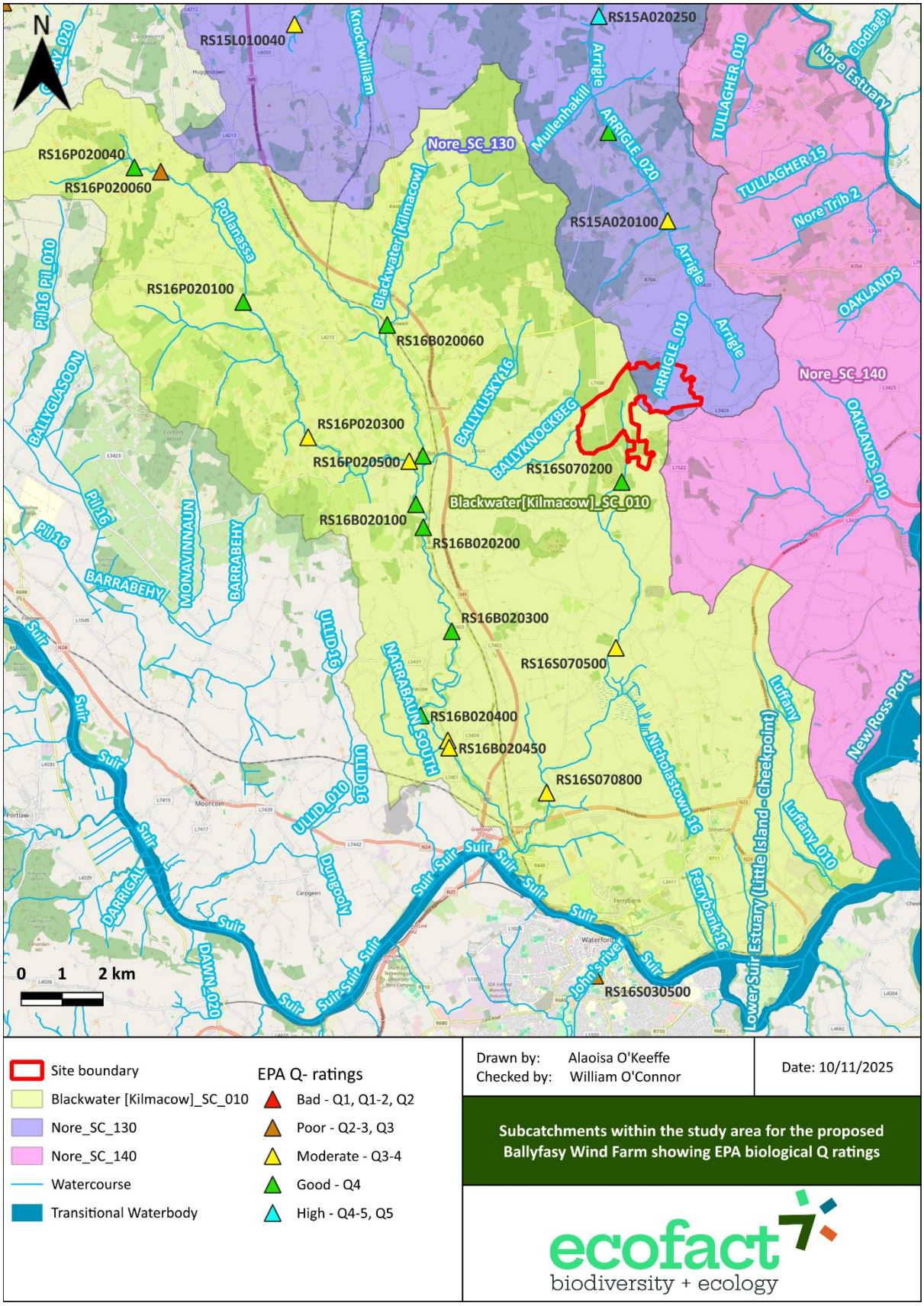


Figure 8 Location of the Blackwater [Kilmacow]_SC_010 sub-catchment in relation to the proposed Ballyfasy Wind Farm site.

4. SUMMARY AND CONCLUSIONS

The purpose of the survey was to determine whether Freshwater Pearl Mussels are present within the zone of influence of the proposed wind farm site. The current assessment included a detailed desk study followed by a field survey. The surveys were completed on all the watercourses on and draining from the proposed Ballyfasy wind farm site.

The desk study included a review of all existing records, NPWS designations, and relevant legislation pertaining to this protected species. A detailed assessment of watercourses on the site and to within 1km downstream of the site. A general survey was then completed on all the channels between a 1km and 5km radius of the proposed wind farm site. Further surveys were also completed at locations further downstream. The level of surveys completed was adequate to provide a full evaluation of Freshwater Pearl Mussels in the receiving waters of the proposed wind farm. The survey was conducted in September 2024 under optimal conditions.

The proposed wind farm is upstream of the River Barrow and River Nore SAC and Lower River Suir SAC which are both designated for Freshwater Pearl Mussel [1029]. Three sub-catchments were identified as relevant: Nore_SC_130, Nore_SC_140, and Blackwater[Kilmacow]_SC_010.

There are no records of Freshwater Pearl Mussels in the Nore_SC_130 sub-catchment, which includes the River Arrigle. Field surveys confirmed their absence within 1 km of the wind farm boundary, and no evidence such as dead shells was detected during spot checks further downstream. It was considered unlikely that mussels were present in the River Arrigle. No evidence of mussels or dead shells were recorded during the spot checks completed further downstream.

The River Nore main channel downstream of the River Arrigle confluence is not within the main known distribution of Freshwater Pearl Mussels in the River Nore.

In the Nore_SC_140 sub-catchment, the proposed development overlaps only marginally with this catchment area based on the GIS mapping completed for the current report. There are no existing records of Freshwater Pearl Mussels in this sub-catchment. Inspections of watercourses, including the Parkstown Lower and Mullennahone streams, and the Glenmore River, confirmed the unlikely presence of mussels. Furthermore, there is little likelihood that any drainage from the development site would impact watercourses in this area.

Within the Blackwater[Kilmacow]_SC_010 sub-catchment, two streams (Ballyknockbeg and Smartcastle) drain the proposed wind farm site. There are no existing records of Freshwater Pearl Mussels in this sub-catchment. Surveys conducted within 1 km of the site boundary confirmed their absence, and no evidence of mussels was found during downstream inspections.

It is concluded that Freshwater Pearl Mussels are likely to be absent from all three sub-catchments potentially affected by the proposed Ballyfasey Wind Farm. None of the watercourses draining the proposed wind farm site provide suitable habitat for the species, and their presence was ruled out in all areas surveyed. The River Nore channel downstream of the Arrigle confluence is not considered to be within the zone of influence of the proposed development, assuming effective water-quality protection and sediment-control mitigation measures are implemented. Mitigation required to protect Freshwater Pearl Mussels will need to comply with the Atkinson *et al*. (2024) guidelines.

PLATES



Plate 1 Coniferous plantation on the proposed wind farm site.



Plate 2 The upper reaches of the Smartcastle Stream within the proposed wind farm site.



Plate 3 The upper reaches of the Smartcastle Stream at Ballincrea upper.



Plate 4 The middle reaches of the Smartcastle Stream upstream of Gaulsmills.



Plate 5 The River Arrigle at the R704 bridge.



Plate 6 The middle reaches of the River Arrigle.

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Appendix A-II BIRD SURVEY DATA

Table 9-1 VP Survey Data

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
14/05/2020	VP1	12.00	16.00	4	JW	Dry sunny light wind good vis
14/05/2020	VP2	15.45	19.45	4	JW	Dry sunny light wind good visibility
28/05/2020	VP1	7.50	11.50	4	JW	Sunny, dry, warm, breezy, excellent visibility
28/05/2020	VP2	11.15	15.15	4	JW	Sunny, dry, warm, breezy, excellent visibility
26/06/2020	VP1	6.45	10.45	4	JW	Dry, rolling mist, l breeze, vis poor in mist good in clearance
26/06/2020	VP2	10.00	14.00	4	JW	Dry, sunny, mod breeze, good visibility
30/07/2020	VP1	17.10	21.10	4	JW	Sunny, Windy, excellent visibility
30/07/2020	VP2	10.10	14.10	4	JW	Sunny, Windy, excellent visibility
31/07/2020	VP1	14.20	17.20	4	JW	Mod breeze, good visibility, showery, overcast
31/07/2020	VP2	17.30	20.30	4	JW	Overcast, moderate breeze, showery, good visibility
06/08/2020	VP1	17.30	20.30	3	JW	Dry, warm, low cloud, SW light breeze. Excellent visibility
06/08/2020	VP2	17.30	20.30	3	GG	Dry, warm, low cloud, SW light breeze. Excellent visibility
08/08/2020	VP1	8.00	11.00	3	GG	Cloudy, calm, warm 20C, dry, excellent visibility
08/08/2020	VP2	8.00	11.00	3	JW	Cloudy, calm, warm 20C, dry, excellent visibility
07/09/2020	VP1	17.00	20.00	3	JW	Dry, moderate cloud, light breeze, excellent visibility
07/09/2020	VP2	17.00	20.00	3	GG	Dry, moderate cloud, light breeze, excellent visibility
08/09/2020	VP1	8.00	11.00	3	GG	Dry, moderate cloud, light breeze, excellent visibility
08/09/2020	VP2	8.00	11.00	3	JW	Dry, moderate cloud, light breeze, excellent visibility
22/10/2020	VP1	12.00	15.00	3	JW	Dry sunny light wind good visibility
22/10/2020	VP1	12.00	15.00	3	GG	Dry sunny light wind good visibility
22/10/2020	VP1	8.45	11.45	3	GG	Dry sunny light wind good visibility
22/10/2020	VP2	8.45	11.45	3	JW	Dry sunny light wind good visibility

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
12/11/2020	VP1	8.30	11.30	3	JW	Showers, windy, good visibility
12/11/2020	VP2	11.30	14.30	3	JW	Showers, windy, good visibility
13/11/2020	VP1	8.30	11.30	3	JW	Showers, windy, good visibility
13/11/2020	VP2	11.30	14.30	3	JW	Showers, windy, good visibility
19/11/2020	VP1	10.30	13.30	3	PD	Dry, clam, mild 10C. Okta 7 high cloud. Excellent visibility
19/11/2020	VP2	14.00	17.00	3	PD	Dry, clam, mild 10C. Okta 7 high cloud. Excellent visibility
02/12/2020	VP1	13.30	16.30	3	PD	Cold, dry, cloudy, Okta 6, good visibility
02/12/2020	VP2	13.30	16.30	3	JW	Cold, dry, cloudy, Okta 6, good visibility
03/12/2020	VP1	8.30	11.30	3	JW	Cold, dry, cloudy, Okta 6, good visibility
03/12/2020	VP2	8.30	11.30	3	PD	Cold, dry, cloudy, Okta 6, good visibility
19/12/2020	VP1	9.15	12.15	3	PD	Bright, Okta 2, Calm, Mild 10C, excellent visibility
19/12/2020	VP2	12.30	15.30	3	PD	Bright, Okta 2, Calm, Mild 10C, excellent visibility
14/01/2021	VP1	8.00	11.00	3	JW	Drizzle, cloudy, moderate to good visibility
14/01/2021	VP2	12.00	15.00	3	JW	Dry, cloudy, good visibility
22/01/2021	VP1	14.00	17.00	3	GG	Dry, cloudy, good visibility
22/01/2021	VP2	14.00	17.00	3	JW	Dry, cloudy, good visibility
10/02/2021	VP1	14.30	17.30	3	GG	Cold, showers (Snow), good visibility
10/02/2021	VP2	14.30	17.30	3	JW	Cold, showers (Snow), good visibility
05/03/2021	VP1	11.00	14.00	3	GG	Dry, good visibility,
05/03/2021	VP2	11.00	14.00	3	JK	Overcast, moderate breeze, good visibility
07/04/2021	VP1	16.30	19.30	3	JW	Overcast, showers, light breeze, good visibility
07/04/2021	VP2	16.30	19.30	3	GG	Cloudy, good visibility
12/05/2021	VP1	17.15	20.15	3	JW	Sunny, dry, low cloud cover, warm 19C
12/05/2021	VP2	17.00	20.30	3.5	GG	Sunny, dry, low cloud cover, warm 19C

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
13/05/2021	VP1	8.00	11.00	3	GG	Fog mist, poor visibility, clearing later to sunny and clear conditions with excellent visibility
13/05/2021	VP2	9.00	12.00	3	JW	Fog mist, poor visibility, clearing later to sunny and clear conditions with excellent visibility
30/05/2021	VP1	9.00	12.00	3	JW	Dry, SW wind, moderate cloud cover excellent visibility 16C
30/05/2021	VP2	9.00	12.00	3	GG	Dry, SW wind, moderate cloud cover excellent visibility 16C
25/06/2021	VP1	9.00	12.00	3	JW	North Wind, good visibility, moderate cloud cover
25/06/2021	VP1	12.00	15.00	3	GG	North Wind, good visibility, moderate cloud cover
25/06/2021	VP2	9.00	12.00	3	GG	North Wind, good visibility, moderate cloud cover
25/06/2021	VP2	12.00	15.00	3	JW	North Wind, good visibility, moderate cloud cover
30/05/2022	VP1	10.00	14.00	4	GG	Dry W wind excellent visibility 14dg
30/05/2022	VP2	14.00	18.00	4	GG	Dry , W wind 14dg excellent visibility.
31/05/2022	VP1	8.00	12.30	4.5	GG	Dry, SW wind, 15dg, cloudy, excellent visibility
31/05/2022	VP2	8.15	12.15	4	JW	Dry, SW wind, 15dg, cloudy, excellent visibility
10/06/2022	VP1	11.00	14.00	3	JW	Dry W wind excellent visibility 14dg
10/06/2022	VP2	14.00	17.00	3	JW	Dry , W wind 14dg excellent visibility.
11/06/2022	VP1	8.15	11.30	3.5	GG	Sunny, dry, low cloud cover, breeze. Excellent visibility
11/06/2022	VP2	8.00	11.00	3	JW	Sunny, dry, low cloud cover, breeze. Excellent visibility
28/07/2022	VP1	13.00	16.30	3.5	GG	High cloud, light breeze, dry, excellent visibility
28/07/2022	VP2	13.15	16.15	3	JW	High cloud, light breeze, dry, excellent visibility
31/08/2022	VP1	13.30	16.30	3	JW	Sunny, Clear, moderate breeze, excellent visibility
31/08/2022	VP2	13.15	16.45	3.5	JW	Sunny, Clear, moderate breeze, excellent visibility
31/08/2022	VP2	17.00	20.00	3	JW	Sunny, Clear, moderate breeze, excellent visibility
31/08/2022	VP2	20.00	22.00	2	GG	Sunny, Clear, moderate breeze, excellent visibility
01/09/2022	VP1	7.00	10.30	3.5	GG	Sunny, Clear, mod breeze, exc. visibility.

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
01/09/2022	VP1	11.15	14.15	3	JW	Sunny, Clear, mod breeze, exc. visibility.
01/09/2022	VP2	7.15	10.15	3	JW	Sunny, Clear, mod breeze, exc. visibility.
01/09/2022	VP2	11.00	14.30	3.5	GG	Sunny, Clear, mod breeze, exc. visibility.
14/10/2022	VP1	10.30	13.30	3	PD	Breeze SW, cloudy Okta 7, dry, mild 12C, excellent visibility
14/10/2022	VP2	14.00	17.00	3	PD	Breeze SW, cloudy Okta 7, dry, mild 12C, excellent visibility
15/10/2022	VP1	9.00	12.00	3	PD	Breeze SW, cloudy Okta 7, rain, mild 12C, moderate visibility
15/10/2022	VP2	9.00	12.00	3	JW	Breeze SW, cloudy Okta 7, rain, mild 12C, moderate visibility
16/11/2022	VP1	10.30	13.30	3	GG	Dry light cloud 7° light SW excellent visibility.
16/11/2022	VP2	13.45	16.45	3	GG	Dry light cloud 8° light SW excellent visibility.
17/11/2022	VP1	8.30	11.30	3	GG	Bright dry morning 4° light SW wind good visibility.
17/11/2022	VP2	11.45	14.45	3	GG	Dry with light SW wind 7° excellent visibility.
21/12/2022	VP1	0.44	0.56	3	GG	Dry 5° moderate SW wind excellent visibility.
21/12/2022	VP2	13.30	16.30	3	GG	Dry 7° moderate SW wind excellent visibility.
22/12/2022	VP1	8.00	11.00	3	GG	Dry 8° fog very light S wind poor visibility.
22/12/2022	VP2	11.30	14.30	3	GG	Dry 7° heavy fog light, SW wind poor visibility.
06/01/2023	VP3	8.00	11.00	3	PD	Light showers. Overcast. 7C. Light Breeze SW. Good Visibility
06/01/2023	VP3	13.45	16.45	3	PD	Light showers. Overcast. 7C. Light Breeze SW. Good Visibility
25/01/2023	VP1	10.15	13.15	3	GG	Overcast light NW wind light drizzle 8° good visibility.
25/01/2023	VP2	13.15	16.15	3	GG	Overcast occasional very light drizzle 8° light NW wind excellent visibility.
26/01/2023	VP1	8.45	11.45	3	GG	Some cloud 6° light NW wind excellent visibility
26/01/2023	VP2	8.45	11.45	3	JW	Some cloud 6° light NW wind excellent visibility
09/02/2023	VP3	8.00	11.00	3	PD	Overcast. Okta 8..Dry. Light breeze S. 10C.High cloud. Excellent Visibility
09/02/2023	VP3	14.00	17.00	3	PD	Overcast. Okta 8..Dry. Light breeze S. 10C.High cloud. Excellent Visibility
15/02/2023	VP1	14.00	17.00	3	GG	Dry with some cloud 8° with light SW wind excellent visibility.

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
15/02/2023	VP2	11.00	14.00	3	GG	Dry with some cloud light SW wind 9° excellent visibility.
16/02/2023	VP1	8.00	11.00	3	GG	Dry bright morning light SW wind 8°excellent visibility.
16/02/2023	VP2	11.00	14.00	3	GG	Dry bright day with light SW wind 11° excellent visibility.
27/02/2023	VP3	15.00	18.00	3	PD	Dry. Bright. WSW Light Breeze. Okta 6. Excellent visibility
01/03/2023	VP3	7.00	10.00	3	PD	Overcast. No rain, dry. Mild 11C.Okta 8. Breeze SSW
01/03/2023	VP3	15.30	18.30	3	PD	Overcast. No rain, dry. Mild 11C.Okta 8. Breeze SSW
16/03/2023	VP3	7.00	10.00	3	PD	Dry. Cloudy Okta 5. Light air SW.
16/03/2023	VP3	15.30	18.30	3	PD	Dry. Cloudy Okta 5. Light air SW.
30/03/2023	VP1	10.00	13.00	3	GG	Full cloud cover 12° moderate SW wind heavy showers poor visibility.
30/03/2023	VP2	13.00	16.00	3	GG	Full cloud cover frequency of showers decreasing from above 12dg moderate SW wind good visibility.
31/03/2023	VP1	8.00	11.00	3	GG	Heavy rain 12dg moderate NW wind pool visibility.
31/03/2023	VP2	11.00	14.00	3	GG	Persistent rain 12dg moderate NW wind poor to moderate visibility.
16/04/2023	VP3	10.30	13.30	3	PD	Dry. Okta 4. Bright. Light Breeze SW. Excellent Visibility
16/04/2023	VP3	10.00	13.00	3	PD	Dry. Okta 4. Bright. Light Breeze SW. Excellent Visibility
17/04/2023	VP3	8.00	11.00	3	PD	Dry. Bright. Okta 4. Light air. Excellent Visibility/
27/04/2023	VP1	10.00	13.00	3	GG	Full cloud cover persistent drizzle poor visibility light SE wind 10dg.
27/04/2023	VP2	13.00	16.00	3	GG	Full cloud cover moderate SE wind 10dg intermittent showers of drizzle, poor to moderate visibility
28/04/2023	VP1	7.50	10.50	3	GG	80% cloud cover 12dg light SE wind dry with excellent visibility.
28/04/2023	VP2	10.50	13.50	3	GG	80% cloud cover 13dg dry light SE wind excellent visibility.
11/05/2023	VP1	13.10	16.10	3	GG	Dry with occasional showers 14dg moderate NW wind excellent visibility.
11/05/2023	VP2	10.00	13.00	3	GG	Dry with full cloud cover 12dg moderate NW wind excellent visibility.
12/05/2023	VP1	11.00	14.00	3	GG	Dry day with some cloud 15dg light to moderate NW wind excellent visibility.
12/05/2023	VP2	8.00	11.00	3	GG	Dry with some fog which is burning off very light NW wind poor to moderate visibility but expecting improvement.

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
23/05/2023	VP3	11.00	17.00	6	PD	Dry. Okta 3. Calm. Excellent visibility
08/06/2023	VP3	18.30	21.30	3	PD	Dy. Okta 3. Calm. Sunny. Excellent Visibility
09/06/2023	VP3	9.15	12.15	3	PD	Dry, sunny, 22C, Okta 2, calm, excellent visibility
28/06/2023	VP1	12.40	15.40	3	GG	Overcast morning cloud starting to clear 15dg moderate W wind excellent visibility.
28/06/2023	VP2	9.40	12.40	3	GG	Overcast day with moderate W wind 16dg light drizzle at times good visibility.
29/06/2023	VP1	8.00	11.00	3	GG	Dry bright day with light W wind 15dg excellent visibility.
29/06/2023	VP2	11.00	14.00	3	GG	Dry day with cloud increasing 18dg moderate W wind excellent visibility.
20/07/2023	VP1	14.00	17.00	3	GG	Dry day with some cloud moderate W wind 20dg excellent visibility.
20/07/2023	VP2	13.30	13.30	3	GG	Dry day with some cloud 20dg with moderate W wind excellent visibility.
20/07/2023	VP3	8.00	11.00	3	PD	Dry with moderate W wind. 20
20/07/2023	VP3	17.30	20.30	3	PD	Dry, cloudy, Okta 6 - 7, light air SW, 19C, excellent visibility
21/07/2023	VP1	11.30	14.30	3	GG	Dry day with some cloud moderate SW wind 14dg excellent visibility.
21/07/2023	VP2	8.00	11.00	3	GG	Dry day with some cloud light SW wind 14dg excellent visibility.
02/08/2023	VP3	14.00	17.00	3	PD	Dry. Okta 8. high Cloud. Calm. Excellent Visibility.
04/08/2023	VP3	10.30	13.30	3	PD	Dry. Okta 7. Light breeze. Excellent Visibility
17/08/2023	VP1	14.00	17.00	3	GG	Dry bright day with some cloud 22dg moderate SE wind excellent visibility.
17/08/2023	VP2	10.30	13.30	3	GG	Dr6 bright day with some cloud 20dg light to moderate SE wind excellent visibility.
18/08/2023	VP1	11.30	14.30	3	GG	Overcast light showers moderate SE wind 17dg poor visibility.
18/08/2023	VP2	8.00	11.00	3	GG	Overcast with frequent showers 17dg moderate SE wind poor visibility.
03/09/2023	VP3	15.00	18.00	3	PD	Dry. Okta 5. S. Breeze. Excellent Visibility
18/09/2023	VP2	8.30	11.30	3	GG	Overcast with occasional drizzle 13dg good visibility
22/09/2023	VP3	10.00	13.00	3	PD	Dry. Bright. Okta 2. Ligh Breeze NW
28/09/2023	VP1	12.00	15.00	3	GG	Overcast with occasional drizzle 13dg good visibility

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
28/09/2023	VP2	8.30	11.30	3	GG	Overcast 13dg dry with occasional drizzle good visibility
29/09/2023	VP1	11.30	14.30	3	GG	Dry bright day with light W wind 14dg excellent visibility.
29/09/2023	VP2	8.00	11.00	3	GG	Dry bright day with light W wind 14dg excellent visibility.
19/10/2023	VP1	12.30	15.30	3	GG	Overcast with moderate SE wind 16dg some showers good visibility.
19/10/2023	VP2	9.00	12.00	3	GG	Overcast with moderate SE wind 14dg frequent showers moderate visibility.
20/10/2023	VP1	11.30	14.30	3	GG	Heavy fog visibility limited to 200mtrs13dg no wind
20/10/2023	VP2	8.00	11.00	3	GG	Heavy fog no wind 8dg poor visibility.
27/10/2023	VP3	7.45	10.45	3	PD	Dry, high cloud Okta 5, 3C, breeze W, excellent visibility
27/10/2023	VP3	12.30	15.30	3	PD	Dry, high cloud Okta 5, 3C, breeze W, excellent visibility
16/11/2023	VP1	14.30	17.30	3	GG	Persistent showers 8dg light NNW wind good visibility. At 14.50 showers turning heavy visibility worsening, visibility now poor
16/11/2023	VP2	11.00	14.00	3	GG	Overcast but dry 9dg 15km NNW wind excellent visibility
17/11/2023	VP1	7.00	10.00	3	GG	Light cloud 5dg light WSW wind excellent visibility
17/11/2023	VP2	10.30	13.30	3	GG	Light cloud 6dg light WSW wind excellent visibility.
23/11/2023	VP3	14:00	17:00	3	JW	Overcast, dry, excellent visibility
30/11/2023	VP3	9.30	13.30	4	PD	Dry. Bright Okta 2 -3. N Light Breeze. Excellent visibility
04/12/2023	VP1	11.15	14.15	3	JW	Sunny, cold, windy, excellent visibility
04/12/2023	VP2	11.00	14.30	3.5	GG	Dry bright day with moderate NW wind 4dg excellent visibility.
07/12/2023	VP1	11.15	14.15	3	JW	Persistent rain 9dg strong SE wind poor visibility
07/12/2023	VP2	11.00	14.30	3.5	GG	Raining, poor visibility, warm, windy
11/12/2023	VP3	7.45	11.15	3.5	PD	Dry early, with showers later. Okta 8. S. Breeze. Good visibility
20/12/2023	VP3	10.30	14.00	3.5	PD	Dry. Okta 1. NW Light Breeze. Clear bright excellent visibility.
02/01/2024	VP1	11.00	14.00	3	JW	Raining, breezy, average visibility
02/01/2024	VP2	14.30	17.30	3	JW	Overcast, breezy, excellent visibility

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
03/01/2024	VP2	12.00	15.00	3	JW	Broken cloud, breezy, excellent visibility
05/01/2024	VP1	8.00	11.00	3	JW	Sunny, breezy, cold, excellent visibility
25/01/2024	VP3	9.15	12.15	3	PD	Dry. Overcast. Okta 8. high cloud. Light air SURFACE WATER, excellent visibility.
30/01/2024	VP3	7.30	10.30	3	PD	Dry. Low cloud, sunny spells, Okta 2. Calm. Excellent visibility
10/02/2024	VP1	11.15	14.15	3	JW	Overcast, breezy, drizzle, 14dg, WSW wind average visibility
10/02/2024	VP2	11.00	14.30	3.5	GG	Overcast, breezy, drizzle, 14dg, WSW wind average visibility
27/02/2024	VP1	14.00	18.00	4	JW	Dry, sunny, breezy, clear, excellent visibility
27/02/2024	VP3	9.30	12.30	3	PD	Dry, high broken cloud Okta 3, sunny, calm, excellent visibility
29/02/2024	VP2	8.00	11.00	3	JW	Sunny, excellent visibility, breezy, cool, broken cloud
01/03/2024	VP3	7.15	10.15	3	PD	Cold 0 - 2C, drizzle and sleet, breeze SW, Okta 8 medium cloud height, good visibility
12/03/2024	VP1	14.00	17.00	3	JW	Overcast, occasional light drizzle, moderate breeze, good visibility, rolling fog banks during survey
12/03/2024	VP2	10.30	13.30	3	JW	Good vis for 1hr the rolling fog banks. vis poor
13/03/2024	VP1	8.30	11.30	3	JW	Overcast, light showers, poor visibility
13/03/2024	VP3	15.00	18.00	3	PD	Overcast. Light drizzle - occasional. Okta 8. high cloud. SW breeze. Good visibility.
14/03/2024	VP2	8.00	11.00	3	JW	Foggy, poor visibility
28/03/2024	VP3	16.00	19.00	3	PD	calm 12C Okta 6 DRY sunny spells excellent visibility
10/04/2024	VP1	8.00	11.00	3	JW	Overcast dry, good visibility, except last 20min in fog, moderate breeze
11/04/2024	VP2	15.00	18.00	3	JW	Foggy again, poor visibility
12/04/2024	VP1	8.00	11.00	3	JW	Low cloud, poor aerial vis good to 30m only
12/04/2024	VP2	11.30	14.30	3	JW	Fog from 9 to 11AM clearing for last hour. Moderate breeze, dry
16/04/2024	VP3	13.00	16.00	3	PD	Dry, Wind light breeze, cloud cover Okta 4, temp. 13C
30/04/2024	VP3	12.00	15.00	3	PD	Dry, cloudy Okta 6 high cloud, 15C, light breeze S, excellent visibility
17/05/2024	VP3	18.30	21.30	3	PD	Overcast, dry, high cloud, mild 17C, light air, excellent visibility

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
20/05/2024	VP3	8.00	11.00	3	PD	Sunny, broken cloud, Okta 3, 19C, calm, excellent visibility
30/05/2024	VP1	17.15	18.15	3	JW	Broken cloud, mod breeze, warm, excellent visibility
30/05/2024	VP2	14.00	17.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
31/05/2024	VP1	10.15	13.15	3	JW	Broken cloud, mod breeze, warm, excellent visibility
31/05/2024	VP2	7.00	10.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
11/06/2024	VP1	15.00	18.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
11/06/2024	VP2	12.00	15.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
25/06/2024	VP3	8.10	11.10	3	LP	Dry, 16C, Okta 3, light breeze, excellent visibility
26/06/2024	VP3	11.40	14.40	3	LP	Dry 21C, Okta 2, light air, excellent visibility
30/06/2024	VP1	12.00	15.00	3	JW	Broken cloud, mod to fresh breeze, warm, excellent visibility
30/06/2024	VP2	15.00	18.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
05/07/2024	VP1	7.00	10.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
05/07/2024	VP2	10.00	13.00	3	JW	Broken cloud, mod breeze, warm, excellent visibility
20/07/2024	VP1	15.00	18.00	3	JW	O.cast, showery, rain earlier, mod breeze, avg vis
20/07/2024	VP2	18.00	21.00	3	JW	O.cast, showery, rain earlier, mod breeze, avg vis
29/07/2024	VP3	11.40	14.40	3	LP	Drizzle, wind S, Okta 7, good visibility
30/07/2024	VP3	15.10	18.10	3	LP	Dry, Okta 6, good visibility, mild 17C.
09/08/2024	VP1	11.00	14.00	3	JW	Bright, broken cloud, windy, excellent visibility
21/08/2024	VP2	7.00	10.00	3	JW	Overcast, light breeze, excellent visibility
26/08/2024	VP1	18.00	21.00	3	JW	Overcast the drizzle, good vis, light breeze
26/08/2024	VP2	15.00	18.00	3	JW	Overcast, drizzle, good visibility, light breeze
29/08/2024	VP3	14.40	17.40	3	LP	Dry, Okta 2, excellent visibility, mild 20C.
30/08/2024	VP3	7.40	10.40	3	LP	Dry, Okta 2, excellent visibility, mild 20C.
24/09/2024	VP1	14.00	17.00	3	GG	Dry bright day with some cloud moderate W wind 13dg excellent visibility.

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
24/09/2024	VP2	17.00	20.00	3	JW	Overcast, light breeze, excellent visibility
26/09/2024	VP1	8.30	11.30	3	GG	Overcast with light NW wind 10dg persistent rain moderate visibility
26/09/2024	VP2	7.30	10.30	3	JW	Overcast, drizzle, windy, moderate visibility
26/09/2024	VP3	14.50	17.50	3	LP	NW wind light breeze, 10C, Okta 8, drizzle. Good visibility
27/09/2024	VP3	8.20	11.20	3	LP	NW wind light breeze, 10C, Okta 2, dry. Excellent visibility
28/10/2024	VP3	14:30	17:30	3	PD	Dry, 14C, Light breeze northwest, Okta 3
29/10/2024	VP3	08:10	11:40	3.5	PD	Dry, 11C, light breeze northwest, Okta 6 - 8, cloud high, good visibility
30/10/2024	VP1	11:00	14:00	3	GG	Dry overcast day with light S wind 12dg excellent visibility.
30/10/2024	VP2	14:30	17:30	3	GG	Dry overcast day with light S wind 12dg excellent visibility.
31/10/2024	VP1	12:00	15:00	3	GG	Dry overcast day with light S wind 12dg excellent visibility.
31/10/2024	VP2	08:30	11:30	3	GG	Dry overcast day with light S wind 12dg excellent visibility.
27/11/2024	VP1	10:15	13:15	3	GG	Dry, 4C, light breeze northeast, Okta 0, excellent visibility
27/11/2024	VP2	14:00	17:00	3	GG	Dry, 4C, light breeze northeast, Okta 0, excellent visibility
27/11/2024	VP3	10:00	13:00	3	LP	Dry, 4C, light breeze northeast, Okta 0, excellent visibility
27/11/2024	VP3	13:30	14:30	3	LP	Dry, 4C, light breeze northeast, Okta 0, excellent visibility
28/11/2024	VP1	12:00	15:00	3	GG	Persistent rain moderate S wind 7dg poor visibility.
28/11/2024	VP2	08:30	11:30	3	GG	Persistent rain moderate S wind 7dg poor visibility.
17/12/2024	VP3	08:30	11:30	3	LP	Persistent drizzle moderate W wind 9dg moderate visibility.
18/12/2024	VP1	13:30	16:30	3	GG	Persistent drizzle moderate W wind 9dg moderate visibility.
18/12/2024	VP2	10:00	13:00	3	GG	Persistent rain and low cloud/fog 9dg light W wind poor visibility.
20/12/2024	VP1	12:00	15:00	3	GG	Cloud and rain clearing moderate SW wind 8dg good to excellent visibility.
20/12/2024	VP2	08:30	11:30	3	GG	Full cloud cover heavy rain moderate SW wind 6dg poor to moderate visibility.
29/12/2024	VP3	13:15	16:15	3	PD	Dry with showers light breeze SW, Okta 5, good visibility.
02/01/2025	VP1	12:00	15:00	3	JW	Raining, average vis, breezy

Date	VANTAGE POINT	Start Time	Finish time	Hours	Surveyor	Conditions
27/01/2025	VP3	14:00	17:00	3	LP	F5/6 South winds, 7 degrees, rain, visibility OK 500m or so, 100 cloud
28/01/2025	VP3	08:30	11:30	3	LP	6 degrees, light rain, F5/6 NW wind, 100% cloud, dawn-08:15 & dusk- 17.08, visibility good
29/01/2025	VP1	10:30	13:30	3	GG	Dry bright day with cloud clearing moderate NW wind 7dg excellent visibility.
29/01/2025	VP2	14:30	17:30	3	GG	Dry bright day with moderate NW wind 7dg excellent visibility.
31/01/2025	VP1	11:00	14:00	3	GG	Dry bright day with light WSW wind 6dg excellent visibility.
31/01/2025	VP2	07:30	10:30	3	GG	Dry bright morning with light WSW wind 2dg excellent visibility.
24/02/2025	VP3	14:00	17:00	3	LP	Dry, F4 SW, 9 degrees, 60% cloud, visibility good, dawn- 07.25 dusk-17.59
25/02/2025	VP3	08:30	11:30	3	LP	Dry, 9Cs, F2 NW, 100% cloud, drizzle, visibility moderate dawn-06:18, dusk-18.50
26/02/2025	VP1	08:00	11:00	3	GG	Dry bright day with moderate NW wind 5dg excellent visibility
26/02/2025	VP2	15:00	18:00	3	GG	Dry bright day with moderate NW wind occasional showers good to excellent visibility.
28/02/2025	VP1	10:00	13:00	3	GG	Dry bright day with light S wind 7dg excellent visibility.
28/02/2025	VP2	15:00	18:00	3	GG	Dry bright morning with light S wind 2dg excellent visibility.
24/03/2025	VP3	15:30	18:30	3	LP	11C, Sunny, dry,20% cloud, F2 NW winds, visibility good,
24/03/2025	VP3	08:20	11:20	3	LP	9 degrees, F2 NW, 100% cloud, drizzle, visibility moderate dawn-06:18, dusk-18.50
26/03/2025	VP2	15:30	18:30	3	GG	Dry overcast day with moderate SW wind 12dg excellent visibility.
26/03/2025	VP1	08:00	11:00	3	GG	Dry overcast day with moderate SW wind 12dg excellent visibility.
28/03/2025	VP2	10:40	13:40	3	GG	Dry bright day with moderate SW wind 12dg excellent visibility.
28/03/2025	VP1	07:00	10:00	3	GG	Dry bright day with moderate SW wind 12dg excellent visibility.

Table 9-2 Transect Survey Data - Breeding Season

Date	Transect	Surveyor	Start Time	Conditions
14/05/2020	T2	JW	10.00	Dry sunny light wind good visibility
14/05/2020	T1	JW	19.50	Dry sunny light wind good visibility
26/06/2020	T1	JW	14.05	Dry, sunny, moderate breeze, good visibility
26/06/2020	T2	JW	16.30	Dry, sunny, moderate breeze, good visibility
31/07/2020	T2	JW	12.30	Mod breeze, good visibility, showery, overcast
31/07/2020	T1	JW	20.35	Overcast, moderate breeze, showery, good visibility
16/04/2023	T2	PD	12.50	Dry, sunny spells, light breeze, Okta 5
16/04/2023	T1	PD	15.10	Dry, sunny spells, light breeze, Okta 5
16/04/2023	T4	PD	17.05	Dry, sunny spells, light breeze, Okta 5
16/04/2023	T3	PD	18.05	Dry, sunny spells, light breeze, Okta 5
11/05/2023	T1	GG	8.45	Dry with full cloud cover 12dg moderate NW wind excellent visibility.
12/05/2023	T4	GG	14.05	Dry day with some cloud 15dg light to moderate NW wind excellent visibility.
12/05/2023	T3	GG	15.20	Dry day with some cloud 15dg light to moderate NW wind excellent visibility.
23/05/2023	T2	PD	17.05	Dry. Okta 3. Calm. Excellent visibility
09/06/2023	T2	PD	12.20	Dry. Okta 3. Calm. Sunny. Excellent Visibility
09/06/2023	T1	PD	15.10	Dry. Okta 3. Calm. Sunny. Excellent Visibility
28/06/2023	T4	GG	12.00	Overcast morning cloud starting to clear 15dg moderate W wind excellent visibility.
29/06/2023	T3	GG	14.25	Dry day with cloud increasing 18dg moderate W wind excellent visibility.
20/07/2023	T4	GG	17.05	Dry day with some cloud moderate W wind 20dg excellent visibility.
20/07/2023	T3	GG	17.50	Dry day with some cloud moderate W wind 20dg excellent visibility.
20/07/2023	T1	PD	15.45	Dry day with some cloud moderate W wind 20dg excellent visibility.
20/07/2023	T2	PD	20.35	Dry day with some cloud moderate W wind 20dg excellent visibility.

Date	Transect	Surveyor	Start Time	Conditions
10/04/2024	T4	JW	11.10	Overcast dry, good visibility, except last 20min in fog, moderate breeze
11/04/2024	T3	JW	18.20	Cloudy, dry, moderate visibility
12/04/2024	T1	JW	14.30	Moderate breeze, dry, moderate cloud cover
16/04/2024	T2	PD	10.30	Dry, Wind light breeze, cloud cover Okta 4, temp. 13C
16/04/2024	T5	PD	16.15	Dry, Wind light breeze, cloud cover Okta 4, temp. 13C
17/05/2024	T2	PD	17.20	Overcast, dry, high cloud, mild 17C, light air, excellent visibility
20/05/2024	T3	PD	11.15	Sunny, broken cloud, Okta 3, 19C, calm, excellent visibility
20/05/2024	T5	PD	12.45	Sunny, broken cloud, Okta 3, 19C, calm, excellent visibility
20/05/2024	T4	PD	13.45	Sunny, broken cloud, Okta 3, 19C, calm, excellent visibility
30/05/2024	T1	JW	17.05	Broken cloud, mod breeze, warm, excellent visibility
19/06/2024	T1	PD	12.00	Dry, Okta 6, 20C, light air excellent visibility
19/06/2024	T3	PD	14.10	Dry, Okta 6, 20C, light air excellent visibility
19/06/2024	T4	PD	15.35	Dry, Okta 6, 20C, light air excellent visibility
19/06/2024	T5	PD	16.05	Dry, Okta 6, 20C, light air excellent visibility
26/06/2024	T2	LP	14.45	Dry 21C, Okta 2, light air, excellent visibility
20/07/2024	T4	JW	13.20	Overcast, showery, rain earlier, mod breeze, avg visibility
20/07/2024	T5	JW	13.50	Overcast, showery, rain earlier, mod breeze, avg visibility
30/07/2024	T1	PD	17.30	Dry, Okta 6, good visibility, mild 17C.
30/07/2024	T4	PD	19.10	Dry, Okta 6, good visibility, mild 17C.
30/07/2024	T5	PD	19.40	Dry, Okta 6, good visibility, mild 17C.
30/07/2024	T3	PD	20.50	Dry, Okta 6, good visibility, mild 17C.
06/08/2024	T2	PD	12.30	Overcast, Okta 8. dry, 21C, Light breeze

Table 9-3 Transect Survey Data - Non-breeding Season

Date	Transect	Surveyor	Start Time	Conditions
12/11/2020	T1	JW	14.35	Showers, windy, good visibility
13/11/2020	T2	JW	14.55	Showers, windy, good visibility
10/02/2021	T1	JW	13.00	Cold, showers (Snow), good visibility
10/02/2021	T2	GG	12.30	Cold, showers (Snow), good visibility
16/11/2023	T1	GG	9.30	Overcast but dry 9dg 15km NNW wind excellent visibility
17/11/2023	T3	GG	14.00	Light cloud 6dg light WSW wind excellent visibility.
17/11/2023	T4	GG	15.40	Light cloud 6dg light WSW wind excellent visibility.
30/11/2023	T2	PD	13.35	Dry. Bright Okta 2 -3. N Light Breeze. Excellent visibility
27/02/2024	T3	JW	12.40	Dry, sunny, breezy, clear, excellent visibility
27/02/2024	T2	PD	12.35	Dry, high broken cloud Okta 3, sunny, calm, excellent visibility
29/02/2024	T1	JW	11.05	Sunny, excellent visibility, breezy, cool, broken cloud
19/11/2024	T3	PD	8.15	Overcast, light breeze, dry, excellent visibility
19/11/2024	T4	PD	9.40	Overcast, light breeze, dry, excellent visibility
19/11/2024	T5	PD	10.15	Overcast, light breeze, dry, excellent visibility
19/11/2024	T2	PD	13.35	Overcast, light breeze, dry, excellent visibility
27/11/2024	T1	GG	9.10	Dry, cold, light breeze northeast, excellent visibility
19/02/2025	T3	PD	8.00	Dry, sunny, breezy, clear, excellent visibility
19/02/2025	T2	PD	14.50	Dry, calm, high cloud, excellent visibility
19/02/2025	T1	PD	10.15	Dry, calm, high cloud, excellent visibility
19/02/2025	T4	JW	8.00	Dry, calm, high cloud, excellent visibility

Table 9-4 Hinterland Survey Data

UID	Date	HVP	Observer	Weather	Species	No. Birds	Time	Zero_ Sec	Secs_ 15	Secs_ 30	Secs_ 45	Secs_ 60	Secs_ 75	Secs_ 90	Secs_ 105	Secs_ 120	Secs_ 135	Secs_ 150	Secs_ 165	Secs_ 180	Secs_ 195	Secs_ 210	Secs_ 225	Secs_ 240	Flight Description
1	17/04/2023	1	PD	Dry. Brlight. Okta 3/4. Light air. Excellent Vis	NFL (No flight line)																				
2	17/04/2023	2	PD	Dry. Bright. Okta 3/4. Light air. Excellent Vis	BZ	1	14:23	3	4	3	2														
4	17/04/2023	2																							
5	21/05/2023	3	JW	Dry, Breeze SW, Excellent Visibility	LB	1	16:53	4	4	4															
6	08/06/2023	1	PD	Dry. Calm. Sunny. excellent Visibility	K.	1	1724	2	1	1	1														
7	09/06/2023	2	PD	Dry. Calm. Sunny. excellent Visibility	NFL																				
8	26/06/2023	2	JW	Dry, overcast, excellent visibility	BZ	1	10:16	3	3	3	2	2													
9	26/06/2023	2	JW	Dry, overcast, excellent visibility	BZ	1	11:42	2	3	3	2	1													
10	20/07/2023	3	JW	Dry mod wind W wind warm excellent visibility.	NFL																				
11	20/07/2023	1	JW	Dry mod wind W wind warm excellent visibility.	NFL																				
13	02/08/2023	3	PD	Dry. Cloudy. Calm. excellent Visibility.	LB		17:36	4																	
14	02/08/2023	3	PD	Dry. Cloudy. Calm. excellent Visibility.	K.		18:02																		
15	02/08/2023	3	PD	Dry. Cloudy. Calm. excellent Visibility.	LB		18:23	4	4																
16	30/11/2023	1	PD	Dry, bright, breezy, excellent visibility	NFL																				
17	04/12/2023	2	GG	Dry, bright, mod. breeze NW	LB	4	09:08	4	4	4															
18	04/12/2023	2	GG	Dry, bright, mod. breeze NW	LB	1	09:52	3	3	4	4														

UID	Date	HVP	Observer	Weather	Species	No. Birds	Time	Zero_ Sec	Secs_ 15	Secs_ 30	Secs_ 45	Secs_ 60	Secs_ 75	Secs_ 90	Secs_ 105	Secs_ 120	Secs_ 135	Secs_ 150	Secs_ 165	Secs_ 180	Secs_ 195	Secs_ 210	Secs_ 225	Secs_ 240	Flight Description
19	07/12/2023	2	GG	Rain, poor visibility	BZ	1	10:02	1																	
20	30/01/2024	1	PD	Dry, Okta 3, excellent visibility	NFL																				
21	27/02/2024	1	JW	Dry, sunny, breezy, clear, excellent visibility	NFL																				
22	27/02/2024	2	PD	Dry, Okta 3, excellent vis	NFL																				
23	10/04/2024	3	JW	Dry, fog spreading, vis decreased during watch	NFL																				
24	11/04/2024	2	JW	Dry, low cloud, fog, low visibility	NFL																				
25	16/04/2024	1	PD	Dry, light breeze, excellent visibility	K.	1	12:18	2	1																
26	26/04/2024	2	PD	Dry, breeze, excellent visibility	NFL																				
27	30/04/2024	3	PD	Dry light breeze, cloudy, excellent visibility	NFL																				
28	19/06/2024	1	PD	Dry, calm, sunny, low cloud, excellent visibility	MA	1	10:48																		
29	19/06/2024	1	PD	Dry, calm, sunny, low cloud, excellent visibility	BZ	1	11:41																		
30	30/06/2024	3	JW	Dry, breezy, sunny spells, excellent visibility	NFL																				
31	30/07/2024	1	PD	Dry, high cloud cover, good visibility,	K.	1	16:09	2	2	1															
32	30/07/2024	1	PD	Dry, high cloud cover, good visibility,	BH	5	16:15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Small flock loafing
33	30/07/2024	1	PD	Dry, high cloud cover, good visibility,	LB	12	16:20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Small flock loafing

UID	Date	HVP	Observer	Weather	Species	No. Birds	Time	Zero_ Sec	Secs_ 15	Secs_ 30	Secs_ 45	Secs_ 60	Secs_ 75	Secs_ 90	Secs_ 105	Secs_ 120	Secs_ 135	Secs_ 150	Secs_ 165	Secs_ 180	Secs_ 195	Secs_ 210	Secs_ 225	Secs_ 240	Flight Description
35	30/07/2024	2	PD	Dry, high cloud cover, good visibility,	LB	3	18:46	4	4	4	4	4	4	4											
36	30/07/2024	2	PD	Dry, high cloud cover, good visibility,	BZ	2	18:51	3	3	2	1														
37	30/07/2024	2	PD	Dry, high cloud cover, good visibility,	LB	1	19:12	2	2	3	3	2													
38	30/07/2024	2	PD	Dry, high cloud cover, good visibility,	BH	8	19:42	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Small flock landed in field
39	30/07/2024		PD																						

Appendix A-III PLANNING APPLICATIONS FOR IN-COMBINATION ASSESSMENT

Granted and Undecided Applications Within C.10km of the Subject Site January 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 no. wind turbines and ancillary works.	Castlebanny, Co. Kilkenny	26/09/2022
Kilkenny County Council	2360360	Permission for development situated in the townland of Ballyfasy Upper, Co. Kilkenny. Permission is sought for the continued use of an existing, temporary lattice type meteorological mast, 80m in height.	Ballyfasy Upper , Ballyfasy , Co. Kilkenny	02/10/2023
Kilkenny County Council	13353	The development will consist of the erection of 1. no.500 kw wind turbine (hub height 65.00m), and the construction of a 25.00 sq.m electrical sub-station, site access road, and all ancillary works.	Ballinclare , Glenmore , Co. Kilkenny	12/09/2013
Kilkenny County Council	2560391	a 10 Year Planning Permission for a solar farm with a total area of circa 189 hectares in the townlands of Atateemore or Blackneys, Ballyhobuck, Ballyrahan, Carriganurra, Charlestown, Davidstown, Drumdowney Lower, Drumdowney Upper, Gorteens, Grogan, Kilmurry, Nicholastown, Rathpatrick, Scartnamoe, Tinvaucoosh and Treanaree in County Kilkenny. The solar farm will consist of solar panels on ground mounted frames, 27 no. single storey electrical inverter/transformer stations, 5 no. single storey spare parts containers, 3 no. Ring Main Units, 5 no. weather stations, underground electrical ducting and cabling within the development site, private lands and within the L3429, L7523, L7563, L7469, L3407, L3414, L34144, L7466, L3406, L7483, L3415, N25 and N29 public roads to connect solar farm field parcels, security fencing, CCTV, access tracks, 7 no. watercourse/drain deck crossings and 4 no. horizontal directional drill crossings (under the N25 and N29 public roads and the Luffany River), temporary construction compounds, landscaping and all associated ancillary development and drainage works. Construction and operational access will be via 7 no. existing entrances from the L3429, L7469, L7466, L4783 and L34142 which will be subject to entrance upgrade works. Separate construction phase access options are proposed for Parcel 4 via Port of Waterford and the L4783. The operational lifespan of the solar farm will be 40 years and planning permission is requested for this duration. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application	In the townlands of Atateemore or Blackneys Bal	Live Case
Kilkenny County Council	Acp Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Electrical and Water Services				
Kilkenny County Council	1310	Permission to construct an extension to existing 20kV electrical substation building including installation of a septic tank with associated percolation area and the provision of a borehole well water supply.	Ballymartin , Mullinavat , Co. Kilkenny	07/03/2013
Kilkenny County Council	23145	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.	Raheen , Rosbercon , Co. Kilkenny	08/12/2023
Wexford County Council	20181228	Permission for the development at the existing great island to kilkenny 110kV overhead line which is approximately 49 kilometres long. Approximately 2.6km of the existing circuit is located within the functional area of Wexford county council with approximately 46.4km located within County Kilkenny. The uprate of the existing circuit within County Wexford will be undertaken within the townland of great island, between structure em1 at great island substation and structure int15 near the administrative border between counties Wexford and Kilkenny. A natura impact statement (nis) forms part of this application.	Greatisland, Kilmokea	01/02/2019
Wexford County Council	20151282	Permission for renewal works to the existing 38kV overhead line spanning the river barrow to the north of O Hanrahan Bridge in New Ross, County Wexford. In total five structures will be replaced as part of the proposed works. The overhead line falls within the administrative areas of County Kilkenny and County Wexford.	Rosbercon, Annefield, Ardcross & Castlemoyle, N	24/02/2016
Kilkenny County Council	15825	for renewal works to the existing 38kV overhead line spanning the River Barrow to the north of O'Hanrahan Bridge in New Ross, County Wexford.	New Ross ,	25/02/2016
Wexford County Council	20181585	Planning permission for a 63.3sqm single storey extension to the existing electr	Butlersland, New Ross Rural	12/02/2019
Wexford County Council	20240650	Permission for the development of a long duration energy storage facility	Knockmullin, New Ross Rural	23/10/2024
Kilkenny County Council	18573	for develop at existing Grt Isl-Kk 110kV Overhead Line, approx 49kms long. Approx 46.4km of existing circuit located within functional area of CoKk with approx 2.6km located within Co Wex. The uprate works within CoKk will be undertaken between structure INT1.	Great Island to , Kilkenny Overhead Line	08/03/2019

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
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 Statement (NIS) has been prepared and will be submitted with the application.	Marshmeadows, New Ross Rural	30/08/2023
Wexford County Council	ACP Ref. 318103	Development of a new electricity circuit. A Natura Impact Statement (NIS) was submitted with the application.	New Ross, Co. Wexford	13/11/2024
Wexford County Council	ACP Ref. 308906	Proposed development will form part of the Greenlink Interconnector and will consist of the development of a new converter station, tail station, MV substation and 23km of high voltage direct current (JVDC) electricity cables, 420m of high voltage alternating current (HVAC) cables, 23.42km of fibre optic cable and all associated site works with an overall proposed development site area of 83.8ha.	Ramstown in Co. Wexford	23/06/2021
Kilkenny County Council	13444	to relocate a borehole well for water supply previously permitted under Pl. Ref.: 13/10.	Ballymartin , Mullinavat , Co. Kilkenny	19/11/2013
Kilkenny County Council	16200	to construct a new water reservoir; perimeter fencing and all ancillary siteworks.	Flemingstown , Glenmore , Co. Kilkenny	30/05/2016
Kilkenny County Council	19221	for drilling of a temporary trial well and carrying out associated works on a site adjacent to Glenmore Water Treatment Plant. A Natura Impact Statement (NIS) will be submitted to the Planning Authority with the application.	Glenmore Water Treatment Plant , Flemingstown	29/05/2019
Kilkenny County Council	22513	for the change of use of land to extend the service station carpark to enable the installation of a modular substation and ancillary site development works.	Inver Service Station , Townland of Rathpatrick ,	27/09/2022
Kilkenny County Council	ACP Ref. 245770	Upgrade Inistioge water supply scheme watermain from Grennan to reservoir Ballygub, Inistioge at Grennan Thomastown.	Ballyduff, Kilmacshane, Kilcross and Ballygub Co.	24/03/2016
Wexford County Council	20250452	Permission for a proposed single storey ESB substation and switch room building and all associated site works.	Stokestown, Oldcourt	06/06/2025
Kilkenny County Council	2560074	for the construction of a new wastewater treatment system and a proposed change to the site boundary situated	Rathpatrick , Slieverue , Co. Kilkenny	23/06/2025
Kilkenny County Council	Acp Ref. 315856	27 metre telecommunications support structure and associated site works.	Ballyrobin, Ferrybank, Co. Kilkenny	07/03/2024
Wexford County Council	Acp Ref. 318103	Development of a new electricity circuit. A Natura Impact Statement (NIS) was submitted with the application.	New Ross, Co. Wexford	13/11/2024
Kilkenny County Council	Acp Ref. 245770	Upgrade Inistioge water supply scheme watermain from Grennan to reservoir Ballygub, Inistioge at Grennan Thomastown.	Ballyduff, Kilmacshane, Kilcross and Ballygub Co.	24/03/2016
Roadworks				
Kilkenny County Council	1681	to construct a farm/forestry roadway exiting onto the R704 road and all associated site works.	Ballynooney West , Mullinavat , Co. Kilkenny	12/04/2016
Kilkenny County Council	LAC1608	The main features of the existing n25/r733 priority junction to a conventional roundabout layout. The widening of footpaths on the immediate approach roads to the proposed roundabout. The provision of ancillary works including road drainage, public lighting, the installation of roadmarking, road studs and signage. Landscaping works.	N25/R733 Oaklands Roundabout, New Ross	12/12/2016
Kilkenny County Council	LAC1611	The development of the disused railway line, railway bridge and railway tunnel extending from Rosbercon, New Ross to Mountelliot as a cycle and pedestrian route. The route will ultimately form part of the planned national greenway network link, connecting Waterford, Wexford, Kilkenny And Carlow to Dublin and beyond. This section also forms part of the looped walk returning to new ross along the Craywell road/footpath. The work will include the following: the clearance of vegetation on the rail line corridor, retaining boundary hedgerows and boundary vegetation; the laying of a 3 metre wide bituminous surface on a crushed stone base to form the cycle and footpath track; repair and upgrade of existing drains; the upgrade and repair of existing bridges so as to accommodate the cycle/pedestrian route; the installation of barriers for the safety of greenway users; stock proof fencing where required; provision of agricultural crossings and security fencing; screen fencing and/or screen planting.	New Ross - Redbridge - Mountelliot Greenway	13/03/2017
Kilkenny County Council	17456	Permission for the development of a 24 hour opening Motorway Service Area.	At R704 , Garrandarragh , Mullinavat	13/11/2017
Kilkenny County Council	17655	to construct new vehicular entrance into forestry land and associated site works.	Farnoge East , Mullinavat , Co. Kilkenny	14/06/2018
Kilkenny County Council	18226	to construct a new entrance to my lands for use by forestry and all associated site works.	Ballinlammy , Glenmore , Co Kilkenny	28/05/2018
Kilkenny County Council	2360198	construction of a livestock underpass, effluent holding tank and all associated site works.	Charlefield Tinnaslatty , The Rower , Co. Kilkenny	13/11/2023
Kilkenny County Council	14390	to construct a cattle underpass under the L8259 public road and all associated site works.	Knockmoylan , Mullinavat , Co. Kilkenny	15/01/2015
Kilkenny County Council	LAC1502	Realignment of collapsed section of local tertiary road l40274.	Ballykelly, New Ross	27/04/2015
Kilkenny County Council	16316	for a new forestry access road to service the existing forestry lands and all associated works.	Ballynooney , Mullinavat , Co. Kilkenny	11/01/2017

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	1775	for the construction of a new entrance from public roadway onto forestry lands, to comprise the provision of splayed access, clear visibility sightlines, associated setting back of adjacent roadside boundaries, provision of associated surface water drainage, fences, finished hardcored structure to access area, closing of existing entrances and all associated siteworks.	Ballintlea , Mullinavat , Co. Kilkenny	06/04/2017
Kilkenny County Council	17664	for the construction of a new entrance from public roadway onto forestry lands to comprise the provision of splayed access, clear visibility sightlines, associated setting back of adjacent roadside boundaries, provision of associated surface water drainage, fences, finished hardcored structure to access area, and all associated siteworks.	Bishopmountain , Mullinavat , Co. Kilkenny	30/11/2017
Kilkenny County Council	ACP Ref. 310085	Whether the selective felling and clearing of trees and construction of a new road access corridor to and from the public road within a forest plantation for purposes other than for forestry, and the development of access road within a forest plantation.	Glenpipe, Tullogher, Co. Kilkenny.	31/08/2021
Kilkenny County Council	18287	for a new forestry roadway & entrance and all ancillary works.	Ballyfasy Upper , Glenmore , Co Kilkenny	23/07/2018
Kilkenny County Council	19705	for the construction of a road underpass and associated site works for agricultural purposes.	Brownstown , New Ross , Co. Kilkenny	12/08/2020
Kilkenny County Council	22452	for the construction of a Livestock Underpass beneath the public road between the crossroads and existing farmyard alongside all associated site works.	Grogan , Glenmore , Co. Kilkenny	22/11/2022
Kilkenny County Council	22725	for the construction of a livestock underpass under the L-3421-30 local road, soiled water tank and ancillary works.	Ballykenna , Tullogher , Co. Kilkenny	30/06/2023
Kilkenny County Council	1895	for development at a site. The development will consist of the widening of an existing entrance connecting to the public road (to form a bellmouth entrance), to facilitate occasional access to an existing forestry plantation, and all ancillary site deve	Ballymartin , Mullinavat , Co Kilkenny	10/05/2018
Kilkenny County Council	2560074	for the construction of a new wastewater treatment system and a proposed change to the site boundary situated	APPLICATION FINALISED	23/06/2025
Industrial				
Kilkenny County Council	15395	for the proposed erection of one number industrial/warehouse unit, external signage and all associated site development works.	Raheen , New Ross , Co. Kilkenny	14/03/2016
Wexford County Council	20120391	Extend the existing boiler flue in height by 10 metres and construct an additional flue adjacent to same for the purpose of servicing a second boiler unit.	Marshmeadows, New Ross Rural	25/10/2017
Kilkenny County Council	14533	for Full Authorised Treatment Facility (ATF) status and storage of baled municipal waste and associated site works at an existing waste metal processing and storage facility.	Raheen , Rosbercon , New Ross	16/11/2015
Kilkenny County Council	14541	for development at a site of circa 8.27ha. The site comprises an existing coal processing and bagging facility where coal is imported primarily by ship for processing and distribution throughout Ireland.	Raheen and Annaghs , New Ross , Co. Kilkenny	23/06/2015
Wexford County Council	20150325	Permission for development at ida business park, butlersland, new ross, co. Wexford.	Butlersland, New Ross Rural	03/06/2015
Kilkenny County Council	15366	is sought within part of an existing quarry for a C&D recycling facility for the recycling of construction and demolition waste and for the importation and recovery of non-hazardous soils, subsoil and other similar material.	Catsrock & Rathglish Townslands , Glenmore , Co	27/06/2016
Wexford County Council	20160449	A construction and demolition (c&d) recycling facility where certain classes of construction and demolition waste (concrete, stone, block, brick, soils, etc) are transported to site and periodically crushed, screened and stockpiled using mobile plant to produce a reusable construction / domestic / agricultural product, placement of landscaping and all associated site works. A natura impact statement has been submitted with the planning application.	Marshmeadows, New Ross Rural	20/07/2016
Kilkenny County Council	16399	for the construction of an industrial building over an existing dry dock, concrete aprons and associated works.	Raheen , Rosbercon , Co. Kilkenny	11/01/2017
Wexford County Council	20170549	Permission for change of use of former childrens play centre to industrial dry storage use and retention of alterations to front facade and all associated site works (previous planning registration no: 20033181) at units 13 & 14 Woodbine Business Park, Hewitsland, New Ross, Co. Wexford.	Hewitsland, New Ross Rural	23/06/2017
Wexford County Council	17788	to demolish all buildings on the Albatros factory site. Building materials will be segregated. Steel frames will be removed from site and recycled. Concrete materials will be crushed and retained on site.	Raheen , Rosbercon , New Ross	19/02/2018
Kilkenny County Council	20181399	Permission for retention of two (2 no.) Pay-to-use waste compaction units at Knockavilla service station, Knockavilla, New Ross, co. Wexford. This application relates to development which requires a waste licence.	Knockavilla, New Ross Rural	05/12/2018
Kilkenny County Council	20127	for the importation of soil & stone (LOW Code 17 05 04) for the raising of an agricultural field/ restoration of a disused quarry in order to improve the agricultural output of the field/disused quarry.	Kiltorcan , Ballyhale , Co. Kilkenny	25/03/2021
Kilkenny County Council	22264	for 1. a mobile crushing plant 2. A reduction in size of the Compound area & parking areas as was granted under planning permission 20/485 & all ancillary works.	Ballymountain , Slieverue , Co Kilkenny	05/01/2023
Wexford County Council	1313	for the material change of use from temporary storage only of ferrous and non ferrous metals to processing (shearing and sorting of metals) and storage of metals and hazardous end of life vehicles (maximum of 1 day storage) prior to removal off site.	Raheen , Rosbercon , New Ross	01/10/2013
Wexford County Council	20180348	Permission for development consisting of the demolition and removal of decommissioned tanks, pipework, loading stand and all associated fixtures and fittings. The proposed demolition works are not to facilitate the development of a facility that would require environment impact assessment in the future.	Marshmeadows, New Ross Rural, Wexford.	10/05/2018
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 at marshmeadows, new ross, co. Wexford.	Marshmeadows, New Ross Rural, Wexford	27/04/2020
Kilkenny County Council	ACP Ref. 246963	Permission for a recycling facility for the recycling of construction and demolition waste and for the importation and recovery of non-hazardous soils within part of the existing quarry.	Catsrock and Rathglish Townslands, Glenmore, C	02/03/2017

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Kilkenny County Council	ACP Ref. 315686	Mobile crushing plant and a reduction in size of the Compound area & parking areas as was granted under planning permission 20/485.	Ballymountain, Slieverue, Co Kilkenny.	16/04/2024
Kilkenny County Council	ACP Ref. 247592	Permission/retention permission is sought for retention of an existing quarry and extension to the quarry with a proposed extraction area of .80ha and all associated site works.	Castlegannon, Ballyhale, County Kilkenny.	03/04/2017
Kilkenny County Council	1641	for development. The development will consist of and permission/retention permission is sought for: retention of an existing quarry with an extraction area of approximately 1.20 ha. A lateral extension to the quarry with a proposed extraction area of ap	Castlegannon , Ballyhale , Co. Kilkenny	03/04/2017
Kilkenny County Council	16700	for development. The development will consist of continuation of quarrying activities within the red line application area of 62.04 ha to include the extension of the existing excavation by an additional 2 x 15m high benches from the current floor level	Aglish North , Granny , Kilmacow	02/05/2017
Kilkenny County Council	2360426	for a 7-year planning permission for 3 No Bulk Stores, a marshalling yard and site works including earthworks, road works, entrance, gates and fencing, concrete paving, water services, drainage works, site lighting and landscaping. The stores will be us	GORTEENS , SLIEVERUE , CO KILKENNY	18/10/2024
Wexford County Council	20141038	ERECTION OF A CIRCA 2400 M2 INDUSTRIAL UNIT AND ASSOCIATED SITE WORKS	BUTLERSLAND, NEW ROSS RURAL	17/04/2020
Kilkenny County Council	2460100 (ACP Ref 321806)	for the extension of Kilmacow Quarry at Aglish North, Granny, Kilmacow, County Kilkenny, authorised via planning reference 16/700, to adjoining agricultural lands to the east with known quality reserves of aggregates. The extension will cover an area of	Kilmacow , Granny Aglish North , Kilkenny	26/09/2025
Kilkenny County Council	2460103 (ACP Ref. 321962)	for development on lands with a site area of approximately 11.57ha located at Gorteens, Co. Kilkenny. The development will consist of the construction of an integrated plasterboard manufacturing facility, incorporating a production plant with access fro	Gorteens , Slieverue , Co. Kilkenny	01/08/2025
Wexford County Council	20240934	Permission for (1) the construction of 3 no. warehouses providing a total	Portersland, New Ross Rural	21/10/2024
Wexford County Council	20231571	Permission for the construction of a warehouse storage building extension to sid	Marshmeadows, New Ross Rural	13/12/2024
Kilkenny County Council	2560233	constructing 2 no. industrial warehouse blocks for bulk storage, with Block A housing 4 no. single storey storage units (floor area - 3,488.4m2) and Block B housing 4 no. single storey units (floor area - 8446.2m2), new weighbridge and cabin, new internal access roads, retaining walls and boundary fencing and all ancillary works	Belview Port , Gorteens , Co. Kilkenny	25/07/2025
Kilkenny County Council	Acp Ref. 315686	Mobile crushing plant and a reduction in size of the Compound area & parking areas as was granted under planning permission 20/485.	Ballymountain, Slieverue, Co Kilkenny.	26/03/2024
Kilkenny County Council	Acp Ref. 321806	Extension of Kilmacow Quarry authorised via planning reference 16/700. The application is accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS).	Aglish North, Granny, Kilmacow, Co. Kilkenny	26/09/2025
Kilkenny County Council	Acp Ref. 246963	Permission for a recycling facility for the recycling of construction and demolition waste and for the importation and recovery of non-hazardous soils within part of the existing quarry	Catsrock and Rathglish Townslands, Glenmore, C	02/03/2017
Kilkenny County Council	Acp Ref. 247592	Permission/retention permission is sought for retention of an existing quarry and extension to the quarry with a proposed extraction area of .80ha and all associated site works.	Castlegannon, Ballyhale, County Kilkenny.	03/04/2017
Residential				
Wexford County Council	20181348	Planning permission for the proposed erection of no. 9 fully serviced town houses.	New Ross, New Ross Urban	03/05/2019
Kilkenny County Council	19666	to construct a new short stay / holiday camping park consisting of 11 no. glamping pods, new bore well, new sewerage treatment system / percolation area and parking area, including all additional site works	Kiltorcan , Ballyhale , Co. Kilkenny	04/02/2020
Kilkenny County Council	ACP Ref. 309918	Construction of 6 dwellings as an extension to partially completed housing development.	Castlehyde Park , Millbanks , New Ross, Co Kilkenny	21/10/2022
Wexford County Council	20200844	Construction of 48 residential dwellings.	Healysland, New Ross Rural, Co. Wexford.	11/09/2020
Kilkenny County Council	ACP Ref. 306289	Housing Development of 25 houses.	Dangan, Kilmacow, Co. Kilkenny	08/12/2020
Wexford County Council	20160083	PERMISSION FOR THE ERECTION OF 5 NO DWELLING HOUSES, BOUNDARY WALLS AND ASSOCIATE WORKS	NEW ROSS, NEW ROSS URBAN	26/04/2016
Kilkenny County Council	19731	This development will consist of the construction of 4 no. 1 bedroom single storey dwelling houses, 15 no. 2 bedroom two storey dwelling houses, 6 no. 3 bedroom two storey dwelling houses, proposed entrance and access road and all associated ancillary si	Dangan , Kilmacow , Co Kilkenny	08/12/2020
Kilkenny County Council	19160	A) Outline Planning Permission for 3 no. houses on proposed serviced sites B) Planning Permission for 5 No. detached 2 storey houses and all associated site development works including internal roads, new site entrance, connections to existing sewer and	Dangan , Kilmacow , Co Kilkenny	21/08/2019
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 h	Millbanks , New Ross , Co Kilkenny	12/08/2025
Kilkenny County Council	17315	for development at this site which will consist of construction of 12 No. 2 storey, 2 bedroom semi-detached dwellings, access road, car parking, closure of existing entrance onto public road (N25) and all associated site works	Belmount , Ferrybank , Co. Kilkenny	23/02/2018
Kilkenny County Council	17658	for demolition of 3 No. existing out buildings and the proposed erection of 11 No. dwellings consisting of 3 No. two storey 3 bed end terraced dwellings, 4 No. two storey 2 bed mid-terraced dwellings, 2 No-two storey 3 bed semi-detached dwellings, 1 No t	Lower Kilmacow , Kilmacow , Co. Kilkenny	14/11/2018

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Kilkenny County Council	20413	for the erection of 6 no. 2 storey semi-detached dwellings as an extension to existing partially completed housing development, all associated site development works including storm attenuation tank and alterations to the existing site entrance from that	Castlehyde Park , Millbanks , New Ross	21/10/2022
Kilkenny County Council	2360323	for the proposed erection of 4 number fully serviced 2 storey detached dwellings, 4 number detached single storey garages, 2 number proposed vehicular and pedestrian entrances, boundary treatments to include removal of existing stone wall to front of sit	Milepost , Slieverue , Co. Kilkenny	13/05/2024
Wexford County Council	20220880	Permission for the construction of 48 No. dwellings, comprising	Hewitsland, New Ross Rural	11/01/2023
Wexford County Council	20230644	Permission is sought for the construction of 42 no residential dwellings	Healysland, New Ross Rural	18/12/2023
Kilkenny County Council	21574	to carry out the site development works for five residential sites (namely Chesnut Cresent_Phase 1), together with installation of all necessary services, including connection to and from existing services on The Beeches housing site (planning Ref 05/217	The Beeches , Mount Sion , Ballyrobin Ferrybank	30/12/2021
Kilkenny County Council	23117	for the construction of 35 no. residential units comprising the following: 1 no. 2 storey detached Duplex unit, comprising of 2 no. 1 bed units Type E2 & 2 no. 2 bed units Type E1 on ground floor and 2 no. 1 bed units Type F2 & 2 no. 2 bed units Type F	Rockshire Road , Ballyrobin , Ferrybank	23/12/2024
Wexford County Council	20230672	Permission to construct 2 no. one-bedroomed apartments, 6 no. two-bedroomed	New Ross, New Ross Urban	25/10/2023
Kilkenny County Council	ACP Ref. 318813	8 duplex and 27 houses with associated site works.	Rockshire Road, Ballyrobin, Ferrybank, Co. Kilkenny	23/12/2024
Kilkenny County Council	2460364 (ACP Ref. 321555)	Construction of 15 houses with all associated site works.	Dangan, Kilmacow, Co. Kilkenny	Undecided
Wexford County Council	20250169	Permission to demolish existing warehouse (Block B) which adjoins existing dwelling (Block A) to Priory Street elevation and existing 2 storey over basement extension to rear of existing dwelling (Block A), and for the demolition of (Block C) existing warehouse/factory building to rear of property (accessed from Priory Lane). The following is further proposed; i) To construct a one storey over basement level extension to rear of existing dwelling (Block A). ii) For the modifications of existing windows and the addition of 4 no. patio doors with balconies to the rear of existing dwelling (Block A). iii) To construct (Block B) - (on the site of the former warehouse which adjoins the existing Block A dwelling) a new 4 storey over basement apartment building consisting of 1 no. Duplex 2 bedroom apartment on basement and ground floor level, with rear balcony, 1 no. one bedroom apartment with rear balcony and 3 no. two bedroom apartments, with rear balconies, and a communal bin store at ground floor level also. iv) To further construct (Block C - a three storey building) (on the site of the former warehouse/factory building to the rear of the property) which will comprise of 4 no. 1 bedroom apartments at ground floor level, 4 no. 2 bedroom duplex town houses over first and second floor, with 1 no. adjoining two storey 3 bedroom townhouse. An external communal bin store area and bicycle storage/parking facility is proposed to the rear of the property (to the front of Block C). v) 2 no. public open spaces (green areas) are also proposed to the rear of the property to provide for required amenity space, and bin truck and fire truck access turning point. All development and construction shall incorporate all necessary and associated site works	New Ross, New Ross Urban	04/04/2025
Kilkenny County Council	2560050	to refurbish and extend our dwelling. Works will include to construct a single storey extension to the front, a single storey extension to the rear, Elevation changes and to connect the dwelling to the public sewer, along with all associated site development works	Gorteens , Slieverue , Co. Kilkenny	06/05/2025
Kilkenny County Council	2534	to erect a dwelling house	Kilmurry , Slieverue , Co Kilkenny	25/07/2025
Kilkenny County Council	2560368	to construct a single storey dwelling with detached domestic garage, on-site sewerage treatment, new entrance onto the public road and all associated works	Ballynamorahan , Kilmacow , Co.Kilkenny	15/09/2025
Kilkenny County Council	2560370	to construct a dwelling house, sewage treatment system and percolation area, including all necessary site works	Scart , Mullinavat , Co. Kilkenny	15/10/2025
Kilkenny County Council	2560372	to construct a single storey dwelling with attached domestic garage, on-site sewerage treatment, entrance onto the public road and all associated works	Scart , Mullinavat , Co.Kilkenny	17/09/2025
Kilkenny County Council	2560409	for the construction of a single storey dwelling, detached domestic garage, proprietary treatment system and all ancillary site works	Cloone , Mullinabro , Kilkenny	Live Case
Kilkenny County Council	2591	to erect a dwelling house, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	Live Case
Kilkenny County Council	ACP Ref. 301975	Demolition of 3 existing out buildings and erection of 11 dwellings	Lower Kilmacow, Kilmacow, Co. Kilkenny	14/11/2018
Kilkenny County Council	ACP Ref. 303622	Demolition and reconstruction of existing house	Ballinagoth Quay, Rathsnagadan, Inistioge, Co. Kilkenny	24/06/2019
Kilkenny County Council	Acp Ref. 304920	A new dwelling and domestic wastewater treatment system and percolation area including refurbishment works to an existing protected structure and all associated site works.	Granny, Kilmacow, Co Kilkenny.	10/01/2020
Kilkenny County Council	Acp Ref. 306289	Housing Development of 25 houses	Dangan, Kilmacow, Co. Kilkenny	08/12/2020
Wexford County Council	Acp Ref. 307326	Construction of house	Poulmaloe, Whitechurch, New Ross, Co. Wexford.	Case is due to be decided by 08/12/2020
Wexford County Council	Acp Ref. 309555	Permission for the demolition of an existing single storey garage to side of an existing dwelling, erection of a two storey extension to the rear of an existing dwelling, raising of the ridge level on existing dwelling and all associated site works	The Hollow, Camblin, New Ross, Co. Wexford	04/06/2021
Kilkenny County Council	Acp Ref. 309918	Construction of 6 dwellings as an extension to partially completed housing development.	Castlehyde Park , Millbanks , New Ross, Co Kilkenny	21/10/2022

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Kilkenny County Council	Acp Ref. 318813	8 duplex and 27 houses with associated site works.	Rockshire Road, Ballyrobin, Ferrybank, Co. Kilkenny	23/12/2024
Kilkenny County Council	Acp Ref. 322838	Construction of house	Killeen , Inistioge , Co Kilkenny	29/09/2025
Kilkenny County Council	Acp Ref. 247440	Retain and complete a domestic garage.	Ashbourne', Kilmurry, Slieverue, Co.Kilkenny.	01/02/2017
Other				
Wexford County Council	LAC1902	Proposed construction of a new fire station.	Hewitsland, New Ross, Co. Wexford	08/04/2019
Wexford County Council	LAC1905	The development of a public realm area in The High Hill in New Ross.	The High Hill, New Ross, Co Wexford	08/07/2019
Wexford County Council	20191332	Permission for the construction of seven ground floor mixed use commercial units.	Verosland, New Ross Urban, Wexford	15/11/2019
Kilkenny County Council	2215	for the proposed demolition of existing single storey commercial building and the proposed erection of a fully serviced 2 storey end terrace 2 bedroom townhouse, boundary treatments, together with all associated site development works, all	Main Street , Mullinavat , Co Kilkenny	08/04/2022
Kilkenny County Council	18110	for development of silage base with walls, concrete apron, loose cattle shed and associated site works at	Clogga , Mooncoin , Co. Kilkenny	14/05/2018
Kilkenny County Council	18501	to erect silage base and all associated works at	Ballyhimmin , Mullinavat , Co. Kilkenny	12/10/2018
Kilkenny County Council	1718	to erect spectator stand, first floor room to existing machinery shed for use as a gymnasium and all associated works	Ballynaraha , Glenmore , Co. Kilkenny	12/04/2017
Kilkenny County Council	17284	is sought for the construction of a 4 bay, mono-pitch carport of area 53.65Sq.m, the partial realignment of the existing driveway (entrance unaffected), replacement of existing timber fence with rendered blockwork wall, the removal of existing porch roof	Arderra , Mooncoin , Co. Kilkenny	28/08/2017
Kilkenny County Council	2360109	a four-lane vehicle testing facility and associated offices , together with all associated site land landscaping works	Deerpark , Mullinavat , Co Kilkenny	02/04/2024
Kilkenny County Council	2460111	for the construction of an indoor arena and associated site works	Lennaght , The Rower , Co Kilkenny	20/12/2024
Wexford County Council	20150563	PERMISSION FOR THE PROPOSED FILLING OF SITE WITH CLEAN STONE, SUBSOIL AND TOPSO	PORTERSLAND, NEW ROSS RURAL	31/08/2015
Wexford County Council	20210095	Permission for to fill 4047 sq.m. (part of the existing site) with a clean stone	Marshmeadows & Camlin, New Ross Rural	30/06/2021
Wexford County Council	20231410	Permission for the retention of a pay-to-use portable waste compactor	Knockavilla, New Ross Rural	28/02/2024
Kilkenny County Council	19246	to retain indefinitely silage base, hard surfaced yard and all associated works	Arderra , Mooncoin , Co Kilkenny	26/05/2020
Kilkenny County Council	2360371	TO CONSTRUCT AN AGRICULTURAL SILAGE SLAB & ALL ASSOCIATED SITE WORKS	BALLYFACEY UPPER , GLENMORE , CO. KILKEN	11/01/2024
Kilkenny County Council	2479	for the construction of a silage pit with ancillary underground seepage tank and all associated site works	Milltown , Piltown , Co. Kilkenny	16/09/2024
Wexford County Council	20240030	Permission for 9 no. additional silos at existing cement bagging facility	Stokestown, Oldcourt	20/12/2024
Kilkenny County Council	ACP Ref. 317082-23	Flood Relief Scheme to protect the Village from flooding up to the 1% AEP flood event. Scheme consists of hard defences in addition to a range of interventions along the watercourse reach to provide additional capacity and environmental improvements.	Ballyhale, County Kilkenny	01/05/2023
Kilkenny County Council	15381	Permission for Continuance of Use for existing 24m telecommunications structure, carrying associated antennae and link dishes, associated equipment cabinets, and associated works.	Garraunbaun , Drumdowney Upper Td , Co. Kilke	14/08/2015
Kilkenny County Council	17482	Permission to retain an existing 27.3m high telecommunications structure carrying antennas, communications dishes together with associated ground-mounted equipment with a 2.4 metre palisade fenced compound.	Ballydaw , Co. Kilkenny	08/09/2017
Kilkenny County Council	17489	Retention Permission to retain an existing 16.7m high telecommunications structure carrying antennas, communications dishes together with associated ground-mounted equipment within a 2.4metre palisade fenced compound.	Glendonnel , Mullinavat , Co. Kilkenny	12/09/2017
Kilkenny County Council	17529	Retention permission to retain An Existing 26.4M High Telecommunications Structure Carrying Antennas, Communications Dishes Together with Associated Ground-Mounted Equipment with A 2.4 Metre Palisade fenced Compound.	Castlebanny , Ballyhale , Co. Kilkenny	02/10/2017
Kilkenny County Council	21207	Permission for a 21.3m high monopole telecommunications structure together with antennas, dishes and associated equipment all enclosed in security fencing.	Mullennahone TD , Glenmore , Co Kilkenny	09/08/2021
Kilkenny County Council	2288	The development consists of an existing 25 metre high telecommunications support structure (total height including antennas 26.4 metres) carrying telecommunications equipment, together with existing equipment container.	Drumdowney Upper Townland , Murtaghstown ,	26/01/2023
Kilkenny County Council	16129	Retention Permission to retain an existing 30 metre high Lattice telecommunications support structure carrying antennas and RT link dishes.	Kilmurry , Slieverue , Co. Kilkenny	27/04/2016
Kilkenny County Council	20233	Permission to replace an existing 27.3 metre monopole telecommunications support structure with a new 30 metre multi-user lattice telecommunications support structure, carrying antenna and dishes and to extend the compound enclosed by a 2.4 metre high palisade fence.	Ballydaw , Co. Kilkenny	13/07/2020
Kilkenny County Council	21209	Permission to replace an existing 27m metre monopole telecommunications support structure with a new 33 metre multi-user lattice telecommunications support structure, carrying antenna and dishes and to extend the compound enclosed by 2.4 metre high palisade fence.	Castlebanny , Ballyhale , Co. Kilkenny	18/11/2021
Kilkenny County Council	1565	Permission for Continuance of Use for existing 36m telecommunications structure, carrying associated antennea and link dishes, associated equipment cabinets (as per previous Planning Ref P10-21) and Permission for additional telecommunications equipment.	BallykennaTd , Tullogher , Co. Kilkenny	31/03/2015

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Wexford County Council	20180931	Retention permission of an existing 15 metre high telecommunications support structure (total height including antennas 16.78 metres) carrying telecommunications equipment, together with existing equipment container and associated equipment within a fenced compound as previously granted under local authority reference 20120304.	Ballylane West, Oldcourt	30/08/2018
Kilkenny County Council	16529	retention permission for development of a 36 metre high tower with associated equipment attached including an 3 metre high anticlimbing cage at ground level all within an existing RTE chain-link fenced compound using existing access. This application is	Corbally Wood , Corbally (Td) , Co. Kilkenny	01/11/2016
Kilkenny County Council	17201	retention permission for a freestanding 30 metre high telecommunications mast with existing antennae, aerials, dishes, single storey equipment building, 2.5 metre high perimeter fencing with a vehicular access gate along with all associated development w	Corbally Woods , Co. Kilkenny	23/06/2017
Kilkenny County Council	1927	for replacement and relocation of the existing 15 metre high freestanding wooden pole communication structure and its associated antennae communication dishes and ground equipment, with a 20metre high free standing monopole communication structure, carry	Rosbercon , Co. Kilkenny	17/04/2019
Kilkenny County Council	2460555	for the erection of a 24m lattice telecommunications support structure on a 1.2 metre high raised foundation (providing an overall height of 25.2 metres) together with associated antennas and dishes and to remove the existing 15 metre lattice telecommuni	Crowbally , Mullinavat , County Kilkenny	10/11/2025
Kilkenny County Council	2318	for development. The development will consist of a new 27 metres telecommunications support structure with headframe, carrying antennas, dishes, associated equipment, ground-based equipment cabinets, fencing and all associated site development works for	Ballyrobin , Ferrybank , Co Kilkenny	07/03/2024
Kilkenny County Council	1330	Permission for continuance of use of an existing 25 metres high monopole support structure carrying radio antennas (total height including antennas 26.4m), palisade perimeter fencing and equipment container.	Drumdowner Upper Townland , Murtaghstown ,	17/06/2013
Kilkenny County Council	ACP Ref. 315856	The development consists of an existing 25 metre high telecommunications support structure and associated works as previously granted under local authority reference 13/30.	Drumdowney Upper Townland , Murtaghstown ,	26/03/2024
Kilkenny County Council	2460237 (ACP Ref. 321484)	Construction of a cattle shed, manure pit and associated works.	Coolmeen, Ballyhale, Co. Kilkenny	30/04/2025
Wexford County Council	20250033	Permission for development which will consist of modifications to service station forecourt to include a high-power electric vehicle charging hub, consisting of the following; (i) installation of 4no. electric vehicle charging bays with 2no. charging points, (ii) new modular ESB substation, CT metering cabinet and mini pillar, (iii) the relocation of existing laundrette kiosk to northern boundary, and the provision of 4no. new car parking spaces along eastern boundary, and (iv) all other associated site development, landscaping and drainage infrastructure works	New Ross, New Ross Urban	07/03/2025
Kilkenny County Council	2560195	sought for the infill and raising of existing ground levels with the importation of 17,250 Tonnes of recovered inert soil and stone under permit and as a by-product under article 27, together with all associated suite development works. This application is accompanied by a Natura Impact Statement (NIS)	Annaghs , Rosbercon New Ross , Co. Wexford	Undecided
Kilkenny County Council	2560212	sought for the demolition and removal of an existing shed and 2No. silos, and the construction of a new warehouse storage building, together with all associated site development works	Raheen , Rosbercon New Ross , Co. Kilkenny	13/10/2025
Kilkenny County Council	2560263	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: 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 along the site perimeter to include access points for mammals; 7.Environmental monitoring of noise, dust, surface water and groundwater for the duration of the restoration works and for a short period thereafter; and 8.All ancillary site works, landscaping and perimeter fencing. 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)	Catsrock Quarry , Catsrock and Rathaglish , Cour	Undecided

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2560264	for the construction of a fully serviced building comprising of a Viewing Stand, Community Meeting Room, Shop, Gym, Dressing Rooms, Storeroom and associated works situated	Kilmurry , Slieveroe , Co. Kilkenny	04/11/2025

Granted and Undecided Applications Within 200m of the Grid Connection Route Option 1 - 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Residential				
Kilkenny County Council	20422	to construct a new vehicular entrance, a single storey dwelling, a garage, a wastewater treatment system with all associated site works	Glenpipe , Tullogher , Co. Kilkenny	11/12/2020
Other				
Kilkenny County Council	17168	for development of a cattle shed, concrete apron and associated site works	Cappagh , Thomastown , Co. Kilkenny	13/06/2017
Kilkenny County Council	17664	for the construction of a new entrance from public roadway onto forestry lands to comprise the provision of	Bishopmountain , Mullinavat , Co. Kilkenn	11/01/2018
Kilkenny County Council	1895	for development at a site. The development will consist of the widening of an existing entrance connecting t	Ballymartin , Mullinavat , Co Kilkenny	10/05/2018
Kilkenny County Council	21184	for bovine slatted unit and cubicle shed, consisting of a slatted tank for slurry storage, concrete yard, holding	Mullennakill , Tullogher , Mullinavat	10/01/2022

Granted and Undecided Applications Within 200m of the Grid Connection Route Option 2 - 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Electrical and Water Services				
Kilkenny County Council	18573	for develop at existing Grt Isl-Kk 110kV Overhead Line, approx 49kms long.Approx 46.4km of existing circuit located within functional area of CoKk with approx 2.6km located within CoWex.The uprate works within CoKk will be undertaken betwn structure INT16 in townland of Drumdowney Upr,near admin border betwn Co's Wx&Kk and structure EM258 in twnland of Scart(ED Dunbell),east of KkCity.Within Co Kk existing circuit extends across twnlands of Drumdowney Upr,Murtaghstown,Luffany, Rathpatrick,Treanaree,Carriganurra,Nicholastown,Atateemore orBlackneys,Ballincrea, Fahy,Rathnasmolagh,Knockbrack,Ballinlammy,Haggard, BallyfasyLwr&Upr, Ballywairy, Darbystown,Ballallog,Listerlin,Brabstown,Ballyconnaught,Ballykenna,Garrandarragh, Ballyvool,Firgrove,Bohilla,Ballycocksoost,Coolsillagh,Kilmacshane,Kilcullen,Ruppa, Mungmacody,Cloghscregg,Castlegarden,Kilmanaheen,Dungarvan(EDBennettsbridge), Dungarvan Glebe,Cloghala(EDBennettsbridge),Ballynaboley,Smithstown(EDDunbell), Clashwilliam Td(EDDunbell),Blanchvillestown,Grove(EDDunbell),Roughfield,Rathcash, Rathgarvan orClifden,Maddockstown,Ballynamona,Highrath &Scart(EDDunbell). Uprate of existing circuit within CoWx will be undertaken within twnland of Grt Isl, between structure EM1 at Grt Isl Substn&structure INT15 near admin border between Co's Wx&Kk. Developm will consist of uprate of Grt Isl-Kk 110kv Overhead Line which will primarily include:re-stringing conductor withhigher capacity conductor,replacement of large proportion of existing structures,breaking out & reconstruction of concrete foundation & shear blocks of metal masts, painting of mast structures, replacement of insulators, crossarms, stays and/or fittings on existing structures &fitting/replacement of bird flight diverters.No additional structures proposed along existing circuit.Any replacement structures will be constructed at,or immediately adjacent to existing structures they will replace&will be of generally similar height & appearance. Assoc temp sitedevelop works to gain access to existing structures incl clearance of vegetation, disassembly & reassembly of stone walls&gate posts&removal & reinstatement of exist fencing.The prop dev includes all other temp assoc&ancillary site dev works reqd for uprate of exist circuit,incl install of silt traps,silt fences, stone rds, bogmats & clearspan bridges.No additional struct, no alteration to nature,extent, alignment, character or voltage of exist elect infrastruct is proposed.A NIS forms part of this application	Great Island to , Kilkenny Overhead Line	08/03/2019

Granted and Undecided Applications Within 200m of the Turbine Delivery Route 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Kilkenny County Council	2560391	a 10 Year Planning Permission for a solar farm with a total area of circa 189 hectares in the townlands of Atateemore or Blackneys, Ballyhobuck, Ballyrahan, Carriganurra, Charlestown, Davidstown, Drumdowney Lower, Drumdowney Upper, Gorteens, Grogan, Kilmurry, Nicholastown, Rathpatrick, Scartnamoe, Tinvaucoosh and Treanaree in County Kilkenny. The solar farm will consist of solar panels on ground mounted frames, 27 no. single storey electrical inverter/transformer stations, 5 no. single storey spare parts containers, 3 no. Ring Main Units, 5 no. weather stations, underground electrical ducting and cabling within the development site, private lands and within the L3429, L7523, L7563, L7469, L3407, L3414, L34144, L7466, L3406, L7483, L3415, N25 and N29 public roads to connect solar farm field parcels, security fencing, CCTV, access tracks, 7 no. watercourse/drain deck crossings and 4 no. horizontal directional drill crossings (under the N25 and N29 public roads and the Luffany River), temporary construction compounds, landscaping and all associated ancillary development and drainage works. Construction and operational access will be via 7 no. existing entrances from the L3429, L7469, L7466, L4783 and L34142 which will be subject to entrance upgrade works. Separate construction phase access options are proposed for Parcel 4 via Port of Waterford and the L4783. The operational lifespan of the solar farm will be 40 years and planning permission is requested for this duration. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application	In the townlands of Atateemore or Blackn	Live Case
Electrical and Water Services				
Kilkenny County Council	16129	Retention Permission to retain an existing 30 metre high Lattice telecommunications suppurt structure carrying antennas and RT link dishes together with associated equipment cabinets and security fence	Kilmurry , Slieverue , Co. Kilkenny	30/05/2016
Kilkenny County Council	17489	Retention Permission to retain an existing 16.7m high telecommunications structure carrying antennas, communications dishes together with associated ground-mounted equipment within a 2.4metre palisade fenced compound as previously granted under File No. 1230	Glendonnel , Mullinavat , Co. Kilkenny	13/10/2017
Kilkenny County Council	18647	for a temporary on-site waste water treatment system, including percolation area, and all associated works, to serve the motorway service area development permitted under planning permission ref: P17/456, as an amendment to permission P17/456; at R704	Garrandarragh , Mullinavat , County Kilke	28/12/2018
Kilkenny County Council	20346	for water supply and foul drainage works including all pipes, valves, chambers, connections, a foul waste water pumping station and associated site works	Gorteens , Belview Port , Slieverue	20/11/2020
Kilkenny County Council	20738	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)	Belview Port , Gorteens , Co Kilkenny	05/02/2021
Kilkenny County Council	2460437	permission to retain existing wastewater treatment system and all associated site works	Skeard , Kilmacow , Co Kilkenny	16/05/2025
Kilkenny County Council	2560074	for the construction of a new wastewater treatment system and a proposed change to the site boundary situated	Rathpatrick , Slieverue , Co. Kilkenny	23/06/2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2560233	constructing 2 no. industrial warehouse blocks for bulk storage, with Block A housing 4 no. single storey storage units (floor area - 3,488.4m2) and Block B housing 4 no. single storey units (floor area - 8446.2m2), new weighbridge and cabin, new internal access roads, retaining walls and boundary fencing and all ancillary works	Belview Port , Gorteens , Co. Kilkenny	25/07/2025
Industrial				
Kilkenny County Council	ACP Ref. 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.	Gorteens, Slieverue, Co. Kilkenny	25/02/2025
Kilkenny County Council	1646	for the proposed erection of an Industrial Warehouse Building for the storage and bagging of fertiliser products (this Planning Application will supersede a previous Application for a similar building on this site which was Granted Permission under Planning Reg No.15/263) together with alterations to site boundaries including new boundary wall and fencing and all associated site works and ancillary services	Gorteens , Slieverue , Co. Kilkenny	08/07/2016
Kilkenny County Council	ACP Ref. 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	IDA Science & Technology Park, Gorteens	22/01/2024
Kilkenny County Council	ACP Ref. 306126	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.	IDA Ireland, Belview Science and Technol	09/12/2019
Kilkenny County Council	17763	for development which will consist of the construction of an extension (198.3m2) to an existing warehouse (Unit 7); the installation in the extension of a conditioning plant, aqueous waste storage tank and bagging unit for Air Pollution Control Residues (APCR); the acceptance of 38,000 tonnes of APCR and 2600 tonnes of aqueous waste annually, which will be in addition to the 95000 tonnes of waste currently authorised; the operation of the conditioning plant and bagging unit in the extension; the storage of the conditioned and bagged APCR in Unit 7 (1455.7m2), and the deletion of Condition 3 c) of planning permission P13/585. The APCR will be classified as hazardous waste. The development will require a review of the Industrial Emissions Licence granted by the Environmental Protection Agency. An Environmental Impact Assesment Report (EIAR) will be submitted	Belview Port , Gorteens , Co. Kilkenny	27/06/2018
Kilkenny County Council	181	retention permission for extension to existing dwelling, conservatory as built and detached garage	Garrandarragh , Mullinavat , Co. Kilkenny	28/03/2018
Kilkenny County Council	19302	to erect a steel storage extension to existing industrial workshop and all ancillary works	Airmount , Kilmurry , Slieverue	14/02/2020
Kilkenny County Council	19328	for a change of use at Units 3 and 4 Belview Port. It is intended to change its current warehousing use to allow for the acceptance and processing of non-hazardous waste into Solid Recovered Fuel (SRF) and for the composting of organic fines. The application will allow for acceptance and processing of up to 98,500 tonnes per annum at the facility. The application is accompanied by An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS)	Belview Port , Gorteens , Co. Kilkenny	11/12/2019
Kilkenny County Council	19302	to erect a steel storage extension to existing industrial workshop and all ancillary works	Airmount , Kilmurry , Slieverue	14/02/2020
Kilkenny County Council	19328	for a change of use at Units 3 and 4 Belview Port. It is intended to change its current warehousing use to allow for the acceptance and processing of non-hazardous waste into Solid Recovered Fuel (SRF) and for the composting of organic fines. The application will allow for acceptance and processing of up to 98,500 tonnes per annum at the facility. The application is accompanied by An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS)	Belview Port , Gorteens , Co. Kilkenny	11/12/2019
Kilkenny County Council	22318	for a laydown area for equipment and break bulk materials. The works will include earthworks, drainage, concrete paving, retaining walls and landscaping works. A Natura Impact Statement will accompany this application	Gorteens , Slieverue , Co. Kilkenny	19/06/2023
Kilkenny County Council	22480	for a Maintenance Building, roof mounted solar panels and associate site works at Belivew Port, the building is to provide storage for port vehicles, workshops for the maintenance and storage of port machinery and equipment, ancillary office accommodation and welfare facilities at	Gorteens , Slieverue , Co. Kilkenny	21/02/2023

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2460152	for development, at Unit 2, 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).	Unit 2 Belview Port , in the townland of Go	24/06/2024
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)	Unit 1 Belview Port , in the townland of Go	26/03/2025
Residential				
Kilkenny County Council	16119	to erect dwellinghouse and all associated works	Scart , Mullinavat , County Kilkenny	27/05/2016
Kilkenny County Council	16372	to erect a dwelling house, domestic garage and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	10/10/2016
Kilkenny County Council	16550	for change of house design from a bungalow as granted under planning application 10/420 to a storey and a half type dormer dwelling, with detached domestic garage, on site sewerage treatment system, new entrance onto public road and all associated works	Granny , Kilmacow , Co. Kilkenny	12/05/2017
Kilkenny County Council	16779	to retain extension to existing dwelling as built	No 11 Airmount , Slieverue , Co. Kilkenny	21/02/2017
Kilkenny County Council	17516	permission for the demolition of the existing semi detached 2 no, two storey dwellings. To construct 2no new two storey semi detached dwelling house. Provision of a new treatment plant and percolation area. All associated site development works	Rossinan , Mullinavat	23/10/2017
Kilkenny County Council	1776	to erect dwelling house and all associated works	Scart , Mullinavat , Co. Kilkenny	28/06/2017
Kilkenny County Council	18332	for existing extension to the side of the dwelling and Planning Permission to construct a new single storey extension to the side of the existing single storey dwelling and all associated works at	Ballykillaboy , Kilmacow , Co. Kilkenny	15/08/2018
Kilkenny County Council	18336	for development at this site. The development will consist of construction of a family house, garage, wastewater treatment system, percolation area, site entrance together with all ancillary site works	Scart , Mullinavat , Co Kilkenny	17/08/2018
Kilkenny County Council	1840	for a two storey (with attic accommodation) fully serviced detached dwelling together with all associated site works to include new vehicular access/driveway, landscaping, boundary treatments, well, foul water treatment system with percolation area, detached single storey garage, and all other associated site works at	Ballykillaboy , Kilmacow , Co. Kilkenny	26/06/2018
Kilkenny County Council	18563	for the indefinite retention of existing single storey garage/store to side/front and conservatory to rear of existing bungalow, together with permission for indefinite retention of assorted single storey outbuildings/'non-commercial' storage shed to rear of house (solely for the personal/incidental use of the dwelling)	Gorteens , Slieverue , Co. Kilkenny	09/11/2018
Kilkenny County Council	18668 Acp Ref. 304	the construction of a new dwelling with a new domestic wastewater treatment system and percolation area including refurbishment works to an existing protected structure and all associated site works	Granny , Kilmacow , Co Kilkenny	10/01/2020
Kilkenny County Council	18750	to construct a single storey dwelling, on site sewerage treatment, new entrance onto public road and all associated works	Scart , Mullinavat , Co. Kilkenny	13/02/2019
Kilkenny County Council	18810	to construct a dwelling house together with entrance onto the public road, wastewater treatment system and associated site development works at	Kilmurry , Slieverue , Co Kilkenny	27/09/2019
Kilkenny County Council	18866	is being sought to convert and extend existing derelict dwelling house to new dwelling house with new garage to rear of house and install new wastewater treatment plant with percolation beds. Form new joint Right of Way vehicular entrance to site and remove in its entirety high level grass verge in road East of proposed site entrance to a length of90 meters to achieve required sightlines, all with associated site works	Rathpatrick , Slieverue , Co Kilkenny	29/03/2019
Kilkenny County Council	19133	to retain indefinitely and spread on site imported topsoil and permission to erect dwelling house and all associated works	Dunkitt , Kilmacow , Co. Kilkenny	26/08/2019

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	19173	1. Planning permission for development to demolish existing single storey extension and construction of replacement dormer extension to the rear of existing dwelling house. 2. Planning permission for erection of advertising sign for "Slieverue Sports Injury Clinic" at front gate of dwelling house. 3. Retention of single storey log cabin for use in physical therapy practice in rear garden. 4. Retention of alterations to window features to front facade	10 Airmount , Slieverue , Co. Kilkenny	12/06/2019
Kilkenny County Council	192	to erect a dwelling house & all ancillary works	Deerpark , Mullinavat , Co Kilkenny	17/05/2019
Kilkenny County Council	19267	The development will consist of the demolition of an existing two storey extension, the construction of a two storey extension to the rear of the property, new front porch, proposed connection to the public sewer and all associated site works	Gorteens , Slieverue , Co Kilkenny	10/07/2019
Kilkenny County Council	19468	for the proposed construction of a bungalow style dwelling, garage, driveway, vehicular entrance, borewell, waste water treatment system with percolation and all associated site works	Deerpark , Mullinavat , Co. Kilkenny	20/11/2019
Kilkenny County Council	20169	to construct a single storey dwelling house with domestic garage and with new proprietary sewage treatment system and percolation area, and private borewell water supply and vehicular access from public roadway. Permission also sough for construction of stables for horses and various ancillary buildings relevant to same and including all associated and ancillary site development works	Deerpark , Mullinavat , Kilkenny	28/10/2020
Kilkenny County Council	20264	for a proposed new bungalow, proposed new vehicular entrance, driveway, bore well, wastewater system with percolation, storm water soakways and all associated site works	Rossinan , Mullinavat , Co. Kilkenny	24/11/2020
Kilkenny County Council	20545	for the development at this site. The development will consist of the demolition of existing front porch, side extension and chimneys, new roof finish to existing dwelling, construction of a storey and a half extension to the rear of the property, the construction of a waste water treatment system and all associated site works	2 Cloone Road , Ferrybank , Co Kilkenny	18/01/2021
Kilkenny County Council	2060	to erect a dwelling house, detached garage, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	21/07/2020
Kilkenny County Council	20818	for the proposed erection of a fully serviced 2 storey detached dwelling, detached single storey garage, proposed vehicular and pedestrian entrance, boundary treatments, landscaping, together with all associated site development works to include new foul water treatment system and percolation area	Killaspy , Slieverue , Co. Kilkenny	16/06/2021
Kilkenny County Council	2111	is being sought to form new vehicular site entrance and construct four bedroom dormer dwelling house and connect foul drainage to wastewater treatment system and percolation beds with all associated site works to my site	Rathpatrick , Slieverue , Co Kilkenny	16/08/2021
Kilkenny County Council	21167	for the following development: Erect dwelling house and all associated works	Scart , Mullinavat , County Kilkenny	27/08/2021
Kilkenny County Council	21331	to erect a dwelling house, detached garage, sewage treatment system & all ancillary works	Ballykillaboy , Kilmacow , Co Kilkenny	08/10/2021
Kilkenny County Council	21441	for the proposed erection of a fully serviced part single, part two storey detached dwelling, detached garage, proposed vehicular and pedestrian entrance, boundary treatments, landscaping, together with all associated site development works to include new foul water treatment system and percolation area, all	Dunkitt , Kilmacow , Co Kilkenny	11/10/2021
Kilkenny County Council	21450	to erect a dwelling house, detached garage, sewage treatment system and all ancillary works	Killaspy , Slieverue , Co. Kilkenny	06/10/2021
Kilkenny County Council	22270	to erect a dwelling house, detached garage, sewage treatment system & all ancillary works	Kilmurry , Slieverue , Co Kilkenny	07/11/2022
Kilkenny County Council	2260	to form new vehicular site entrance, construct two storey dwelling house with wastewater treatment system and percolation beds and install new water supply borewell with all associated site works	Kilmurry , Slieverue , Co. Kilkenny	26/07/2022
Kilkenny County Council	2287	to erect a dwelling house, detached garage, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	04/05/2022
Kilkenny County Council	2360205	for the construction of a 2 storey dwelling house with carport and domestic garage attached, domestic waste water treatment system, site entrance, and all associated site works	Kiln Road , Kilmurry , Slieverue Co Kilkenr	15/08/2023
Kilkenny County Council	2360385	permission to construct a 1.5 storey dwelling, a detached garage of 60 sq mts, a new entrance to the public road along with all associated site development works	Grannagh , Kilmacow , Co. Kilkenny	08/01/2024
Kilkenny County Council	24110	to erect a dwelling house, sewage treatment system and all ancillary works	Ballykeoghan , Kilmacow , Co. Kilkenny	14/02/2025
Kilkenny County Council	2534	to erect a dwelling house	Kilmurry , Slieverue , Co Kilkenny	25/07/2025
Kilkenny County Council	2560370	to construct a dwelling house, sewage treatment system and percolation area, including all necessary site works	Scart , Mullinavat , Co. Kilkenny	15/10/2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2560368	to construct a single storey dwelling with detached domestic garage, on-site sewerage treatment, new entrance onto the public road and all associated works	Ballynamorahan , Kilmacow , Co.Kilkenny	15/09/2025
Kilkenny County Council	2560372	to construct a single storey dwelling with attached domestic garage, on-site sewerage treatment, entrance onto the public road and all associated works	Scart , Mullinavat , Co.Kilkenny	17/09/2025
Kilkenny County Council	2560409	for the construction of a single storey dwelling, detached domestic garage, proprietary treatment system and all ancillary site works	Cloone , Mullinabro , Kilkenny	Live Case
Kilkenny County Council	2591	to erect a dwelling house, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	Live Case
Other				
Kilkenny County Council	16305	retention permission and permission. Permission to retain indefinitely extension to slatted cubicle shed and permission to erect further extensions to slatted cubicle shed, roof existing open feed areas and all associated works	Ballykillaboy , Kilmacow , Co. Kilkenny	08/08/2016
Kilkenny County Council	16316	for a new forestry access road to service the existing forestry lands and all associated works	Ballynooney , Mullinavat , Co. Kilkenny	13/02/2017
Kilkenny County Council	16566	for four additional storage silos and a maintenance building at	Mima Packaging Plant , Gorteens , Belview	18/11/2016
Kilkenny County Council	1681	to construct a farm/forestry roadway exiting onto the R704 road and all associated site works	Ballynooney West , Mullinavat , Co. Kilker	13/05/2016
Kilkenny County Council	17370	to construct 1.A new cubicle shed to house dairy cows along with underground slatted slurry storage and 2. A new Straw/Machinery Shed and all associated site works	Kilmurray , Slieverue , Co. Kilkenny	28/08/2017
Kilkenny County Council	17456	Permission for the development of a 24 hour opening Motorway Service Area to include: 1. Vehicle fuelling station with 12 no. bays and a 2 bay HGV fuelling station with canopy; 2. A single storey services building with canopy including: convenience store (incorporation full off sales for the sale of alcohol) (100m2); food court with cafe and restaurant uses, including take away facilities; indoor play area; offices and reception with tourist information; public toilet changing and shower facilities; plant room; storage and associated services; 3. A single storey roofed enclosure attached to the rear of the services building and associated yard for storage and services; and 4. External facilities and works include picnic, play, amenity and rest areas; bicycle parking; car and HGV parking spaces, electrical vehicle charging points; upgrading of existing vehicular entrance from the R704, signage, on site waste water treatment system, including percolation area and all associated site development works	At R704 , Garrandarragh , Mullinavat	15/12/2017
Kilkenny County Council	17492	Retention Permission to retain indefinitely garage/store as erected, retain indefinitely as built and complete twinned access and all associated works	Scart , Mullinavat , Co. Kilkenny	16/10/2017
Kilkenny County Council	17664	for the construction of a new entrance from public roadway onto forestry lands to comprise the provision of splayed access, clear visibility sightlines, associated setting back of adjacent roadside boundaries, provision of associated surface water drainage, fences, finished hardcored structure to access area, and all associated siteworks	Bishopmountain , Mullinavat , Co. Kilkenn	11/01/2018
Kilkenny County Council	1779	for (a) the proposed change of ground levels on site, (b) the erection of a retaining wall and (c) the erection of a boundary fence, together with all associated site works on site	Gorteens , Slieverue , Co. Kilkenny	10/05/2017
Kilkenny County Council	17820	for a 7 year permission for Bulk Stores and associated site works. The Stores will be used to store part related products such as bulk break, bulk and unitized products. The site works will include two weighbridges, weighbridge office, a new entrance for trucks, entrance gates, earthworks, fencing, relocation of an existing water tank, retaining walls, drainage, paving works and landscaping.	Gorteens , Slieverue , Co. kilkenny	14/05/2018
Kilkenny County Council	18184	to demolish nine agricultural buildings and associated site works at	Garrendarragh , Mullinavat , Co. Kilkenny	30/05/2018
Kilkenny County Council	18370	to amend previously granted extension to slatted cubicle shed ref no P16305 & full planning permission to erect a further 2 span extension to slatted cubicle shed & all associated site works	Ballykillaboy , Kilmacow , Co Kilkenny	27/08/2018
Kilkenny County Council	18431	for a laydown area for equipment and break bulk materials. The works will include earthworks, drainage, concrete and hardcore paving, retaining walls and landscaping works at	Gorteen , Slieverue , Co. Kilkenny	21/09/2018
Kilkenny County Council	18559	to erect slatted cubicle shed and all associated works at	Kilmurry , Slieverue , Co. Kilkenny	19/11/2018

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	18581	to construct a slatted shed with straw lieback, manure pit and all associated site works at	Glendonnell , Mullinavat , Via New Ross	23/11/2018
Kilkenny County Council	18658	for development of calf shed, silage base, concrete aprons and associated site works at	Glendonnell , Mullinavat , Co. Kilkenny	21/06/2019
Kilkenny County Council	1895	for development at a site. The development will consist of the widening of an existing entrance connecting to the public road (to form a bellmouth entrance), to facilitate occasional access to an existing forestry plantation, and all ancillary site development works	Ballymartin , Mullinavat , Co Kilkenny	10/05/2018
Kilkenny County Council	19187	to construct a milking parlour, slatted tank and ancillary works	Ballynooney , Mullinavat , Co Kilkenny	17/06/2019
Kilkenny County Council	19259	for the demolition of an existing gate house/security office at the main entrance to Belview Port and its replacement with a new larger gate house/security office and all associated site works including the provision of temporary security offices and temporary weighbridge, relocation of one existing weighbridge, entrance alterations, drains and services. Also planning permission for the construction of a second security office, two number car parking spaces, barriers and associated site works to control access to the rear entrance to Belview Port	Gorteens , Slieverue , Co. Kilkenny	17/09/2019
Kilkenny County Council	19268	to retain indefinitely extension to workshop, external access stairs to first floor of original building and development of first floor to provide canteen, changing room, shower and storage elevations as constructed and all associated works	Fogarty Motors , Milltown , Kilmacow	12/07/2019
Kilkenny County Council	20102	permission for development of a loose cattle shed, concrete apron, walled silage base, concrete apron and associated site works	Glendonnell , Mullinavat , Co. Kilkenny	26/06/2020
Kilkenny County Council	20155	to erect a milking parlour, milk silo, drafting and handling area, holding pens waiting yard with slatted tank and all associated site works	Ballykillaboy , Kilmacow , Co. Kilkenny	17/11/2020
Kilkenny County Council	20355	for development of a loose cattle shed, concrete apron, walled silage base, concrete apron and associated site works	Glendonnell , Mullinavat , Co. Kilkenny	24/08/2020
Kilkenny County Council	20416	to temporary install a 10.9 x 7.3 meter single storey modular accommodation Masterkabin structure to provide playschool group and afterschool facilities and to connect foul drainage and surface water to combined public mains drainage located within the site boundary with all associated site works to the grounds of	Slieverue GAA Club , Kilmurry Airmount F	25/09/2020
Kilkenny County Council	20553	for the following works to the existing school, the conversion of an existing classroom to 2 no. new offices, the construction of a new single storey extension consisting of 1 no. new classroom, 2 no. new resource rooms, 1 no. assisted user wc and a new link corridor together with all ancillary and associated site works	Our Lady of Lourdes National School , Slie	13/11/2020



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Appendix A-X SURFACE WATER MANAGEMENT PLAN

TOBIN

Ballyfasy Wind Farm, Co. Kilkenny Surface Water Management Plan

BUILT ON KNOWLEDGE

Document Control Sheet	
Document Reference	Ballyfasy Wind Farm Surface Water Management Plan
Client:	Manogate Ltd
Project Reference	11474

Rev	Description	Author	Date	Reviewer	Date	Approval	Date
A01	Report	MN	10/10/2025	JD	30/11/2025	AM	03/12/2025

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1. INTRODUCTION

This Surface Water Management Plan (SWMP) details control measures for avoiding, preventing or reducing impacts on the surface water environment during proposed construction, as identified in Environmental Impact Assessment Report (EIAR) Chapter 9 (Hydrology and Hydrogeology) and associated technical appendices.

The objective of this SWMP is to manage the movement of surface water during the construction, operation and decommissioning of the proposed Ballyfasy Wind Farm (proposed project). The measures implemented for the proposed construction phase will provide flow management for the operational and decommissioning phases.

The measures in the SWMP are consistent with those detailed within the Chapter 9 (Hydrology and Hydrogeology) of the EIAR. This is a working document and will be finalised by the appointed Contractor following appointment and prior to commencing works on the proposed project to include any additional conditions stipulated by An Coimisiún Pleanála.

All of the content provided in this SWMP will be delivered by the appointed Contractor and its finalisation by the appointed Contractor will not affect the robustness and adequacy of the information presented here and relied upon in the EIAR and Natura Impact Statement (NIS). Relevant guidelines were considered in the development of this surface water management plan.

1.1 OVERVIEW OF THE PROPOSED PROJECT

EIAR chapter 2 describes the proposed project in detail. The proposed project comprises:

- The wind farm site to include a wind farm of 10 no. turbines, an onsite 110 kilovolt (kV) substation and ancillary infrastructure;
- Grid Connection Options (GCO) (two options being considered); and
- Works along the proposed Turbine Delivery Route (TDR).

The footprint of the proposed wind farm infrastructure will require 53 ha. This area is included within the wind farm planning application boundary as shown in the planning drawings included in EIAR Appendix 1-1. The planning application boundaries for the four TDR works areas are shown in the planning drawings included in EIAR Appendix 1-1. The planning application boundaries for the two grid connection options (GCOs) is presented on drawings in EIAR Appendix 1-2.

The proposed wind farm site is located in the southern portion of County Kilkenny between the villages of Listerlin (approximately 3 km northeast), Mullinavat (approximately 4 km west) and Glenmore (approximately 5 km southeast).

The topography of the wind farm site varies from around 140 metres Ordnance Datum (mOD) to 220 mOD. The highest points are found in the north-east areas, while the southwest corner has the lowest elevation.

The landscape is predominantly agricultural with areas of coniferous forestry occurring mainly to the north and south. Two watercourses are located within the wind farm site; the Smithstown_15 Stream and the Smartcastle Stream. The source of the Arrigle River occurs in

the north, and flows in a northerly direction. The Smartcastle Stream, which is situated towards the south, flows in a southerly direction.

GCO One and GCO Two are assessed within the EIAR. GCO One, will install a 110 kV underground cable from the proposed project site substation to the consented Castlebanny Wind Farm 110 kV substation approximately 12 km to the north. This cable will be within approximately 8.4 km of public road and approximately 3.5 km of third party lands. GCO Two will connect into the existing 110 kV Great Island-Kilkenny overhead line which crosses over the east of the proposed wind farm site. This cable will be within approximately 2.3 km of third party lands.

TDR works are required at 13 locations in County Kilkenny to allow delivery of the turbine components to the proposed wind farm site. Works in these areas are minor in nature with the exception of four private locations as detailed in EIAR Chapter 2 (Description of Proposed Project) and EIAR Appendix 2-2. The TDR works are assessed within the EIAR.

2. PROPOSED SITE DRAINAGE

2.1 DRAINAGE DESIGN OVERVIEW

The drainage measures described will be implemented for the construction phase of the proposed project and the majority of the measures will remain in place for the operational phase.

The surface water drainage system follows the recommendations of sustainable urban drainage systems (SuDS) and uses SuDS measures. The principal behind SuDS is to reduce the quantity of discharge from developments to predevelopment flows and to also improve the quality of run-off from proposed projects.

A drainage evaluation has been carried out for the proposed project using the HR Wallingford Website (http://geoservergisweb2.hrwallingford.co.uk/uksd/index.htm- accessed September 2025) to identify appropriate SuDS measures for use on the proposed wind farm site.

For the proposed wind farm site the drainage design will decrease the quantity of run-off by using permeable road construction for the access roads and on the hardstanding areas and by providing surface water sedimentation/storage ponds. The following SuDS features are included in the drainage design for the proposed wind farm site:

- **Swales/Check Dams:** Sloped channels with check dams will slow down water flow, improving water quality, infiltration and reducing erosion:
- **Filter strips:** a gently sloped, vegetated area designed to treat stormwater runoff by filtering pollutants and allowing water to infiltrate into the soil. Filter strips are utilised at the level spreader locations:
- **Settlement Ponds:** Vegetated ponds designed to temporarily store surface water runoff, aiding in flood control; and
- **Hydrocarbon Interceptor:** a device designed to remove hydrocarbons, silt and other pollutants from surface water runoff before it enters the drainage system. The hydrocarbon interceptor will be located at the substation and construction compound.

The layout of the proposed wind farm site has been designed to collect surface water runoff from hardstanding areas and discharge to settlement/storage ponds within the proposed wind farm site boundary. From here the water will discharge to the ground by means of finger drains in a fan arrangement at the appropriate greenfield run off rates. A drawing of the proposed settlement ponds is shown in Drawing 11474-2024, in Appendix A.

Check dams will be provided in drainage channels to reduce the velocity of surface water run-off and are depicted in Figure 2-1. Swales will be constructed adjacent to the access road (see Appendix A) to provide drainage as depicted in Figure 2-1.

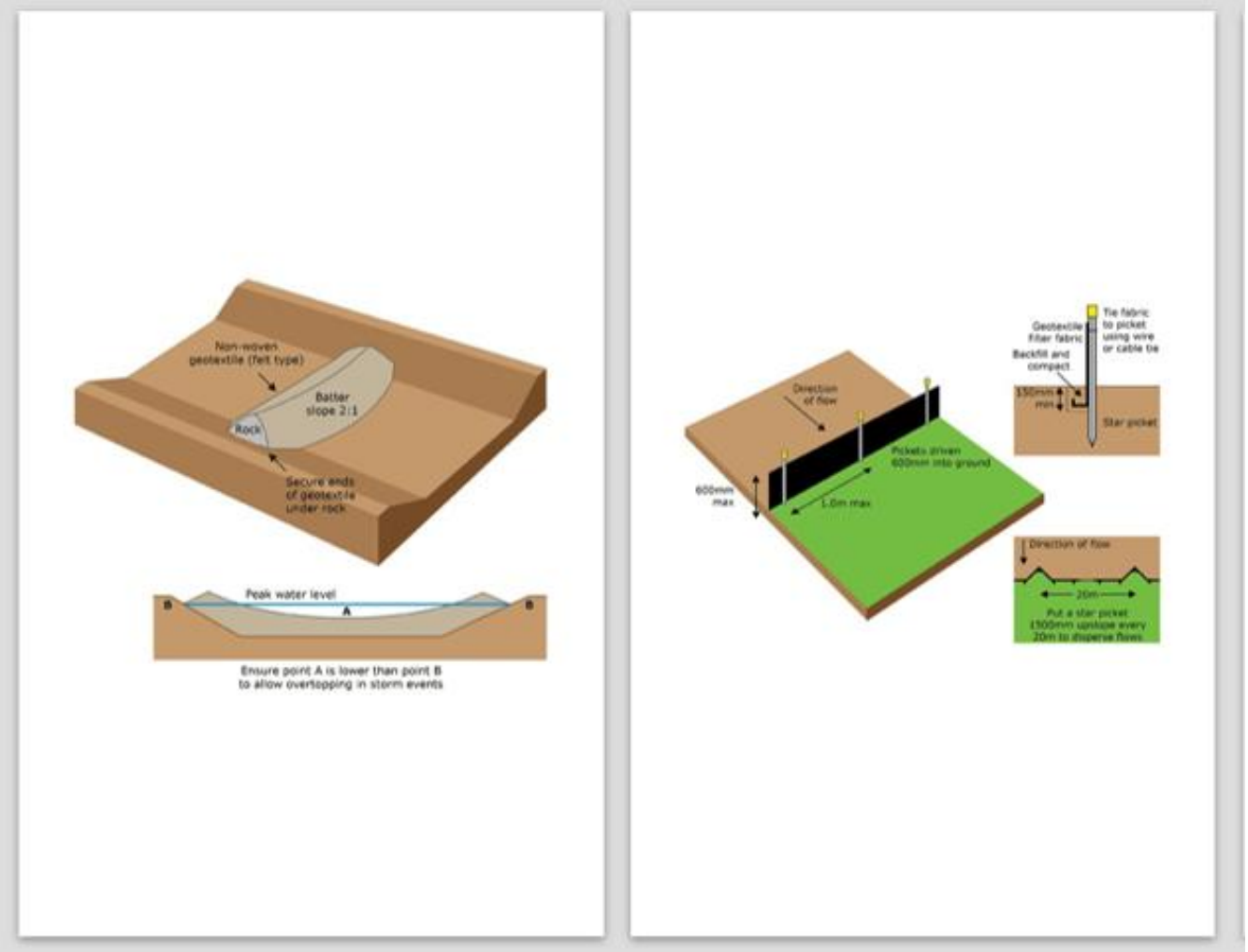


Figure 2-1 Check dam and silt fence examples (Source: Guidelines for Environmental Management, EPA Australia, 2004)



Figure 2-2 Vegetated swale

2.2 Forestry Drainage

Forest felling will be undertaken during the initial phase of the construction works. The Felling and Reforestation Standards describe the universal standards that apply to all felling (thinning, clear felling) and reforestation projects on all proposed wind farm sites, will be implemented under a felling licence issued by the Department of Agriculture, Food & the Marine.

All associated tree felling will be undertaken using good working practices as outlined in the Forestry Report and Construction Environmental Management Plan (CEMP) (Appendices 2-3 and 2-6 of this project EIAR), the Forest Service 'Forestry Harvesting and Environment Guidelines' (2000) and the 'Forestry and Water Quality Guidelines '(2000). The latter guidelines deal with sensitive areas, erosion, buffer zone guidelines for aquatic zones, ground preparation and drainage, chemicals, fuel and machine oils. Brash mats will also be used to support harvesting and forwarding machinery. The brash mats reduce erosion of the surface and will be renewed as they become used and worn over time.

Trees will be manually felled inside the 25 m stream buffer. During the near stream construction work, silt traps and a double row silt fences will be placed immediately down-gradient of the construction area for the duration of the construction phase.

2.3 Flood Risk Attenuation

The creation of impermeable areas, such as hardstands, has the potential to locally increase rates of runoff and this may increase flood risk and flood severity downstream. The proposed wind farm site is relatively low permeability and will have limited potential to increase flows.

The risk of flooding associated with the proposed wind farm site is minimal based on the project specific Flood Risk Assessment carried out for the proposed project (see Appendix 9-3 of the

EIAR). The layout of the proposed wind farm site will minimise the flood risk to people, property, the economy, and the environment.

It is proposed to provide the temporary storage within the drainage channels by creating check dams within them at regular intervals. The spacing of the dams is every 50 metres on average but depends on the channel slope. Runoff from the impermeable areas will be directed to swales and settlement ponds. The outflow from the settlement ponds will be released in a controlled and diffuse manner onto the vegetation and existing drains.

2.4 Turbine Delivery Route and Grid Connection

There will be limited construction activities required for the grid connection and works areas of the proposed Turbine Delivery Route (TDR). Further details in relation to the grid connection cable route and road/junction accommodation works on the TDR are outlined in the CEMP in Appendix 2-6 of the EIAR.

No refuelling of machinery will take place within 50 m of a watercourse. Excavated material will not be stockpiled or side-cast within 50 m of a watercourse. Appropriate steps will be taken to prevent soil/dirt generated during the temporary upgrade works to the TDR from being transported on the public road. Road sweeping vehicles will be used as required, to ensure that the public road network remains free of soil/dirt from the location of the TDR works when required. This will reduce the potential for sedimentation of surface watercourses locally.

Silt fencing will be erected at the location of all stream crossings along the grid connection. Where existing drainage ditches need to be realigned (e.g., around substation), new ditches will match profile of existing ditch in relation to width, existing side slope profile (or lower) and material at base of channel will be reused. The sizing of any new culverts will be designed to maintain existing flow characteristics and depth of flow. Within the proposed wind farm site, culverts will be assessed to ensure no barriers to fish migration occur. Where barriers occur, such culverts will be improved to increase fisheries potential.

2.5 Borrow Pit

The water level in the borrow pit will be managed by a dedicated outlet and silt bag. This outlet, along with pre-installed upgradient interceptor drains, will control runoff from both the pit and its immediate surroundings. During the construction phase, any standing water will be removed using a mobile pump to maintain dry working conditions. The pumped water will be discharged into the drainage network (silt bag, settlement ponds) that serves the outlet. To minimise sediment entering the pump, the intake will be positioned above the pit floor on a stable platform. The pump operation will be managed to maintain a stable water level, preventing turbulence that resuspends settled solids.

3. WATER QUALITY MEASURES

The drainage design measures outlined in Section 2 will manage flow and quality within the proposed wind farm site and near the works areas of the proposed TDR and grid connection. Specific water quality measures in relation to sediment, concrete and fuel management are detailed below.

3.1 CONCRETE

During the construction phase, concrete will primarily be supplied as ready-mixed material from local batching plants, delivered in sealed concrete trucks. On-site mixing will be limited to minor tasks, such as substation blockwork. The use of ready-mixed deliveries significantly reduces environmental risks associated with large-scale on-site batching.

Upon delivery, only the truck chute will be rinsed on site using the minimum necessary volume of water. Full washout of trucks will occur at the batching plant, where appropriate facilities are already in place. Water from chute rinsing will be directed into a temporary lined, impermeable containment area. These areas will be excavated and lined with an impermeable membrane to prevent ground contamination. Residual solids and liquids will be collected and removed by a licensed waste contractor.

Concrete washout areas will be located near Site Entrance One and at key concrete pour locations—such as turbine hardstands—to ensure accessibility.

Although surplus concrete following a pour is unlikely, any excess will be returned and disposed of off-site at the concrete production facility. Localised mixing for minor works, such as blockwork, will be conducted only as required. Any small volumes of leftover concrete from these tasks will be disposed of in the designated on-site concrete washout area.

Further details on best practices and environmental controls related to concrete delivery and pouring are provided in the Construction Environmental Management Plan (CEMP) (see EIAR Appendix 2-6). A hydrocarbon interceptor will be located at the substation and construction compound.

3.2 FUELS, OILS AND CHEMICALS – SPILL CONTROL

The following will be employed on the proposed wind farm site:

1. Fuels and chemicals will be stored within bunded areas as appropriate to guard against potential accidental spills or leakages. The bund area will have a volume of at least 110% of the volume of such materials stored.
2. Store all containers of oil and fuel in a secure, bunded area.
3. Regularly check tanks, containers and bunds for damage and leaks.
4. Supervise all fuel and oil deliveries.
5. Lock containers and tanks when not in use.
6. Seek advice from a line manager before disposing of waste fuel or oil, or contaminated spill granules or absorbent mats – all contaminated materials to be disposed of in the appropriate manner.
7. Liaise with a line manager to organise removal of contaminated water from bunds and trays by an appropriate contractor.
8. Do not store fuel and oil, or carry out refuelling, within 50 m of a watercourse.

9. All on-site refuelling will be carried out by a trained competent operative. Use a funnel when refuelling small plant. Use an automatic shut off or pistol grip delivery system when refuelling plant.
10. Clear up and report all spillages immediately.
11. Place a drip tray or absorbent mat under all static plant and mobile plant during fuelling.
12. Mobile measures such as drip trays and fuel absorbent mats kept with all plant and bowsers and will be used as required during all refuelling operations.
13. A spill kit will be stored with the bowser and the person operating the bowser will be trained in their use.
14. All equipment and machinery will have regular checking for leakages and quality of performance and will carry spill kits.
15. Any servicing of vehicles will be confined to designated and suitably protected areas such as construction compounds.
16. Additional drip trays and spill kits will be kept available on the proposed wind farm site, to ensure that any spills from vehicles are contained and removed off-site.

4. EROSION AND SEDIMENT CONTROL MEASURES

It is proposed, that during the ground clearance of the proposed project, the contractor will implement water control measures to limit the impact on water quality using standards measures. Suspended solid (silt) removal features will be implemented in accordance with the Construction Industry Research and Information Association (CIRIA) C697 SuDS Manual, and CIRIA C648 Control of water pollution from linear construction projects.

Interceptor drains will be installed up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. These flows will discharge diffusely overland, within the buffer zone before entering any watercourse. Regular cross flow and energy dissipation devices will be installed to divert overland flows and prevent these flows from entering the borrow pits. All drainage from the proposed wind farm site shall be designed to have as a minimum three stages of treatment, as defined in the SuDS Manual. Management of runoff will include the following:

- Filtration of water through filter media (sand/stone check dam, silt fence);
- Detention/settlement in settlement ponds or behind check dam in swales; and
- Conveyance of shallow depths of water in vegetated swale.

All surface water run-off from the proposed wind farm site will pass through settlement ponds. It is proposed to locate settlement ponds downstream of borrow pits and associated stockpile areas, each hardstand and along all the proposed wind farm site access tracks.

Drainage drawings are presented in Drawing 11474-2040 to 11474-2044, in Appendix A.

4.1 CHECK DAMS/SILT FENCES

Track edge drainage/swales are required to control run-off from the running surface to lower water levels in the subgrade, to control surface water and to carry this flow to outlet points. Swales will be re-vegetated by hydro-seeding with indigenous seed mix as soon as is practicable following excavation. This will reduce the flow velocity, treat potential pollutants, increase filtration and silt retention.

Swales will be installed in advance of the main construction phase. Check dam/Silt fence are presented in Drawing 11474-2024. On sections of track where there is significant longitudinal gradient, regular surface water interception channels will be employed – these will typically be at 20m intervals to collect any surface water that is discharging as sheet flow along the track and discharge the flow into the trackside swale.

Check dams will have a minimum 0.2 m freeboard (from top of check dam) to top of swale level, to prevent overtopping of flows onto the access track. All check dams, etc to be checked at least once weekly via a walkover survey during the period of construction. All excess silts will be removed. Where check dams have become fully blocked with silt, they will be replaced. The following measures will be implemented:

All stockpiled material will be battered back (Slope of 1:2 or less) to reduce the rainfall erosion potential. Silt fencing will be utilised as the base of stockpiles.

Silt fencing is to be installed in the path of sheet flow runoff to filter our heavy sediments. Silt fences are to be located at the toe of stockpiled areas to reduce sediment transport. Additional

silt fencing and emergency spill kits will be kept on the proposed wind farm site for use in emergencies. All silt fencing on the proposed wind farm site will also require regular cleaning and maintenance in accordance with manufactures guidelines.

Silt build ups, within settlement ponds, check dams, silt fences are to be removed as required to ensure no carryover/breakthrough of suspended matter downstream in the drainage system. Any sediment removed will be disposed of so as to prevent any reintroduction into the drainage system.

4.2 SETTLEMENT PONDS

Settlement ponds will be located downstream of road swale sections and at turbine/hardstand locations, to manage/buffer volumes of runoff discharging from the drainage system during periods of high rainfall, thereby reducing the hydraulic loading to watercourses. Settlement ponds are designed in consideration of the greenfield runoff rates. A longitudinal cross-section and plan of a settlement pond is presented in Drawing 11474-2024, in Appendix A.

The proposed settlement pond design consists of a sediment forebay, which removes the majority of suspended solids from the inflow water. Inflow water enters the sediment forebay via an energy break, which removes energy from the incoming water resulting in a decrease in the incoming waters capacity to transport suspended solids and the deposition of material in the sediment forebay. The water then flows over a section of elevated channel bed into the flow control bay. Here the flow is controlled by a weir constructed of tightly fixed straw bales (or silt fence or equivalent). The straw acts as an effective silt trap for any remaining suspended solids while allowing the water to filter through its medium. Once the water has been filtered by the flow control device it then outfalls to an area of intact vegetation, which acts as a secondary filter. The outflow control from the settlement device is designed such that in an extreme event the device can overflow into adjacent vegetated areas.

Settlement ponds will be installed concurrently with the formation of the road. Additional settlement ponds will be constructed as required on the proposed wind farm site. Settlement ponds are to be located as close to the source of sediment as possible with a buffer zone between the settlement pond outfall and any existing watercourse.

The settlement pond design (Drawing 11474-2024, Appendix A) is based on primary settling out of suspended solids from aqueous suspension. The theory behind the design of the settlement ponds is the application of Stoke's Law. The settlement ponds will be designed to provide sufficient retention time and a low velocity environment to allow suspended solids of small particle size to fall out of suspension prior to allowing the water to outfall to the receiving environment.

Runoff will be maintained at Greenfield (pre-development) runoff rates. The layout of the development has been designed to collect surface water runoff from hardstanding areas within the development and discharge to associated surface water attenuation lagoons adjacent to the proposed infrastructure. It will then be managed by gravity flow at Greenfield runoff rates.

4.3 WORKS NEAR WATERCOURSES

As mentioned above, where main drain crossings and stream crossings occur (i.e., access tracks), it is proposed to use a clear-span design bridge or bottomless culverts. Installation of such

features will take place during dry periods to reduce the risk of sediment entering the watercourse. Smaller drains with be crossed using normal culverts.

Three new clear-span bridges are required to cross the EPA streams. Clear span bridges are required for the Smithstown_15 stream near T9 and for access to T5 and T6 over the Smartscastle stream. Two additional clear span bridge crossings over a drainage channel were also recommended based on ecological/hydrological site walkovers. A Section 50 Consent application will be prepared and submitted to the OPW prior to construction. No instream works are proposed.

As a further precaution, near-stream construction work will only be carried out during the period permitted by Inland Fisheries Ireland for in-stream works guidance document *"Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites"* .

Culverts will be designed to be of a size adequate to carry expected peak flows in accordance with CIRIA Culvert design and operation guide (C689). Culverts will be installed to conform, wherever possible, to the natural slope and alignment of the drainage line. Where required, culverts will be buried at an appropriate depth below the channel bed and the original bed material placed at the bottom of the culvert. The sizing of any new internal drainage crossings will maintain existing depth of flow and channel characteristics.

Culverts will be required at drain crossings along the access roads and to allow for cross drainage on the proposed windfarm. Precast concrete culverts or uPVC drainage pipes shall be provided for drain culverts, detail of which is shown in Drawing 11474-2024, in Appendix A. Earth embankments constructed for bridge approaches will be protected against erosion e.g., by re-vegetation or rock surfacing etc.

4.4 GRID CONNECTION

Cable trenches are typically developed in short sections, thereby minimising the amount of ground disturbed at any one time and minimising the potential for drainage runoff to pick up silt or suspended solids. Each short section of trench is excavated, ducting installed and bedded, and backfilled with the appropriate materials, before work on the next section commences.

5. SURFACE WATER MONITORING

Details of the proposed surface water monitoring and maintenance activities are provided in this section of the SWMP. Operational phase monitoring is not required, as the risk of contamination during this phase is considered low.

The Contractor will retain records of all monitoring and maintenance activities carried out during the construction phase.

5.1 RECORDING AND REPORTING

Inspections will be recorded for the proposed project. In the event that pollution indicators are observed, works will cease, and sampling will immediately be undertaken as described for the weekly monitoring, and an investigation of the potential cause will be undertaken by the appointed Contractor.

- Where the construction works are identified as the source causing the exceedance, the following details will be recorded (the requirement for this will be included in the Project SWMP): Nature of the impacts and mechanism of pollution;
- Details of the activity identified as causing the incident or, in the event no clear pathway still exists, activities capable of causing the incident and an assessment undertaken as to the most likely source; and
- Details of measures proposed and implemented to ensure that such an incident does not re-occur.

This information will be shared with the Employer and the regulators. Through monitoring and this open and transparent reporting, there is a much reduced likelihood of a small incident becoming a serious one that may require regulator action; proactively providing this information gives the regulator and the Client comfort that these issues are taken seriously on the proposed wind farm site and addressed in a professional manner.

5.2 DETAILS OF MONITORING LOCATIONS ON SITE

There are 7 no. surface water monitoring locations (see Figure 5-1) to monitor surface water quality. These points are focussed on areas where turbines are located close to streams/rivers. The proposed monitoring schedule is robust and sufficient for the scale of the proposed wind farm site and in line with the relevant guidance.

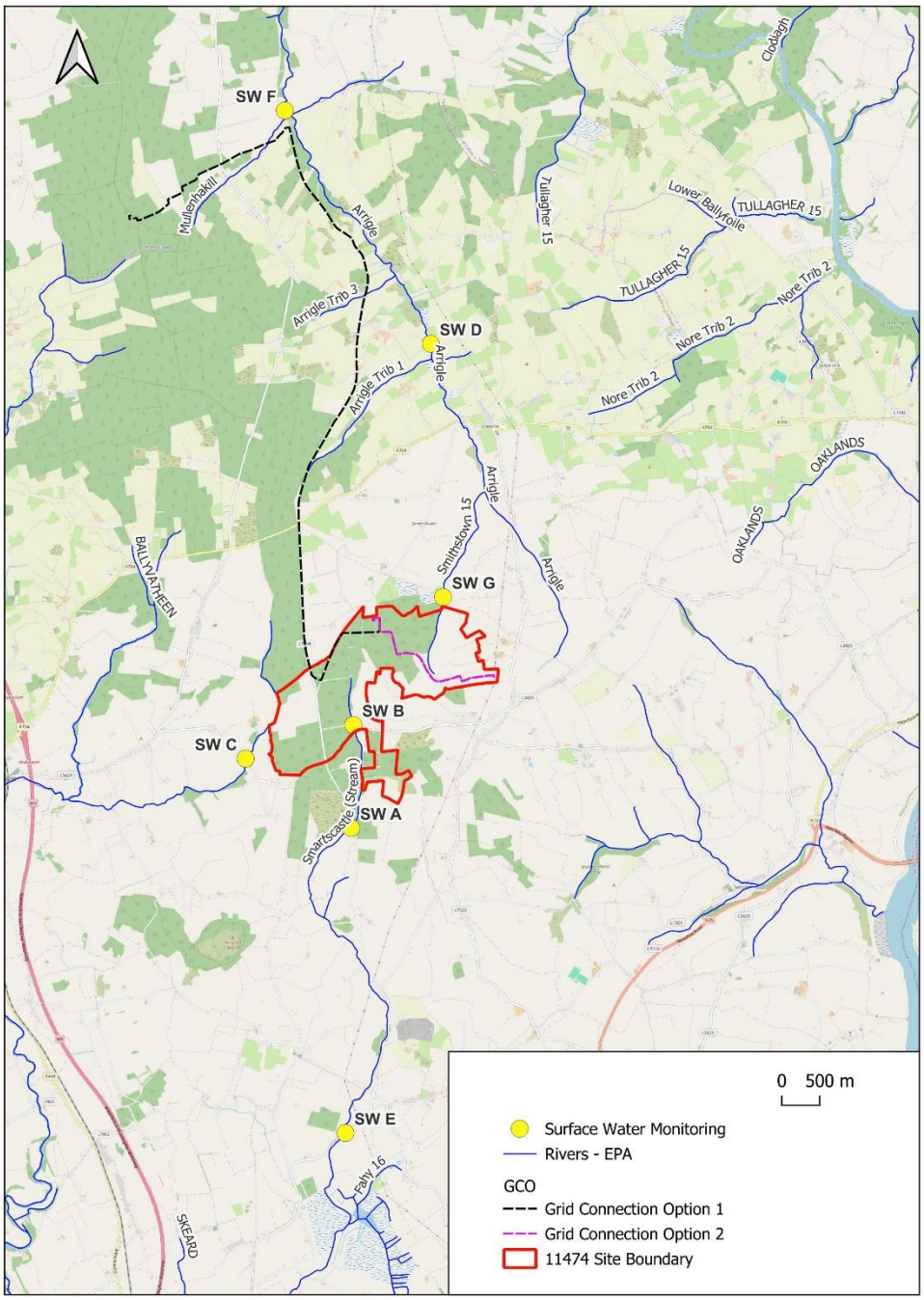


Figure 5-1 Surface water monitoring locations for the SWMP

5.2.1 Surface Water Monitoring Schedule

All surface water control measures for the proposed project will be implemented in accordance with the Construction Environmental Management Plan (CEMP) (Appendix 2-6 of the EIAR). A surface water monitoring schedule for the construction phase has been developed (see Table 5-1), detailing the selected monitoring locations, parameters, and associated trigger limits (see Table 5-2). The schedule also specifies the frequency of monitoring to be undertaken before, during, and after construction. Further details of the proposed surface water monitoring locations are provided in Table 5-3.

5.2.2 Schedule of Monitoring

The critical water parameters in terms of their potential to cause damage to aquatic life, ecosystems, human health and water quality in the receiving waters are outlined in the surface water monitoring schedule (see Table 5-1).

Table 5-1: Surface Water Monitoring Schedule for Ballyfasy Wind Farm

Phase	Preconstruction	Construction	Post construction
Monitoring Period	3 Months	24 Months	3 Months
Frequency	Continuous		
Parameters	Turbidity	Turbidity	Turbidity
Frequency	Daily		
Surface Water Parameters	N/A	Turbidity and visual checks (examination of surface drainage/sediment control measures/watercourses)	Turbidity and visual checks (examination of surface drainage/sediment control measures/watercourses)
Frequency	Weekly (Handheld Meter)		
Surface Water Parameters	pH, Electrical Conductivity, Turbidity, Temperature	pH, Electrical Conductivity, Turbidity, Temperature (Monitoring during clearance phase and construction works at Turbines)	N/A
Frequency	Monthly (Grab samples)		
Surface Water Parameters	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Total Ammonia, Total Phosphorus, Total Suspended Solids	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Total Ammonia, Total Phosphorus, Total Suspended Solids	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Total Ammonia, Total Phosphorus, Total Suspended Solids
Frequency	Quarterly (Grab Samples)		
Surface Water Parameters	N/A	Conductivity, Chloride, Dissolved Oxygen, Molybdate Reactive Phosphorus, Mineral Oil, pH, Turbidity, Nitrate, Total Ammonia, Total Phosphorus, Total Suspended Solids	N/A
Frequency	Pre-Construction Report	Monthly and Quarterly Monitoring Report	Final Monitoring Report
Surface Water Parameters	Upgrade limits/trigger values for construction phase water monitoring	Results screened against construction phase surface water monitoring trigger levels	Results screened against construction phase surface water monitoring trigger levels

5.2.3 Surface water Monitoring Trigger Values

Surface Water Quality Monitoring (SWQM) will be conducted by the appointed Contractor in accordance with the monitoring schedule proposed in Table 5-1. Prior to the commencement of construction, baseline preconstruction monitoring will be carried out. The results of this monitoring suite will determine the baseline and trigger values for the construction monitoring phase of the development. This will be completed in order to establish if local trigger values are required due to existing water quality exceedances.

The final details of the monitoring schedule will be agreed with the relevant authorities, prior to the commencement of construction. Construction and post construction sampling results will be screened against the agreed trigger values as proposed in Table 5-2, except where local triggers are required.

Table 5-2: Analysis and Proposed Trigger Values (Pre-Construction)

Parameter	Proposed Limits	Units
Conductivity	700 µS/cm or within preconstruction values	µS/cm
Chloride	200 mg/l or lower i.e. within trigger values established by preconstruction monitoring	mg/l
Dissolved Oxygen	80% to 120%	% Saturation
Biochemical Oxygen Demand	1.5 mg/l annual average or within preconstruction values	
Molybdate Reactive Phosphorus	0.035 mg/l annual average or within preconstruction values	mg/l
Mineral Oil	10 µg/l or within preconstruction values	µg/l
pH	6.0-9.0	pH units
Turbidity	50 NTU or within preconstruction values	Nephelometric Turbidity Unit (NTU)
Total Ammonia	0.14 mg/l (95%ile) or within preconstruction values	mg/l
Total Phosphorus	0.1 mg/l or within preconstruction values	mg/l
Total Suspended Solids	25 mg/l or within preconstruction values	mg/l

Field measurements will be taken by the contractor on a weekly basis during the main earthworks stage of the construction period. In addition, daily visual inspections of the surface drainage and sediment control measurements and the watercourses will be completed. Daily turbidity monitoring will also be undertaken on the proposed wind farm site. Indicators that show evidence of water quality issues include the following and will be noted.

17. Changes in water quality; and
18. Changes in water transparency.

In-situ field monitoring will also be conducted during major rainfall events i.e., 15 mm in a 6-hour period. The clerk of works will undertake monitoring during the rainfall events. Laboratory samples will be taken on a monthly basis during construction.

5.2.4 Surface Water Quality Monitoring Locations

Monitoring will be carried out at seven locations surrounding the proposed wind farm site (see Figure 5-1). Construction-phase surface water monitoring will take place at the stream locations listed in the table below. The sampling point labels are consistent with those used during site investigations to allow for comparison.

Table 5-3: Surface Water Monitoring locations details

Name	Easting	Northing	River	Notes
SW A	661065	623706	Smartscastle (Stream)	Downgradient Smartscastle (Stream)
SW B	661092	625067	Smartscastle (Stream)	Within site boundary, Smartscastle (Stream)
SW C	659672	624623	Ballyknockbeg	Downgradient Ballyknockbeg stream
SW D	662116	630102	Arrigle	Downgradient, below Arrigle tributary 1
SW E	660989	619679	Smartscastle (Stream)	Downgradient Smartscastle (Stream)
SW F	660189	633183	Arrigle	Downgradient Mullenhakill tributary
SW G	662278	626756	Smithstown 15	Downgradient Smithstown 15

Monitoring records will include the date and time of the monitoring period and relate to the relevant consent conditions, where applicable. A written log of the environmental performance of the works will be maintained. A monthly monitoring report on the findings of the monitoring exercises will be prepared within two weeks of receipt of analytical results. The monthly monitoring reports will cover the construction and post construction works.

5.2.5 Proposed Monitoring Frequency and Parameters

5.2.5.1 Pre-Construction Monitoring

It is proposed that the surface water monitoring will be scheduled in conjunction with the pre-construction stage. Continuous turbidity monitoring will be undertaken upgradient and downgradient on the Smithstown_15, Smartscastle and Arrigle River preconstruction and during construction.

5.2.5.2 Construction Stage Monitoring

Surface water monitoring will be undertaken daily during the construction stage of the proposed project. The daily monitoring will include for a walk around the proposed wind farm site, visual inspection of the watercourses and field measurements for turbidity to be undertaken as required and, as a minimum, on a weekly basis. Weekly surface water monitoring will take place as per the daily surface water inspection and will include for a routine weekly measurement of turbidity at the surface water locations.

Monthly surface water samples will be collected during the construction stage of the proposed project and laboratory analysis will be undertaken for those monitoring parameters included in Table 5-2 of this SWMP.

5.2.5.3 Post-Construction

Immediately post-construction for three months, surface water samples will be collected, and laboratory analysis will be undertaken for those monitoring parameters included in Table 5-1 of this SWMP.

5.2.6 Trigger Values

The trigger values for the surface water monitoring programme are those listed in Table 5-4 of this SWMP and where relevant Surface Water Quality standards given in the Surface Water (Environmental Objectives) Regulations S.I. 272 of 2009, or as otherwise agreed with the Planning Authority in consultation with Inland Fisheries Ireland where required.

An Environmental Manager will be engaged for construction stage monitoring. Should the trigger values not be met, the Environmental Manager will have 'Stop Works Authority' to direct the contractor's construction manager to cease all works and activities on the proposed wind farm site pending further instruction.

Table 5-4: Proposed Surface Water Parameters and Trigger Values

Parameter	Units	Proposed Trigger Values	SI No. 272 of 2009 EU Surface Water Environmental Objective Regulations (as amended)	SI No. 293 of 1988 EC Regulations (Quality of Salmonid Waters)
Electrical Conductivity (EC)	µS/cm	700		
pH	pH units	>4.5 and <9	Soft Water 4.5< pH < 9.0	>6 and <9
MRP	mg/l	0.025 (mean – high status) 0.035 (mean- good status)	0.025 (mean – high status) 0.035 (mean- good status)	
Dissolved Inorganic Nitrogen as N	mg/l	2.6	2.6	
Total Suspended Solids	mg/l	25 (annual average)		25 (annual average)
BOD	mg/l	<5	<2.6 (95%ile) good status <2.2 (95%ile) high status	<5
COD	mg/l	40		
Dissolved Iron	ug/l	200		
Sulphate	mg/l	200		
Total Alkalinity as $CaCO_3$	mg/l	No abnormal change		No abnormal change
Hydroxide Alkalinity as $CaCO_3$	mg/l	No abnormal change		No abnormal change

6. MAINTENANCE ACTIVITIES

6.1 CONSTRUCTION PHASE

Settlement ponds will be regularly cleaned/maintained to provide effective and successful operation throughout the works. Outfalls and ditches will be cleaned, when required, starting up stream with the outfalls blocked temporarily prior to cleaning. Settlement pond management will also include the following:

- Sediment/silt removed via the contractor from ponds is to be disposed of at suitable locations on the proposed wind farm site, away from watercourses. Machine access is required to enable the accumulated sediment to be excavated.
- Settlement pond maintenance and/or cleaning will not take place during periods of extended heavy rain. Settlement ponds will be clearly marked for safety.
- Settlement ponds will be constructed on even ground and not on sloping ground and where possible will discharge into vegetation areas to aid dispersion.
- The settlement ponds will be monitored closely over the construction timeframe to ensure that they are operating effectively.

6.2 OPERATION PHASE

During the operational phase impediments to flows can generally occur as a result from blockages to watercourse crossings, ditches and watercourses themselves, resulting from vegetation and erosion debris. The surface water infrastructure will be maintained by the operator through the lifetime of the planning permission.

6.3 DECOMMISSIONING PHASE

A review of the relevant guidelines will be undertaken prior to the decommissioning phase. The operational phase surface water management infrastructure will be utilised for the decommissioning phase. The operational road layout will remain in place and therefore limit the potential for siltation during the decommissioning phase. Water quality measures as outlined in Section 3 will be implemented.

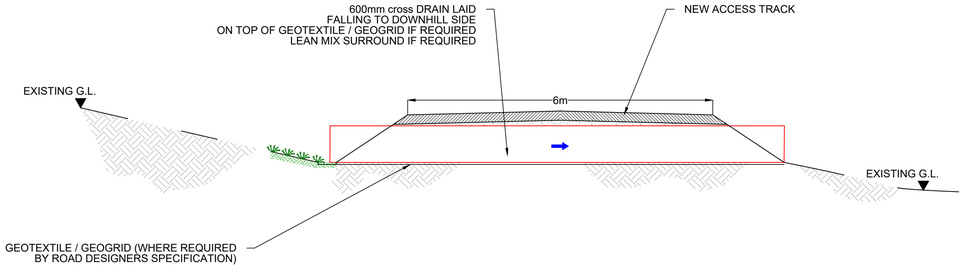
APPENDIX A

PLANNING DRAWINGS

11474-2024 & 11474-2040 TO 11474-2044

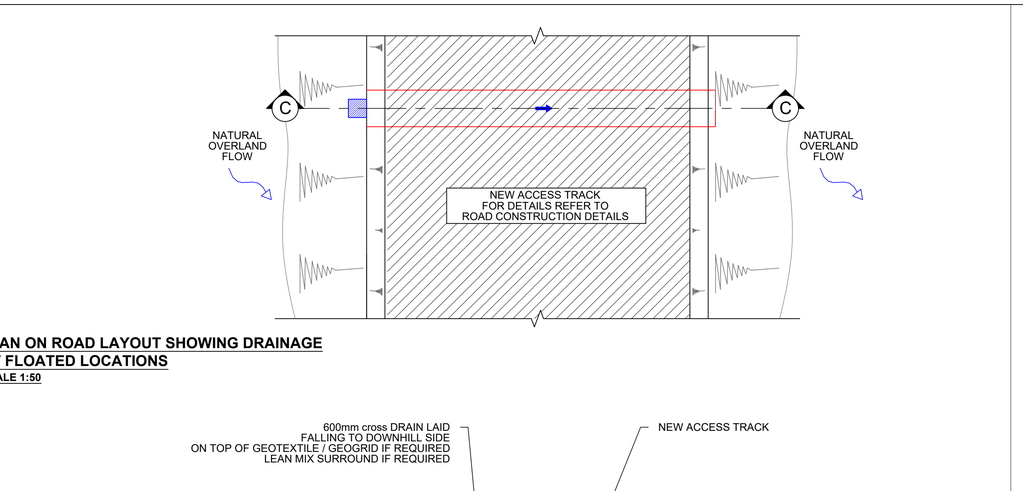
PLAN ON ROAD LAYOUT SHOWING DRAINAGE AT FLOATED LOCATIONS

SCALE 1:50



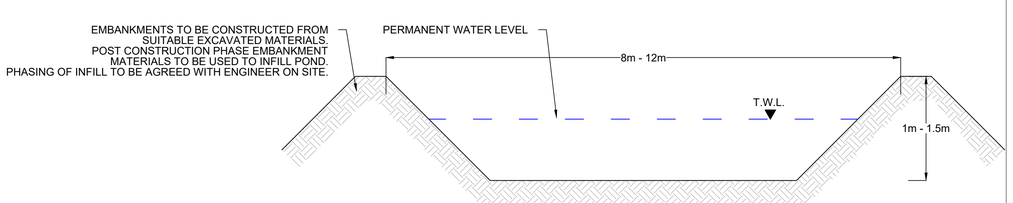
SECTION C-C

SCALE 1:50



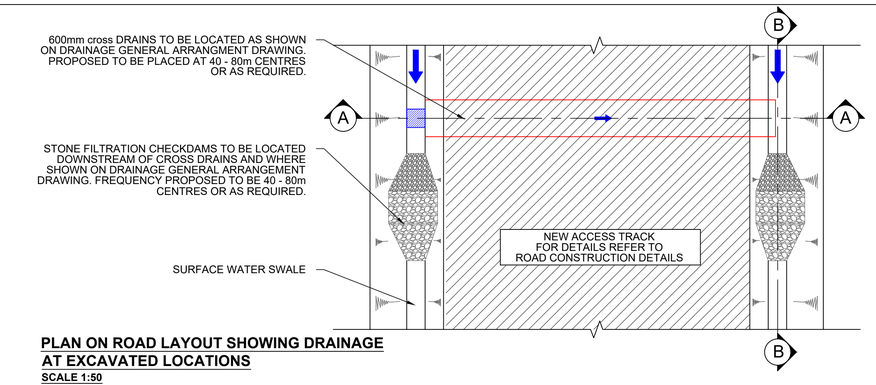
SETTLEMENT POND - PLAN

SCALE 1:100



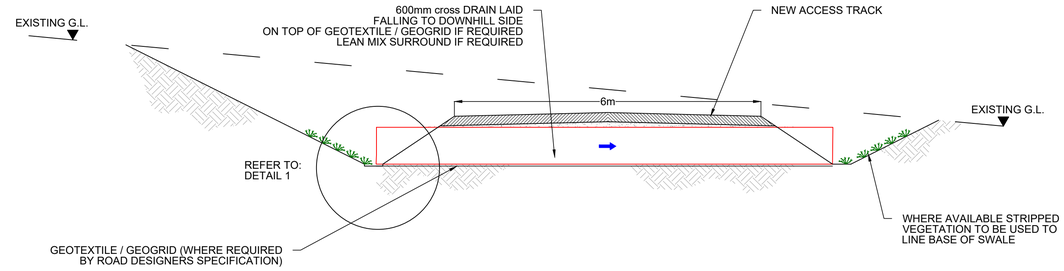
SECTION D-D

SCALE 1:50



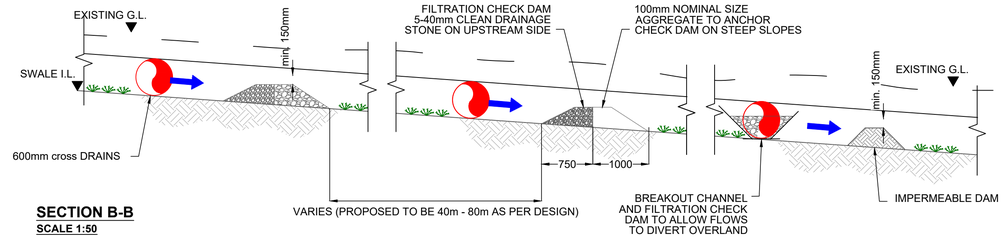
PLAN ON ROAD LAYOUT SHOWING DRAINAGE AT EXCAVATED LOCATIONS

SCALE 1:50



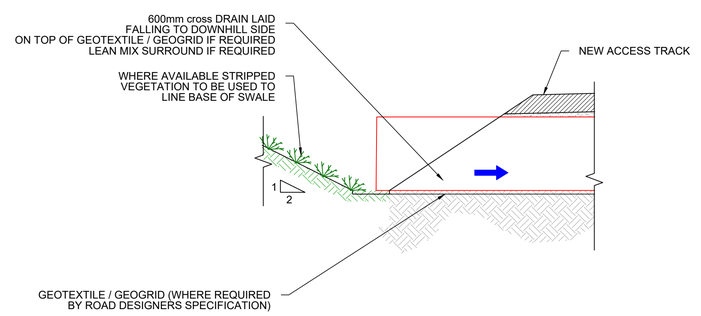
SECTION A-A

SCALE 1:50



SECTION B-B

SCALE 1:50



DETAIL 1

SCALE 1:25

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Rev	Date	Description	By	Chkd.
A	26.11.25	PLANNING ISSUE	MN	AM

Client: MANOGATE LTD.

Project: BALLYFASY WIND FARM PLANNING APPLICATION

Title: SURFACE WATER DETAILS

Scale @ A1: As Shown

Prepared by: M. Nolan | Checked by: A. Murphy | Date: November 2025

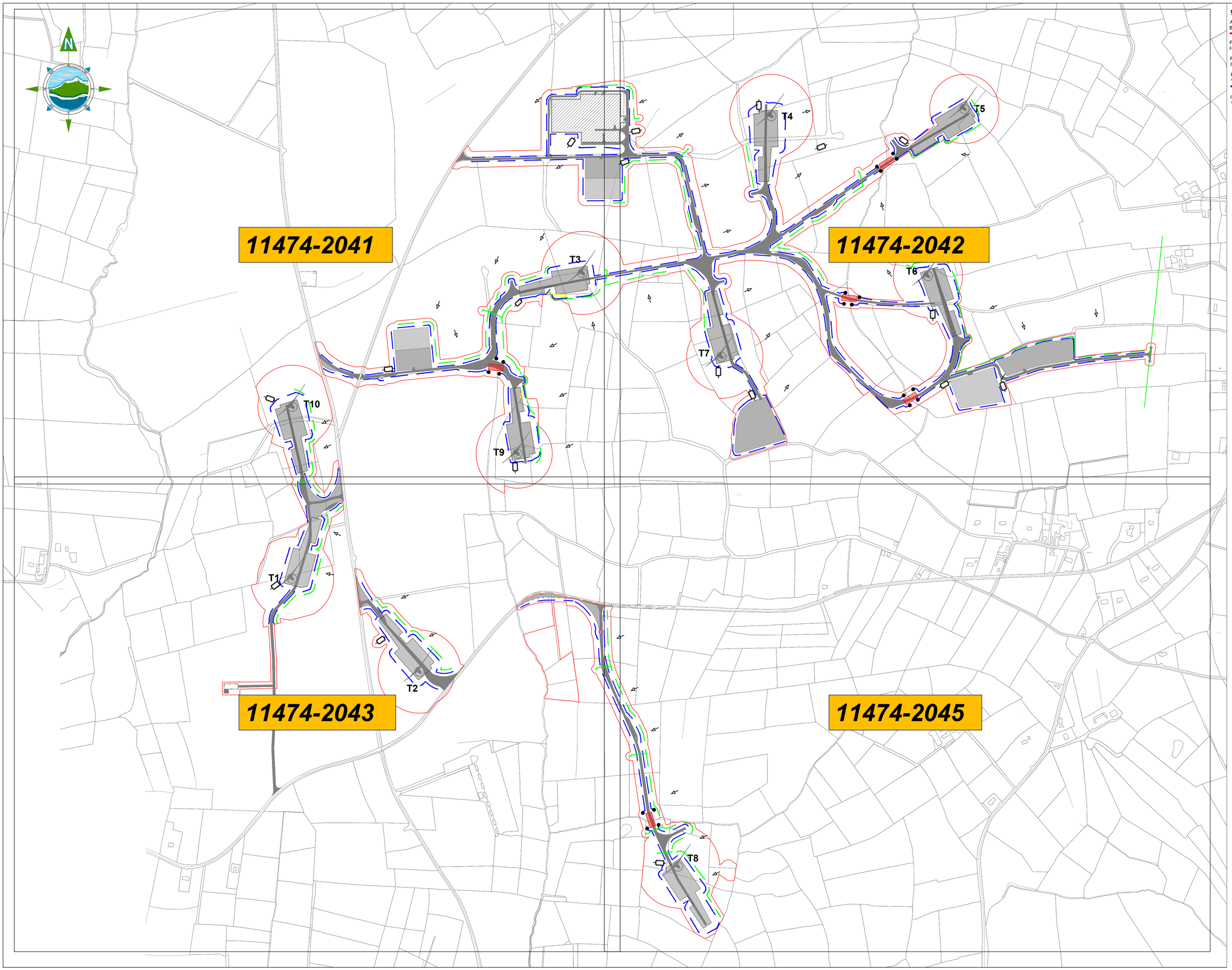
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Drawing No.: 11474-2024

Revision: A



GENERAL LEGEND

APPLICATION BOUNDARY

PROPOSED PERMANENT ACCESS ROAD

PROPOSED TURBINE HARDSTAND

PROPOSED TURBINE LOCATION

PROPOSED CLEAR SPAN BRIDGE

SURFACE WATER SETTLEMENT POND

PROPOSED SURFACE WATER DRAINAGE

PROPOSED SILT FENCE

INTERCEPTOR DITCH

NOTES:

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Rev	Date	Description	By	Chkd.
A	26.11.25	PLANNING ISSUE	MN	AM

Client: MANOGATE LTD.

Project: BALLYFASY WIND FARM PLANNING APPLICATION

Title: SITE DRAINAGE MASTER PLAN

Scale @ A1: 1:5,000

Prepared by:	Checked by:	Date:
M. Nolan	A. Murphy	November 2025

Drawing Status: Planning

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Drawing No.: 11474-2040

Revision: A

Notes:

1. Intercept drainage and SuDS measures to be constructed prior to access tracks.
2. Access tracks design and construction to Engineer's Specification.
3. Check dams will be installed within drainage ditches located within the proposed development site boundary. Check dams will be keyed 200mm into the drain. Well graded stone will be used to complete the check dam to a height of 500 to 750 mm above the invert of the swale/drain. Aggregate size for stone check dams will be between 10-40mm clean stone.
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6. Swales to have a side slope of between 1 : 1 to 1 : 3 depending upon depth of swale/ditch and soil type. Swales will be re-vegetated with local species.
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8. Settlement ponds to be constructed for silt removal at turbine bases, PDAs, substation and borrow pits. Pond sizes depends on catchment area served.
9. Interim measures such as the placement of straw bales/silt fencing/or similar approved method or additional check dams and silt fences.
10. Siltbuster to be available on-site for use as required at borrow pit, substation or turbine bases.
11. Silt fences to be used also around spoil to mitigate silt runoff. silt fences may be removed when suitable vegetation cover is established

PROPOSED SUBSTATION
(Refer to electrical drawings for details).

PROPOSED TEMPORARY COMPOUND (1)
(Refer to Drg. No: 11474-2020 for details).

PROPOSED MATERIAL DEPOSITION AREA (1)
(Refer to Drg. No: 11474-2067 for details).

PERMANENT SITE ENTRANCE (5)
(Construction & Operational Phase)
(Refer to Drg. No: 11474-2055 for details).

PROPOSED CLEAR SPAN BRIDGE
(Refer to Drg. No: 11474-2025 for details).

PROPOSED MATERIAL DEPOSITION AREA (2)
(Refer to Drg. No: 11474-2067 for details).

PROPOSED TEMPORARY COMPOUND (2)
(Refer to Drg. No: 11474-2020 for details).

PROPOSED VEHICLE TURNING HEAD

VEHICLE PASSING BAY

PROPOSED TURBINE LOCATION
(Refer to Drg. No: 11474-2020 for details).

PROPOSED TURBINE HARDSTAND
(Refer to Drg. No: 11474-2021 for details).

PROPOSED TEMPORARY WHEELWASH
(Refer to Drg. No: 11474-2028 for details).

PERMANENT SITE ENTRANCE (1)
(Construction & Operational Phase)
(Refer to Drg. No: 11474-2051 for details).

TEMPORARY ACCESS & ROAD CROSSING (6)
(Construction Phase)
(Refer to Drg. No: 11474-2056 for details).

T3

T10

T9

200 198 196 194 192 190 188 186 184 182

GENERAL LEGEND

- APPLICATION BOUNDARY
- PROPOSED PERMANENT ACCESS ROAD
- PROPOSED TURBINE HARDSTAND
- PROPOSED TURBINE LOCATION
- PROPOSED CLEAR SPAN BRIDGE
- SURFACE WATER SETTLEMENT POND
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SILT FENCE
- INTERCEPTOR DITCH



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Co. Kilkenny

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Rev	Date	Description	By	Chkd.
A	26.11.25	PLANNING ISSUE	MN	AM

Client: MANOGATE LTD.

Project: BALLYFASY WIND FARM PLANNING APPLICATION

Title: DRAINAGE LAYOUT PLAN Sheet 1 of 4

Scale @ A1: 1:2,500 Scale as agreed by An Coimisiún Pleanála 21.11.25

Prepared by: M. Nolan | Checked by: A. Murphy | Date: November 2025

Drawing Status: Planning

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Drawing No.: 11474-2041

Revision: A

T4

T5

T6

T7

PROPOSED TURBINE LOCATION
(Refer to Drg. No: 11474-2020 for details).

PROPOSED TURBINE HARDSTAND
(Refer to Drg. No: 11474-2021 for details).

PROPOSED CLEAR SPAN BRIDGE
(Refer to Drg. No: 11474-2025 for details).

PROPOSED ACCESS ROAD
(Refer to Drg. No: 11474-2023 for details).

VEHICLE PASSING BAY

CLEAR SPAN BRIDGE
(Refer to Drg. No: 11474-2025 for details).

PROPOSED MATERIAL DEPOSITION AREA (3)
(Refer to Drg. No: 11474-2069 for details).

PROPOSED BORROW PIT (BP1)
(Refer to Drg. No: 11474-2065 for details).

PROPOSED BORROW PIT (BP2)
(Refer to Drg. No: 11474-2066 for details).

POTENTIAL CONNECTION
TO EXISTING HV OHL
(Refer to electrical drawings for details).

Notes:

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GENERAL LEGEND

- APPLICATION BOUNDARY
- PROPOSED PERMANENT ACCESS ROAD
- PROPOSED TURBINE HARDSTAND
- PROPOSED TURBINE LOCATION
- PROPOSED CLEAR SPAN BRIDGE
- SURFACE WATER SETTLEMENT POND
- PROPOSED SURFACE WATER DRAINAGE
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- INTERCEPTOR DITCH



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A	26.11.25	PLANNING ISSUE	MN	AM

Client: MANOGATE LTD.

Project: BALLYFASY WIND FARM PLANNING APPLICATION

Title: DRAINAGE LAYOUT PLAN
Sheet 2 of 4

Scale @ A1: 1:2,500 Scale as agreed by An Coimisiún Pleanála 21.11.25

Prepared by:	Checked by:	Date:
M. Nolan	A. Murphy	November 2025

Drawing Status: Planning

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Drawing No.: 11474-2042

Revision: A

PROPOSED TURBINE HARDSTAND
(Refer to Drg. No: 11474-2021 for details).

PROPOSED TURBINE LOCATION
(Refer to Drg. No: 11474-2020 for details).

T1

PROPOSED MET MAST LOCATION
(Refer to Drg. No: 11474-2026 for details).

EXISTING FORESTRY ROAD ACCESS

PERMANENT SITE ENTRANCE (2)
(Construction & Operational Phase)
(Refer to Drg. No: 11474-2052 for details).

PERMANENT SITE ENTRANCE (3)
(Construction & Operational Phase)
(Refer to Drg. No: 11474-2053 for details).

PERMANENT SITE ENTRANCE (4)
(Construction & Operational Phase)
(Refer to Drg. No: 11474-2054 for details).

T2

TEMPORARY ROAD CROSSING (7)
(Construction Phase)
(Refer to Drg. No: 11474-2057 for details).

180 178 176 174 172 170 168 166 164 162 160 158 156 154 152 150 148 146

160 158 156

GENERAL LEGEND

- APPLICATION BOUNDARY
- PROPOSED PERMANENT ACCESS ROAD
- PROPOSED TURBINE HARDSTAND
- PROPOSED TURBINE LOCATION
- PROPOSED CLEAR SPAN BRIDGE
- SURFACE WATER SETTLEMENT POND
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SILT FENCE
- INTERCEPTOR DITCH



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11. Silt fences to be used also around spoil to mitigate silt runoff. silt fences may be removed when suitable vegetation cover is established

Client: MANOGATE LTD.

Project: BALLYFASY WIND FARM PLANNING APPLICATION

Title: DRAINAGE LAYOUT PLAN Sheet 3 of 4

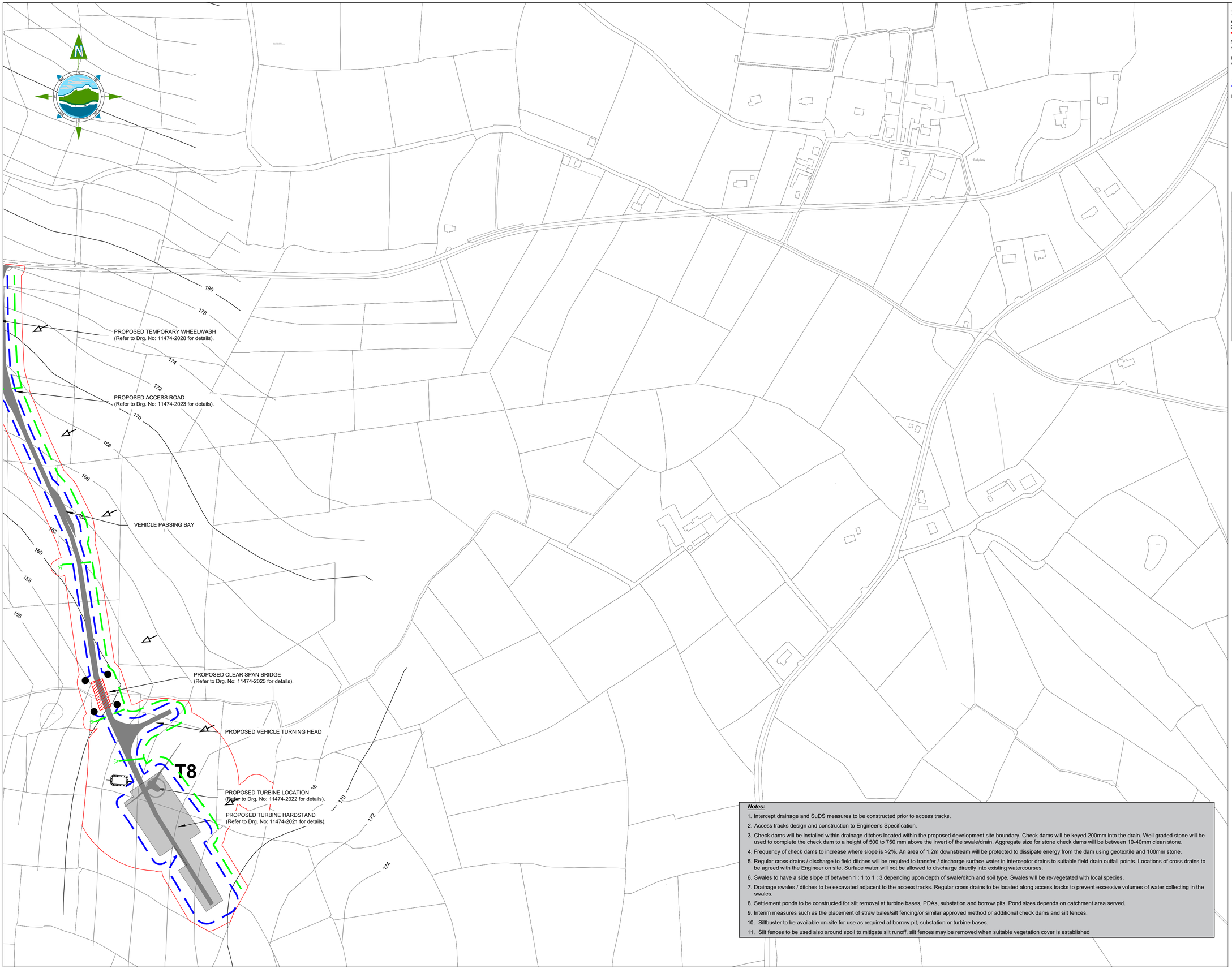
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Prepared by:	Checked by:	Date:
M. Nolan	A. Murphy	November 2025
Drawing Status:	Planning	

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Drawing No.: 11474-2043

Revision: A



GENERAL LEGEND

- APPLICATION BOUNDARY
- PROPOSED PERMANENT ACCESS ROAD
- PROPOSED TURBINE HARDSTAND
- PROPOSED TURBINE LOCATION
- PROPOSED CLEAR SPAN BRIDGE
- SURFACE WATER SETTLEMENT POND
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED SILT FENCE
- INTERCEPTOR DITCH



NOTES:

1. DRAWINGS FOR PLANNING PURPOSES ONLY.
2. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
3. GRID REFERENCES TO ITM.
4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Co. Kilkenny

Tailte Éireann 1:50,000 Sheet No's: 2410, 2412, 2610, 2612.

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Notes:

1. Intercept drainage and SuDS measures to be constructed prior to access tracks.
2. Access tracks design and construction to Engineer's Specification.
3. Check dams will be installed within drainage ditches located within the proposed development site boundary. Check dams will be keyed 200mm into the drain. Well graded stone will be used to complete the check dam to a height of 500 to 750 mm above the invert of the swale/drain. Aggregate size for stone check dams will be between 10-40mm clean stone.
4. Frequency of check dams to increase where slope is >2%. An area of 1.2m downstream will be protected to dissipate energy from the dam using geotextile and 100mm stone.
5. Regular cross drains / discharge to field ditches will be required to transfer / discharge surface water in interceptor drains to suitable field drain outfall points. Locations of cross drains to be agreed with the Engineer on site. Surface water will not be allowed to discharge directly into existing watercourses.
6. Swales to have a side slope of between 1 : 1 to 1 : 3 depending upon depth of swale/ditch and soil type. Swales will be re-vegetated with local species.
7. Drainage swales / ditches to be excavated adjacent to the access tracks. Regular cross drains to be located along access tracks to prevent excessive volumes of water collecting in the swales.
8. Settlement ponds to be constructed for silt removal at turbine bases, PDAs, substation and borrow pits. Pond sizes depends on catchment area served.
9. Interim measures such as the placement of straw bales/silt fencing/or similar approved method or additional check dams and silt fences.
10. Siltbuster to be available on-site for use as required at borrow pit, substation or turbine bases.
11. Silt fences to be used also around spoil to mitigate silt runoff. silt fences may be removed when suitable vegetation cover is established

Rev	Date	Description	By	Chkd.
A	26.11.25	PLANNING ISSUE	MN	AM

Client: MANOGATE LTD.

Project: BALLYFASY WIND FARM PLANNING APPLICATION

Title: DRAINAGE LAYOUT PLAN Sheet 4 of 4

Scale @ A1:	1:2,500	Scale as agreed by An Coimisiún Pleanála 21.11.25

Prepared by:	Checked by:	Date:
M. Nolan	A. Murphy	November 2025

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Appendix A-XI CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

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Ballyfasy Wind Farm, Co Kilkenny

Construction Environmental Management Plan (CEMP)

BUILT ON KNOWLEDGE

Document Control Sheet	
Document Reference	Ballyfasy Wind Farm CEMP
Client:	Manogate Ltd
Project Reference	11474

Rev	Description	Author	Date	Reviewer	Date	Approval	Date
A	Report	SB	30/05/2025	NC	05/11/2025	AM	05/12/2025

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1. INTRODUCTION

Manogate Limited, a development company supported by ART Generation and FuturEnergy Ireland, have applied to An Coimisiún Pleanála for planning permission to construct the proposed Ballyfasy Wind Farm Project in County Kilkenny. The proposed project is described in detail in Chapter 2 of the project Environmental Impact Assessment Report (EIAR) and comprises:

- The wind farm site to include a wind farm of 10 no. turbines, an onsite 110 kilovolt (kV) substation and ancillary infrastructure such as turbine foundations, hardstanding areas, borrow pits and access roads;
- Grid Connection Options (GCO) (two options being considered); and
- Works along the proposed Turbine Delivery Route (TDR).

The proposed project is the subject of two separate planning applications. The first application is for the proposed wind farm and on-site 110 kV substation along with the works on private lands along the proposed TDR. The second application is for the proposed grid connection. This Construction Environmental Management Plan (CEMP) considers the project as a whole.

1.1 SITE LOCATION

The site of the proposed wind farm is located in the southern portion of County Kilkenny between the villages of Listerlin (approximately 3 km northeast), Mullinavat (approximately 3.5 km west), Glenmore (approximately 5 km southeast), and Slieverue (approximately 9 km south).

The topography of the wind farm site varies from around 140 metres Ordnance Datum (mOD) to 220 mOD. The highest points are found in the north-east areas, while the southwest corner has the lowest elevation.

The landscape is agricultural with areas of coniferous forestry occurring mainly to the north and south. Two watercourses traverse through the wind farm site; the Arrigle River and the Smartcastle Stream. The source of the Arrigle River occurs in the north, and flows in a northerly direction. The Smartcastle Stream, which is situated towards the south, flows in a southerly direction.

1.2 BRIEF PROJECT DESCRIPTION

Design flexibility has been sought from An Coimisiún Pleanála for the turbine ranges used by the project. The 10 no. wind turbines on site will have a maximum blade tip height range from 170 m-180 m inclusive, a rotor diameter range from 149 m-163 m inclusive, and a hub height range from 95 m-105.5 m inclusive, and all associated foundations and hard-standing areas respective of each turbine.

<u>Works at the proposed wind farm site</u>

- Erection of 10 no. wind turbines with a maximum blade tip height range from 170 m-180 m inclusive, a rotor diameter range from 149 m-163 m inclusive, and a hub height range from 95 m-105.5 m, and all associated foundations and hard-standing areas respective of each turbine;
- A new site entrance with access onto the Local Road L3417;
- Modifications at one existing site entrance with access onto the Local Road L3417;
- Modifications to two existing site entrances with access onto the Local Road L7499;

- Modifications at one existing site entrance with access onto Local Road L3424;
- A temporary road crossing location to allow turbine delivery along the Local Road L3417;
- A temporary crossing location to allow turbine delivery along the Local Road L7499;
- A temporary crossing location to allow turbine delivery along the Local Road L3424;
- Construction of 2 no. temporary construction compounds with associated temporary site offices, parking areas and security fencing;
- Three no. temporary deposition areas;
- Construction of 5 no. clear span bridges;
- Installation of 1 no. permanent meteorological mast up to a height of 100 m with a lightning finial extending above the mast;
- Two no. borrow pits;
- Construction of new internal site access roads and upgrade of existing site roads, to include passing bays and all associated drainage;
- Two no. temporary construction stage Moby Dick type wheel wash systems (with over ground settlement tank);
- Construction of drainage and sediment control systems;
- Construction of 1 no. permanent 110 kilovolt (kV) Air Insulated Switchgear (AIS) Electrical Substation with associated compound. The substation will be configured as either a tail-fed design or a loop-in design, depending on the final grid connection arrangement. The substation compound will include:
    - 1 no. EirGrid Control Building containing, a Relay Room, Battery Room, Generator Room, Messroom, WC, and Workshop/ Store Room;
    - 1 no. Independent Power Producer (IPP) Control Building containing a Switchgear Room, Control Room, Office, Messroom, WC, Control Room, and Store Room;
    - Lightening Masts;
    - A Telecommunications mast;
    - Parking;
    - Security Palisade Fencing;
    - Electrical Plant and Infrastructure and Grid Ancillary Services Equipment;
    - Drainage Infrastructure;
    - All associated and ancillary works;
- All associated underground electrical and communications cabling connecting the wind turbines to the proposed wind farm substation;
- All related site works and ancillary development including berms, landscaping, ecological enhancement and soil excavation; and
- Ancillary forestry felling to facilitate construction and operation of the proposed project.

<u>Turbine Delivery Route Works</u>

The proposed project also comprises works on the public road network and at private properties to accommodate the delivery of turbine components and oversized loads (see EIAR Appendix 2-1). Four private locations (locations 10, 13, 14 and 15) require works to facilitate turbine and

oversize load deliveries. The Preliminary Route Assessment which details the required TDR works at each location for the project is presented in EIAR Appendix 2-1.

Grid Connection

Two options for the grid connection are considered to connect the proposed project to the national grid.

Grid Connection Option (GCO) One proposes to install a 110 kV underground cable from the proposed onsite substation to the consented Castlebanny Wind Farm 110 kV substation 12 km to the north. This option also includes a construction site compound and a temporary deposition area along the cable route.

GCO Two will connect the onsite substation with the existing 110 kV Great Island-Kilkenny overhead line which crosses 2.3 km to the east of the proposed wind farm site. All works are within the wind farm site.

A single grid connection will be constructed for the proposed project and will become a permanent component of the Irish national grid network.

1.3 Construction Environmental Management Plan (CEMP)

This CEMP has been prepared to present the proposed management and administration of site activities for the construction phase of the proposed project, to ensure that all construction activities are undertaken in an environmentally responsible manner. This CEMP summarises the environmental commitments related to the construction of the project, and the measures to ensure compliance with legislation and the requirements of statutory bodies, all as detailed in the project EIAR and Natura Impact Statement (NIS).

This CEMP will be a live document and will be reviewed and updated, as necessary. Upon appointment, the Main Contractor for construction of the proposed project shall update this document to produce an updated version of the CEMP (i.e. the Contractor's CEMP) which will account for any additional requirements set out in Planning Conditions.

The CEMP provides a summary of the requirements from relevant guidance, standards, and codes of practice applicable to the work being undertaken as part of the proposed project. The following is a non-exhaustive list of relevant guidance/standards/codes referenced in the preparation of this CEMP:

- Environmental Protection Agency (EPA), Guidelines on the Information to be contained in Environmental Impact Assessment Reports (May 2022);
- Department of Housing, Planning and Local Government (DHPLG), Draft Revised Wind Energy Development Guidelines (December 2019);
- Department of Environment, Heritage and Local Government (DEHLG), Wind Energy Development Guidelines (December 2006);
- EPA Best Practice Guidelines for the preparation of resource & waste management plans for construction & demolition projects (November, 2021);
- Inland Fisheries Ireland (IFI) Guidelines on the Protection of Fisheries During Construction Works in and Adjacent to Waters (IFI, 2016);

- Construction Industry Research and Information Association (CIRIA) C532 publication 'Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors' (CIRIA, 2001);
- CIRIA C648 publication 'Control of water pollution from linear construction projects' (CIRIA, 2006);
- CIRIA C741 publication 'Environmental Good Practice on Site' (4th Edition) (CIRIA, 2015);
- CIRIA C750, 'Groundwater control: design and practice' (CIRIA, 2016);
- CIRIA C697 & C753F publications 'SuDS Manual' (CIRIA, 2007 & 2015);
- National Roads Authority (NRA) (2008). Guidelines for the Crossing of Watercourses during the Construction of National Road Schemes. National Roads Authority;
- Irish Working Group on Groundwater (2005) Guidance Document GW5, Groundwater Working Group (WGGW) 2005;
- British Standards Institution (BSI), BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Noise;
- BSI, BS 5228: Part 1 and the European Communities (Construction Plant and Equipment) (Permissible Noise Levels);
- Scottish Natural Heritage (SNH) (2019) 'Good Practice during Wind Farm Construction' (4th edition). Scottish Natural Heritage;
- The Institute of Air Quality Management (IAQM) publication 'Guidance on the Assessment of Dust from Demolition and Construction ' (2014);
- Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes published by the NRA (now TII) in 2011;
- The Control of Dust and Emissions during Construction and Demolition published by the Greater London Authority (GLA) in 2014; and
- Eastern Regional Fisheries Board (2004) guidance document "Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites".

1.4 OBJECTIVES OF THIS CEMP

The objectives of the CEMP are to:

- Outline the proposed mechanisms for ensuring the delivery of environmental measures to avoid or reduce environmental effects identified;
- Ensure procedures are in place so that there is a prompt response to effects requiring remediation, including reporting and any additional mitigation measures required to prevent a recurrence;
- Provide an outline of the content that would be supplied in the construction method statements and strategies that would be prepared in order to secure mitigation measures in relation to different design aspects of the proposed development;
- Ensure compliance with legislation and identify where it would be necessary to obtain authorisation from relevant statutory bodies;
- Ensure that appropriate proposed development monitoring and reporting would be in place;
- Provide a framework for reporting, compliance auditing and inspection to ensure environmental aims would be met; and



- Set out the client's expectations to guide contractors on their requirements with regards to environmental commitments and environmental management.

1.5 Implementation and Control of the CEMP

In terms of overall environmental responsibility, everyone on site is responsible for ensuring that their actions constitute good environmental practice. All site personnel are charged with following good practice and encouraged to provide feedback and suggestions for improvements. All site personnel are also required to ensure compliance with the requirements of the CEMP.

Compliance with the CEMP, the procedures, work practices and controls will be mandatory and must be adhered to by the Contractor, all site personnel, and sub-contractors employed during the construction phase. The CEMP seeks to:

- Provide a basis for achieving and implementing the construction related mitigation measures identified in the EIAR and NIS; and
- Promote best environmental on-site practices for the duration of the construction phase.

1.6 Revisions to the CEMP

As mentioned above, the CEMP is considered a 'live' document and as such will be reviewed on a regular basis to allow any changes to construction programme, operations or unforeseen issues be incorporated at any stage throughout the project as deemed necessary by the Applicant, their agents or relevant authorities. The CEMP will be subject to continual review to address, for example:

- Any conditions stipulated in the planning approval;
- Any requirements/issues highlighted through consultations prior to works e.g. by the National Parks and Wildlife Service (NPWS), Kilkenny County Council etc.;
- To ensure it reflects best practice at the time of construction; and
- To ensure it incorporates the findings of any pre-construction site investigations.

This CEMP will be provided to the appointed Main Contractor who will have responsibility for updating the document as necessary through the construction phase.

The Contractor's CEMP will incorporate the conditions associated with any grant of planning for the proposed project. This CEMP will be subject to ongoing review (throughout the construction phase of the development), through regular environmental auditing and site inspections. This will confirm the efficacy and implementation of all relevant mitigation measures and commitments identified in the application documentation.

The appointed Contractor is required to include further details and/or confirmation in the updated version of the CEMP which will include:

- Details of emergency plan including personnel and contact numbers;
- Site and traffic signage; and
- Method statements.

The appointed Contractor shall also agree and implement monitoring measures to monitor the effectiveness of the CEMP.

1.6.1 Environmental Awareness and Control

In order to ensure that environmental awareness and compliance is communicated effectively at the start and throughout the construction works, this CEMP and its contents will be communicated to all site personnel, including management staff, operatives and sub Contractors. The key elements of this CEMP will form part of the site induction which will be mandatory for all employees, Contractors and visitors attending the site. Environmental toolbox talks will be provided to all site personnel and sub-consultants on a regular basis. These will be targeted at particularly sensitive environmental issues such as:

- Protection of sensitive ecological habitats and key ecological receptors;
- Works close to sensitive water bodies;
- Invasive species management;
- Water pollution and silt control;
- Water pollution in relation to cement and concrete handling;
- Spill prevention and control; and
- Dust management.

1.7 Emergency Response Plan (ERP)

The Contractor will be responsible for developing a detailed environmental Emergency Response Plan (ERP) for the proposed works, to cover environmental emergencies, as part of the Health & Safety Plan. Details related to the ERP are outlined in Section 6 of this CEMP.
Further information relating to the management of spills or leaks and the procedure for responding to an environmental incident is outlined in Section 6 of this CEMP.

1.8 Incidents and Complaints

Details related to the incidents / complaints are outlined in Section 6.2.4 of this CEMP.

2. SCOPE OF THE CEMP

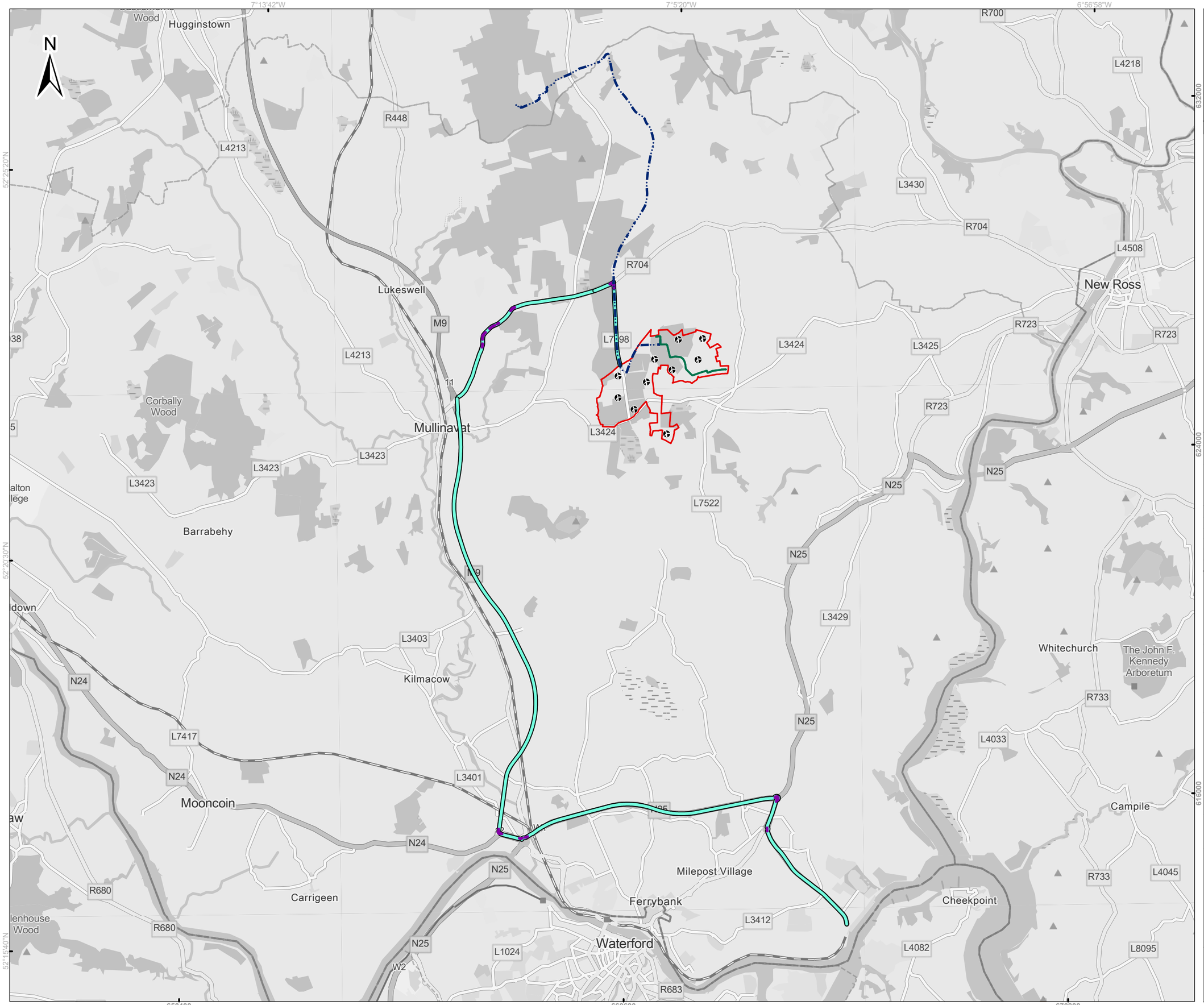
The purpose of this document is to communicate the environmental obligations that apply to all Contractors, their sub-Contractors and personnel while carrying out any form of construction activity for the development of the proposed project.

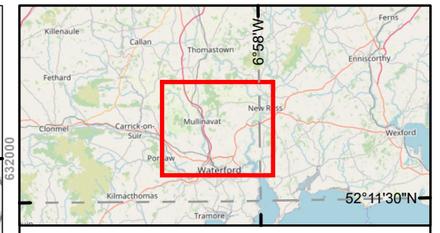
This CEMP should be read in conjunction with the Planning Documents and Drawings, the EIAR, NIS, and the construction stage elements of the Traffic Management Plan (TMP) (see Appendix 16-1 of the EIAR). The CEMP draws from relevant good practice guidance, standards, and codes of practice applicable to the work being undertaken as part of the proposed project. The documents used to prepare the CEMP are listed in the reference section at the end of this document.

The CEMP is a live document that will evolve during the project. As such it will be subject to constant review to address:

- Any conditions attached in the planning permission;
- To ensure it reflects best practice at the time of construction;
- To ensure it incorporates the findings of pre-construction site investigations;
- Changes resulting from the construction methods used by the contractor(s); and
- Unforeseen conditions encountered during construction.

This CEMP provides a mechanism for ensuring compliance with environmental legislation and statutory consents. It defines the approach to environmental management at the site during the construction phase and addresses all relevant environmental aspects of the management of site preparation and construction work within the development works area.





Legend

- Wind Farm Study Area
- Turbine locations
- TDR Works Areas
- Turbine Delivery Route

Grid Connection Options

- Option 1
- Option 2

0 1.5 3
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	08/12/2025	First issue	S.P	A.M

Client: Manogate Ltd.

Project: Ballyfasy Wind Farm

Title: Figure 2-1: Proposed Project Extent

Scale @ A3: 1:80,000

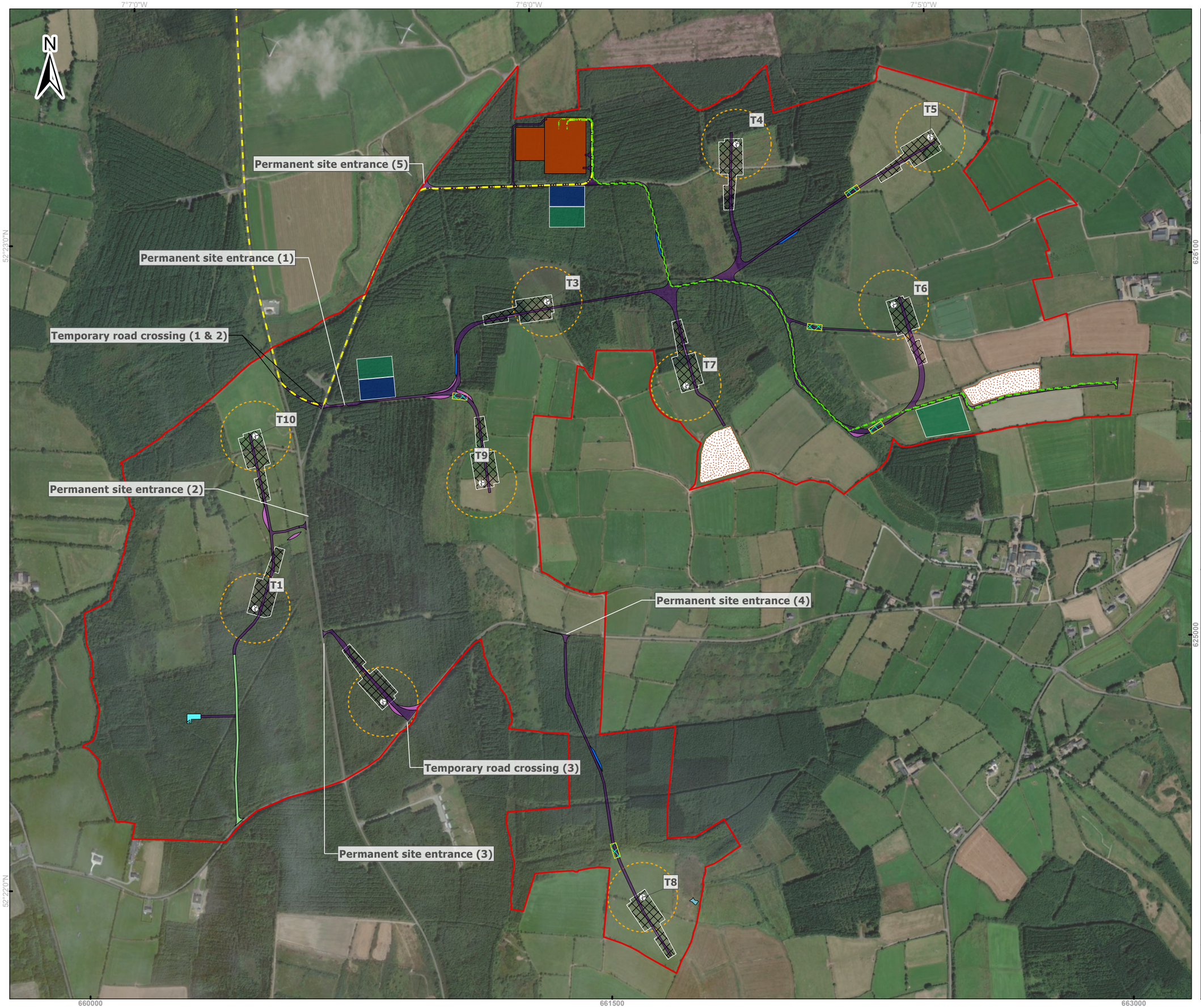
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S.Pezzetta	A.Murphy	December 2025

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Legend

- Wind Farm Study Area

Grid Connection Options

- Option 1
- Option 2

Site Layout

- Turbine locations
- Bat Buffer
- Hardstand
- Substation
- Compounds
- Met Mast Location
- Borrow Pits
- Proposed Permanent Access Roads
- Proposed Passing Bay
- Existing Road
- Clear Span Bridges
- Proposed Deposition Area
- Oversail Area
- Proposed Pond

0 250 500
Meters

Spatial Reference
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Rev	Date	Description	By	Chkd.
A	08/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-2:
Wind Farm Site Layout

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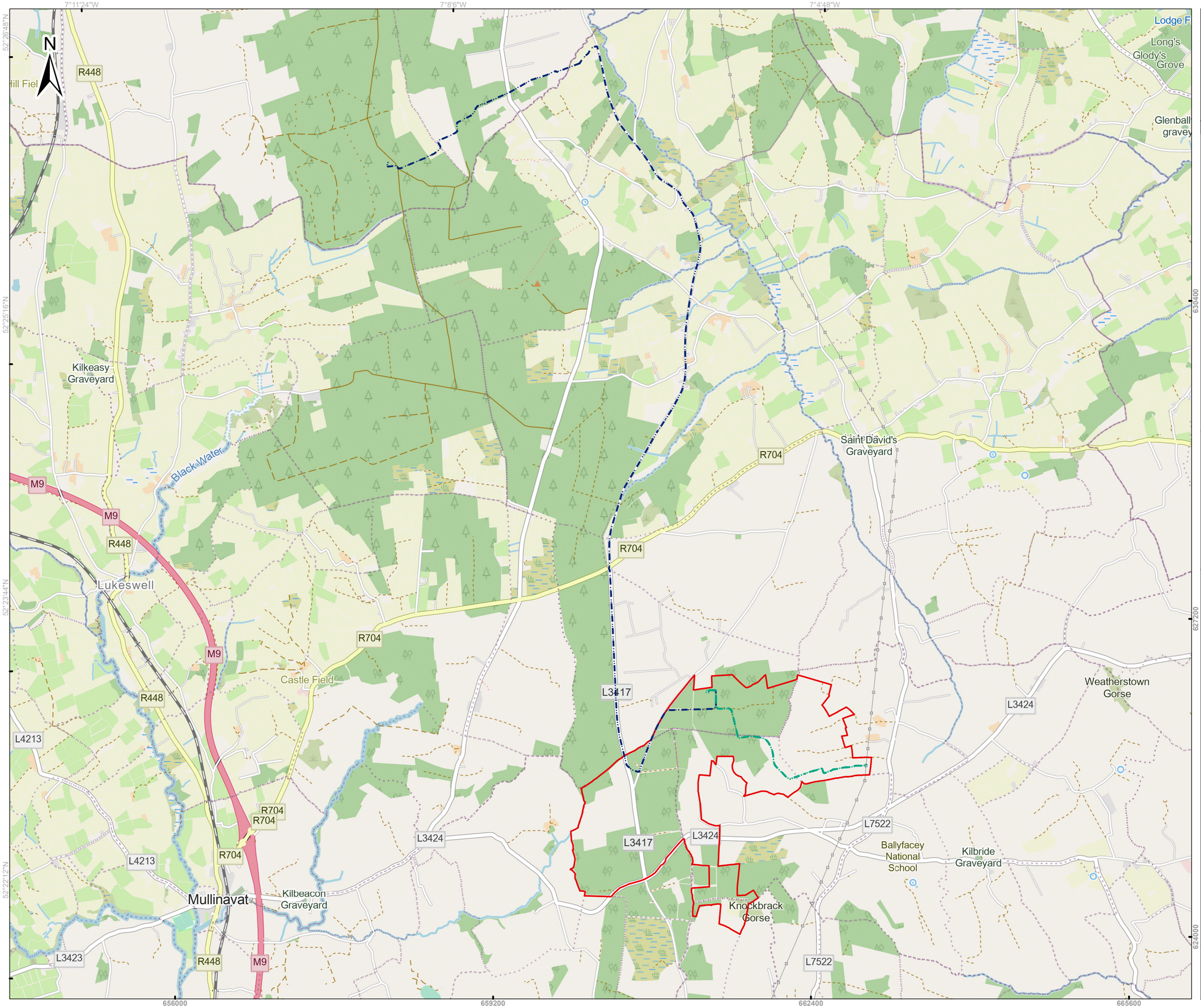
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S.Pezzetta	A.Murphy	December 2025

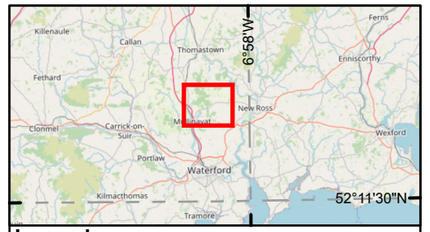
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Legend

- Wind Farm Study Area

Grid Connection Options

- Option 1
- Option 2

0 1 2
Kilometers

Spatial Reference
Datum: IRENET95
EPSG: 2157

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Rev	Date	Description	By	Chkd.
A	08/12/2025	First issue	S.P	A.M

Client:
Manogate Ltd.

Project:
Ballyfasy Wind Farm

Title:
Figure 2-3:
Grid Connection Options

Scale @ A3: 1:35,000

Prepared by:	Checked by:	Date:
S.Pezzetta	A.Murphy	December 2025

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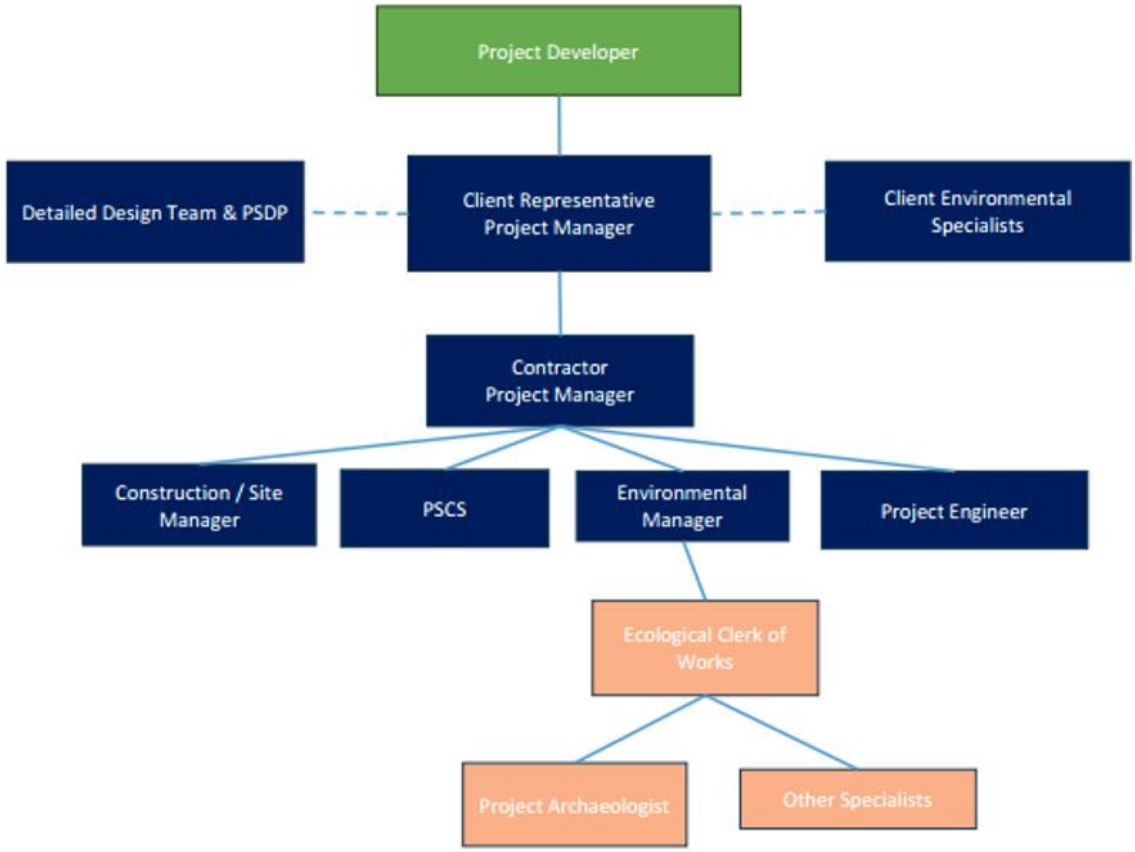
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2.1 KEY ROLES AND RESPONSIBILITIES

At this stage it is envisaged that the following roles will be appointed for the construction phase of the proposed project; Construction/ Site Manager; Environmental Manager, Ecological Clerk of Works (ECoW); Project Geotechnical Engineer / Geologist; and Project Archaeologist.

The names and contact details of the individuals with responsibility for implementation and supervision of mitigation measures during all phases of the development will be clearly identified and set out in documents such as the Contractor's CEMP and site- specific method statements as appropriate.

Summary details of these roles are outlined in the following sections. At construction stage, the Contractor's CEMP will confirm roles and finalise responsibilities and contact details once appointed.



2.1.1 Construction Site Manager

A suitably qualified Construction / Site Manager will be appointed by the Contractor for the duration of the construction period. The Construction / Site Manager will have overall responsibility for the organisation and execution of all related environmental activities as appropriate, in accordance with regulatory and project environmental requirements.

2.1.1.1 Environmental Manager

The Environmental Manager will ensure compliance with all relevant environmental regulations, and environmental quality control on-site during the construction stage. The Environmental Manager will be responsible for:

- The daily implementation of the CEMP and any other monitoring/mitigation proposals required under the planning consent;
- Ensuring that the objectives of the CEMP are achieved and maintained;
- Informing the appointed contractor(s) of the CEMP and ensuring that appropriate training and awareness materials are developed and implemented on-site;
- Co-ordinating and monitoring the inputs from the ECoW, Project Geotechnical Engineer and Project Archaeologist;
- Implementing appropriate measures in the event of any environmental incidents and managing communications with relevant authorities; and
- Regular communication with the Construction/Site Manager detailing the execution and progress of environmental activities on-site.

2.1.1.2 Ecological Clerk of Works

The role of the ECoW is defined by British Standard BS 42020:2013[1] as "*person who has the ecological qualifications, training, skills and relevant experience to undertake appropriate monitoring and to provide specialist advice to "development" site personnel on necessary working practices required to i) safeguard ecological features on site and ii) aid compliance with any consents and relevant wildlife legislation related to the works.*".

Typically, the requirements of the ECoW role is largely fulfilled by a single individual, with support and assistance provided by technical specialists and senior colleagues when required, and will include:

- The ECoW (individual or team of individuals) must therefore have appropriate qualifications, training and experience to meet the requirements of the role and in addition, where needed, can access support from senior ecologists within the company with the required qualifications, training and experience;
- The ECoW will have the power to "Stop Works" at any time they deem it necessary to do so;
- The ECoW will be responsible for monitoring compliance with the mitigation measures and construction phase monitoring requirements relating to ecology / biodiversity as set out project EIAR, NIS and supporting documents such as the, CEMP etc.;
- The ECoW will be responsible for the day to day management and interaction with the project Environmental Manager;
- The ECoW will have authority over the content of routine reports and will act independently in determining instances of non-compliance with the consents and licenses or any breaches of environmental legislation;

- The ECoW will provide the contractors team, with advice on environmental issues and compliance with planning conditions, commitments etc. as required. This includes managing certain activities that may be required in discharging consent conditions. The ECoW will inform the Contractor and Project Developer Teams of any information that could increase the risk of a non-compliance and/ or require a new licence, consent or approval.

During construction there will be occasions when the ECoW will be required to rapidly respond to unplanned events such as any wildlife incidents, pollution incidents, etc. The ECoW will have a very specific role within the emergency response teams responding to these incidents. Further detail is provided in Section 6.0. The ECoW will also be expected to support the project team in resolving any other unplanned events that are not classified as emergency responses or incidents.

Non-Compliance Events

The ECoW shall produce a procedure setting out the sequence of actions to be completed and the lines of communication required to resolve and appropriately report on a non-compliance event relating to ecology/biodiversity, should one occur.

This procedure shall be approved by the Project Developers team prior to construction commencing. The ECoW, and any other individual present on-site, has a duty of care to report any wildlife crime or breach of environmental legislation to the Project Developer. The Project Developer must report such breaches to the relevant authorities.

Reporting and Follow up

After the ECoW has responded to an incident or non-compliance event the ECoW will produce a report to the Environmental Manager for approval before it is issued to the Project Developer. The report will set out the following information as a minimum;

- Precise details of the event and those involved;
- Assessment of impact and severity (method for assessment to be developed by ECoW);
- Mitigation introduced;
- Subsequent revision of risk assessments and construction method statements and/or construction programme; and
- Lessons learnt.

Ad-Hoc Advice and Support

The ECoW will provide the Contractors Team, with advice on environmental issues and compliance with planning conditions, commitments etc. as required. This includes managing certain activities that may be required in discharging consent conditions.

2.1.2 Project Geotechnical Engineer / Geologist

The Geotechnical Engineer / Project Geologist will report to the Environmental Manager and is responsible for inspection and review of geotechnical aspects associated with construction stage of the project. The Geotechnical Engineer / Project Geologist will be full time on-site during the site preparation and groundworks (such as excavation activities) and will visit site regularly at agreed periods during the construction phase.

2.1.3 Project Archaeologist

The Project Archaeologist will report to the Environmental Manager and is responsible for inspection and review of any finds discovered during the construction of the project. The Project Archaeologist will monitor all stripping of topsoil for the proposed project, including the proposed grid connection.

2.2 Compliance Audits and Communications

The ECoW and Environmental Manager will develop appropriate procedures and programmes for the following non exhaustive list of items:

- Environmental Audits, a programme of planned and spot check audits shall be developed and approved by the client;
- A programme of toolbox talks shall be developed. Toolbox talks covering relevant topics during construction;
- The ECoW and Environmental Manager will support the project team in producing site induction material tailored to the different activities carried out on site, and ensuring this material is appropriately incorporated into the overall project induction material. This will require attendance to project meetings, and production of material relevant to planning conditions and Environmental Legislation. The toolbox talks and site inductions shall include information on the role of the ECoW in the event of an incident;
- The ECoW shall ensure this information is included in the relevant induction and toolbox talk material. Once the above programmes and plans have been agreed, the Environmental Manager will be responsible for managing these plans and conducting the necessary audits, toolbox talks etc.;
- The ECoW shall check progress, and the Environmental Manager will be reporting on progress against the programmes, plans and status of completed audits, toolbox talks etc to the ECoW on a daily basis;
- The ECoW will be required to report on audits and toolbox talks delivered in the monthly compliance report; and
- Occasionally the ECoW will be required to deliver toolbox talks and produce site induction material depending on the topic being considered.

2.3 Facilities, Safety and Security

The proposed Ballyfasy Wind Farm project will be constructed, in accordance with all relevant Health and Safety Legislation.

Aspects of the development that will present health and safety issues include:

- Health and safety aspects of construction activities;
- General construction site safety (e.g. slip/trip, moving vehicles etc);
- On site traffic safety during construction associated with localised high road embankments;
- Traffic safety during the transport of abnormal loads to the site;
- Lifting of heavy loads overhead using cranes;
- Working at heights; and
- Working with electricity during commissioning.

A (Preliminary) Health and Safety (H&S) Plan covering all aspects of the construction process will address the Health and Safety requirements in detail. This will be prepared prior to the construction stage by the Project Supervisor for the Design Process (PSDP).

Rigorous safety checks will be conducted on the turbines during construction. Signs will be erected at suitable locations across the site as required.

3. CONSTRUCTION PROGRAMME

It is estimated that the construction phase will take approximately 24 months from starting onsite to completion of commissioning of the turbines. Where practical, vegetation clearance that is required during construction works will commence outside the breeding birds season, which runs from the 1st of March to the 31st of August. If any minor clearance or trimming is required within those dates, or if the initial vegetation clearance extends past the 1st of March due to unsuitable weather conditions, the works will be preceded by an ecological survey (from a qualified and suitably experienced ecologist) to ensure there are no sensitivities associated with the action.

The construction phase can be broken down into 5 no. main phases as follows (there will be overlap between these):

- 18 months – Civils (including forestry felling and vegetation clearance, drainage, construction of site roads, hardstands, turbine foundations);
- 9 months – Electrical grid connection/substation installation and commissioning;
- 12 months – Site electrical (installing between turbines and substation, pulling cables);
- 4 months – Turbine deliveries and erection;
- 2 months – Commissioning.

3.1 CONSTRUCTION HOURS

The hours of construction activity will be limited to avoid unsociable hours, where possible. Construction operations will be restricted to between 07:00 hrs and 19:00 hrs Monday to Friday (excluding public holidays) and between 07:00 hrs and 14:00 hrs on Saturdays.

However, during the following critical periods longer hours will be required:

- Concrete pours for turbine foundations;
- During turbine installation when the weather is suitable (i.e. light winds);
- Delivery of oversized loads; and
- In the unlikely event of an emergency (see Section 4 Emergency Response Plan / Procedures of this CEMP).

Any such out of hours working will be agreed in advance with Kilkenny County Council apart from in the case of an emergency and in line with the Schedule of Mitigation requirements of the EIAR (Chapter 19 (Schedule of Mitigation)).

3.1.1 Employment

It is anticipated that 74 persons will be directly employed during the peak construction period.

4. CONSTRUCTION METHODOLOGIES

4.1 OVERVIEW OF CONSTRUCTION METHODOLOGIES

4.1.1 Turbine Hardstand, Foundations and Erections

The topsoil will be stripped where development of the hardstands is proposed. Hardstands will be constructed flat at a level close to existing ground level where possible, with the exception of areas where existing site topography requires the hardstand to be constructed in an area of cut or fill for construction and / or turbine delivery purposes.

Ground investigations in the form of trial pitting, probing, and use of augers have been carried out at the proposed turbine locations and hardstanding locations to inform the depth of excavation and upfill required. Following site visits and site design, volume calculations provide an estimation of fill required for the hardstands. This is predicted to be approximately 70,000 m^3 of stone material. This material volume will be obtained primarily from the on-site borrow pits with only the surface 150 mm layer to come from local quarries which are within reasonable proximity to the site. Each turbine foundation will require 1543 m^3 of concrete which will be sourced from off-site suppliers. No batching of concrete will occur on site. Further site investigations will be undertaken pre construction to inform the site detailed design and all works will be monitored by a geotechnical engineer.

The geotechnical investigations indicate that the foundations at the proposed wind farm will be excavated. Piling is not anticipated to be required.

Each of the turbines to be erected on site will have a reinforced concrete base. Overburden will be stripped off the foundation area to a suitable formation using a 360º excavator. The sides of the excavated areas will be sloped sufficiently (2:1 for mineral soil, 1:1 for rock) to ensure that slippage does not occur.

In the case of gravity foundations, if the formation level is reached at a depth lower than the depth of the foundation, the ground level will have to be raised with clause 804 hardcore material and/or lean mix concrete, compacted in layers as required. An interceptor drain will be formed around the upgradient perimeter of the turbine and hardstand to divert the clean water away from the works. This will outfall out at the lowest point level to a spreader. Water within the excavation will be treated via a settlement pond and level spreader. If the water has a heavy silt load, then an additional measure such as a silt buster will be employed.

An embankment approximately 600 mm high and a fence will be constructed around the perimeter of each turbine base to prevent construction traffic from driving into the excavated hole and also to demarcate the working area. All necessary health and safety signage will be erected to warn of deep excavations etc. Access to and from excavated bases will be formed by excavating a gangway to a standard 1:12 grade, thereby allowing safe passage into/out of the foundation area.

Approved lifting equipment will be used to unload reinforcing steel to required areas. The bottom mat of steel will be fixed prior to the tower cans, if used, being lifted into position and reinforcing steel will be positioned and fixed in accordance with the turbine suppliers' requirements.

Form work to concrete bases will be propped/supported sufficiently to prevent failure by compacting stone around the outside of the forms in addition to straps to prevent

expansion. Concrete for bases will be poured using a concrete pump. After a period of time when the concrete has set sufficiently, the top surface of the concrete surface is to be finished with a power float.

Once the base has sufficient curing time it will be filled with suitable fill (i.e. hardcore) up to existing ground level. The working area around the perimeter of the foundation will be backfilled with suitable material (hardcore). These hardstand areas around the turbines will be levelled, compacted and finished with a suitable surface material for traffic (clause 804 or similar) as per the site access roads and remainder of the hardstand areas.

Turbines will be erected in suitable weather windows (i.e. low wind speed). Following crane setup, the turbine tower sections will be delivered by truck and hoisted into place. This is followed by the nacelle and finally each blade. In accordance with an agreed lifting plan, turbine sections will be lifted by crane into place. Wind speeds will be monitored at all times during lifting operations. Turbine sections will be fitted together by workers within the structure. Following erection of the turbine, lightning protection, lighting and other ancillary components will be installed on the turbine and commissioned.

4.1.2 Turbine Delivery Accommodation Works Area

Where works are needed along the public road corridor to facilitate deliveries to site, they will be agreed in advance with the local authority and carried out to the appropriate road design standard (TII, purple book, etc.) to ensure they will be safe and durable in design.

At the locations where a vehicular surface is needed for the proposed works will start with the clearing of vegetation (grass, hedgerows and scrub), and the topsoil will be stripped and either used locally for landscaping purposes/side cast for later use in local reinstatement or used for borrow pit reinstatement on-site. It will be taken to a local licensed/permitted waste facility if found to contain any contaminants such as bitumen.

Where landscaping does occur, it will be smoothed off with the back of a bucket and seeded with a suitable grass seed mix. Silt control curtains will also be employed within 50 m of a surface watercourse. Suitable fill material (broken stone and clause 804) will be used to create a firm running area for the passage of turbine delivery vehicles. The areas will be fenced off when the delivery is not occurring. After the delivery of turbines to site, the site will be re-instated to the original condition with removal of the temporary surface, and any removed vegetation will be reseeded/replanted with a similar native species composition.

4.1.3 Internal Access Roads and Site Entrances

Site roads will be constructed to each turbine location, and to all proposed site infrastructure, as shown in Figure 2-2. Passing bays will be included along roads strategically. There are two road construction methodologies; upgrading of existing site roads and excavated new road. These are described below in further detail.

Sections of new roads and upgraded roads are shown in EIAR Appendix 1-1 of this EIAR. Where required, the road widths will be increased to form the passing bays.

4.1.3.1 Excavated New Roads

Tracked excavators will be used to carry out excavations. Surplus excavated material will be temporarily stored on site before reuse or removed to a permitted facility.

When the topsoil has been removed and/or the formation layer (bedrock/firm subsoils) has been reached, stone from the on-site borrow pits will be placed to form the road foundation. The sub grade will be compacted with the use of a roller or other similar approved compaction method. The top dressing will be added to the roads at this point. As a final measure to ensure long term stability of the road this layer will be checked and repaired as required after all turbine bases have been poured (i.e. after the heavy wearing traffic is largely finished).

All on-site roads will be maintained for the duration of the construction and operational phases of the project. They will be used for forestry (and agricultural) purposes after decommissioning of the wind farm.

4.1.3.2 Upgrade of Existing Site Roads

The site of the proposed project has an existing network of site roads present which have been incorporated into the proposed design as much as possible.

Where an existing road needs to be widened the same steps as described in the new road construction above will be followed (without excavating the existing road material). There are no significant known constraints running alongside the roads to be upgraded, but where forest or roadside drainage channels are located alongside the road (as they occur frequently through the site), they will be moved as required during dry weather periods where there is no moving water present within. The replacement drain will be constructed as per best practice for forestry drains[1].

Tracked excavators will be used to construct this road type. When the topsoil has been removed and/or the formation layer has been reached, stone from the on-site borrow pits will be placed to form the road foundation. The foundations of the new and existing sections of the road will be built up to the required level. The sub grade will be compacted with the use of a roller or other similar compaction method. The top dressing will be added to the roads at this point. As a final measure to ensure long term stability of the road this layer will be checked and repaired as required after all turbine bases have been poured (i.e. after the heavy wearing traffic is largely finished).

All on-site roads will be maintained for the duration of the construction and operational phases of the project.

4.1.3.3 Site Entrances

There are five permanent site entrances proposed for this project. Four of these are existing entrances which will require modifications. The fifth is a new entrance to facilitate two turbines. There are also three temporary road crossings proposed for this project to enable turbine delivery and reduce the impact on the public road network (see planning drawings in EIAR Appendix 1-1).

4.1.3.4 Clear Span Bridges

Five clear span bridges are required on site to enable access across watercourses. The site access roads will be constructed as far as possible to allow easy access to the works area. Following this, the topsoil will be stripped from the foundation footprint on either side of

[1] Forestry Standards and Procedures, January 2015. Forest Service, Department of Agriculture, Food and the Marine. (Accessed 08/09/25)

the watercourse, taking care to avoid disturbing any part of the watercourse bed or banks. Retaining stone gabion will be placed in the foundation and a concrete base placed on top. Suitable stone fill material (clause 804 or similar) will then be added in layers and compacted to form the base of the foundation. The precast clear-span bridge will be placed onto this either as one or more pieces. This will be put into place by a crane that will be positioned a minimum of 10 m from the watercourse. There will be no requirement for large-scale casting of wet concrete. Following this, barriers will be attached to the sides of the bridge structure.

The construction method will ensure that there is no requirement for in-stream works. This will be sufficiently high off the watercourse to allow unrestricted flow of water beneath. The installation of these bridges will not alter or move the existing watercourse. The bridges will be laid in a manner that will not affect or impede on the existing profile of the watercourse. The foundations and abutments will be constructed without damaging the riparian zone of the watercourse or existing profile. No alteration of the hydraulic characteristics, scouring, deposition or erosion of the watercourse upstream or downstream will occur due to the implementation and operation of the clear span bridges.

The clear span design will maintain the channel profile and not alter the rivers gradient by retaining the natural stream bed and gradient. The water velocity will not be changed and they will be designed to maintain the normal stream width. The foundations of the clear span bridges will be positioned at least 2.5 m away from the edge of the river bank. No damage will occur to the riparian habitat as a result of the installation of the span bridges within 2.5 m of the river.

The bridges will be designed to allow surface water to drain away from the watercourse. The AMO drain will be installed on the lower section of the bridge to ensure the machinery cannot cause discharge of material from the bridge deck into the waters below and will prevent all surface water run to enter the river from the bridge. The water will discharge at a downward slope along the drain to a gravel soak away located >4 m from the bridge. The bridges will not prevent the maintenance of the channel and existing gradient and will have the capacity to convey the full range of river flows including flood flows likely to be encountered without the crossing being over topped. Adequate light will be able to penetrate the river and not cause a reduction in primary production.

4.1.4 110 kV Substation and Electrical Grid Connection Works

The proposed substation has been designed and will be constructed to meet all the required EirGrid/ESB standards.

An area will be levelled and built to the required level with stone fill material, capped by high quality compacted stone. Two control buildings will be constructed using traditional techniques for constructing small buildings (i.e. concrete block walls, timber and slate tile roof). Foundations will be built for all of the proposed electrical infrastructure. All the electrical equipment will be installed to EirGrid/ESB requirements. Perimeter fencing will be constructed around the substation compound for security and safety purposes. Further information on the associated construction methodologies provided in EIAR Appendix 2-2.

A local electricity supply will be made from the nearest suitable power lines at the time of construction in the same way that residential houses are connected. Standard overhead

electricity poles and cables will be installed avoiding sensitive habitats and using a minimal footprint.

Internal cables connecting the wind turbines to the on-site substation will be laid within or immediately adjacent to the on-site access roads. All cables will be laid in underground ducts. Ducts will be installed by open trenching. Where there is a requirement for internal cables to cross watercourses, these will be built into the clear span bridge deck formation or attached to it, or by Horizontal Directional Drilling (HDD) under the watercourse, avoiding any in-stream works.

4.1.4.1 Grid Connection Options

The proposed wind farm will connect to the existing national grid via a 110 kV underground grid connection. The on-site substation and associated grid connection has been assessed in this EIAR, along with the required works to allow connection to the national grid at either the consented Castlebanny Wind Farm substation or on-site loop in to the existing Great Island – Kilkenny overhead line which crosses the east of the wind farm site.

Once fixed into position, the internal site cabling (between turbines and the substation), the substation and the electrical grid connection will all be commissioned. They will remain powered off until the turbines are being commissioned and the wind farm enters into service.

4.1.4.2 110kV Underground Cable Trenches

The number and layout of cables was an important consideration in the design of the proposed wind farm site and both GCOs. Minimum safety distances and angles etc. must always be maintained. This has been a fundamental consideration in determining the final location of the substation buildings and electrical infrastructure. Further information and drawings of the underground 110 kV cable trenches are provided in EIAR Appendix 1-2 of this EIAR, while the associated construction methodologies are provided in EIAR Appendix 2-2. These will be fully complied with when constructing the project.

The 110 kV cables will be installed mainly within an internal access road in the proposed wind farm site, within public roads and across some third party lands. A service/maintenance access road will be put in place over the entire cable option. It is noted that works within the public road corridor will also be subject to further consents/agreements with local authorities, for example a Road Opening Licence as appropriate.

A Traffic Management Plan has been prepared for the proposed project and is included as EIAR Appendix 16-1. This is a living document and will be updated ahead of construction to address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned by An Coimisiún Pleanála, in the event planning permission/approval is granted. Also, a confirmatory survey of road condition, including the condition of all road water crossings on the route, will be carried out along the proposed GCO in advance of any works.

4.1.4.3 Watercourse crossings

Table 4-1 details the proposed methodologies for crossing the given watercourses involved in the wind farm site and grid connection.

Table 4-1: Watercourse crossing details

Watercourse Crossing No.	Project detail	Proposed crossing methodology	In Stream works required?
1	Grid Connection Option One	Horizontal Directional Drilling	No
2	Grid Connection Option One	Horizontal Directional Drilling	No
3	Grid Connection Option One	Horizontal Directional Drilling	No
4	Grid Connection Option One	Horizontal Directional Drilling	No
5	Grid Connection Option One	Horizontal Directional Drilling	No
6	Grid Connection Option One	Horizontal Directional Drilling	No
7	Grid Connection Option Two (southwest of T6)	Horizontal Directional Drilling	No
8	Internal access road south west of T5	Clear Span Bridge	No
9	Internal access road between T9 and Site Entrance 1	Clear Span Bridge	No
10	Internal access road between T8 and Site Entrance 4	Clear Span Bridge	No
11	Internal access road southwest of T6	Clear Span Bridge	No
12	Internal access road from T6 into main site for operational maintenance	Clear Span Bridge	No

4.1.4.4 Crossing Methodology Directional Drilling

A launch and reception pit is required for directional drilling. Two ducts will be required at each crossing location. There will be a 50 m buffer area maintained either side of the watercourse between the watercourse and works area. A specialised directional drill machine will be anchored to the ground and will drill at a suitable shallow angle to allow it to achieve the required depth for the bore. If ground conditions are unfavourable, the drilling process will need to be repeated using progressively larger drill heads until the required size is achieved. The drilling process involves pumping a drilling fluid through the drill head, which is inert, natural and biodegradable (e.g. Clear Bore™). This fluid will be used sparingly and only as required to avoid an excess and will be appropriately stored in a sealed container >50 m from watercourses when not in use. This fills voids locally around the drill head and enables the drill to progress without the hole collapsing. Should any excess drilling fluid occur, it will be contained and removed for disposal at a licensed waste facility. The duct will be positioned, and the launch and reception pits will be refilled.

Further details of construction methodologies are provided in EIAR Appendix 2-2.

4.1.4.5 Clear Span Bridges

Five clear-span bridges will be used for watercourse crossings on the proposed wind farm site to avoid the requirement for in-stream works. Therefore, there will be no direct effect on the watercourses at the proposed crossing locations and downstream. The clear-span bridge will be sufficiently above the stream to allow unrestricted flow of water beneath. The proposed clear-span bridge locations are shown on Figure 2-2.

4.1.5 Permanent Meteorological Mast

An 100 m meteorological mast will be constructed to the west of the site in the townland of Bishopsmountain (see Figure 2-2). A small stone crane pad will be constructed in front of the proposed mast location. General construction methods for the hard standing will match those described for wind farm hard standings.

The foundation will be excavated followed by shuttering, steel fixing and finally concrete pouring by a ready mix truck. Following crane setup, the mast sections will be delivered and unloaded by truck. In accordance with an agreed lifting plan, mast sections will be lifted into place by crane. Wind speeds will be monitored at all times during lifting operations by the lead climber and crane operator. Mast sections will be bolted together by climbers.

Following erection of main mast sections, lightning protection and other ancillary components will be fixed to the mast.

4.1.6 Forestry Felling

For the footprint of the infrastructure and associated felling buffers, there will be full tree removal.

A report detailing the forestry felling is provided as EIAR Appendix 2-3. It is noted that the clear-felling of trees in the State requires a felling licence. The associated afforestation of alternative lands equivalent in area to those lands being permanently clear felled is also subject to licensing ('afforestation licensing'). The Forest Service of the Department of Agriculture, Food & the Marine is Ireland's national forest authority and is responsible for all forest licensing.

In light of the foregoing and for the purposes of the proposed project, the Applicant commits that the location of any replanting (alternative afforestation) associated with the project will be greater than 10 km from the proposed wind farm site and also outside any potential hydrological pathways of connectivity i.e. outside the catchment within which the proposed project is located. On this basis, it is reasonable to conclude that there will be no more than imperceptible indirect or in-combination effects associated with the replanting. In addition, the Applicant commits to not commencing the proposed project until both felling and afforestation licences are in place and this ensures the afforested lands are identified, assessed and licensed appropriately by the relevant consenting authority.

4.1.7 Borrow Pits

Material will be extracted from the two on-site borrow pits to avoid the need for large stockpiles of material. There will be some small stockpiling of material as rock is broken/crushed, but these will be kept to a minimum.

Once the required rock has been extracted from each borrow pit, they will be reinstated using any suitable material from the site. Rock and fill material will need to be extracted from a number of proposed turbine foundation locations. In that case, this material will be used where possible to replace the material requirements from borrow pits. The borrow pits will be excavated into the ground and on completion of reinstatement they will be no higher than existing ground level.

During the extraction of the first borrow pit, removed spoil will be stored in a temporary stockpile with appropriate gradient and appropriate mitigation will be used to ensure the protection of downgradient watercourses (e.g. the use of silt fences).

4.1.7.1 Rock Extraction

The rock will be extracted from the proposed borrow pits by rock breaking. Rock breaking is suitable considering the geology and soil conditions at these locations.

A hydraulic rock breaking attachment is fitted to the arm of a large tracked excavator, and this breaks large pieces of rock from the ground. These large rocks are broken down into smaller pieces using these hydraulic rock breaking attachments, until they are small enough for use or to fit into a rock crusher. At that point, a large loader feeds them into a mobile rock crusher, where they are crushed, graded into various sizes, and removed by the loader (and trucks) for use on site. They will be removed as they are produced, and as such there will be no stockpiling apart from the area within the borrow pits adjacent to the crusher. Stockpiles will build up under the conveyor belts of the crusher for use on site.

4.1.7.2 Stone and Fill Requirements

A significant amount of stone and aggregate fill material will be required during construction. This will be used under and around key infrastructure including the turbines, substation, site roads, hardstands and construction compounds.

By sourcing the majority of the required stone volume from the on-site borrow pits the volume of traffic that will occur on public roads in the area will be significantly reduced. Stone from offsite sources will be used for surface dressing, while stone sourced on-site will be used for the initial capping layer.

Hardstands and site roads will be constructed to be above the existing ground level. The lower layer (approximately 450 mm) of this will be lower grade stone, with the top 150 mm being high quality compacted aggregate. Internal cable trenches which connect each turbine to the proposed on-site substation will be 1500 mm deep, with the first 600 mm being backfilled with sand. The excess excavated material will be used for backfilling of the borrow pits to the surface.

4.1.8 Temporary Construction Compounds

Two onsite temporary construction compound areas will be developed on the wind farm site to provide office space, welfare facilities, car parking and hardstands for storing materials. The locations are shown on Figure 2-2. These two compounds will be developed simultaneously.

A third temporary construction compound area will be developed adjacent to the L3418 road within Coillte lands should GCO One be constructed. This compound will be developed to provide parking, welfare facilities, hardstands for storing construction materials and space for excavated road materials to be stored until collected by a permitted facility.

Any mineral soils removed during construction of compounds will be stored for later use in reinstatement on the wind farm site. At the end of the construction phase, the compounds will be removed, with any stone being used towards reinstatement of the on-site borrow pits. After removal of the compounds, the areas will be recovered in soil and replanted with grass/trees.

4.1.9 Temporary deposition areas

Three temporary deposition areas have been identified on the proposed wind farm site, see Figure 2-2. Excavated materials will be temporarily stored at these locations until reused in site construction and landscaping works or removed from site to a permitted facility.

A temporary deposition area is also located along the cable route of GCO One, see Figure 2-3, should this option be constructed.

A Spoil Management Plan (see EIAR Appendix 2-4) has been prepared for this project and will be complied with.

5. CONSTRUCTION MANAGEMENT

5.1 CONSTRUCTION MANAGEMENT

5.1.1 Construction Phase Monitoring and Oversight

The requirement for a CEMP to be prepared in advance of any construction works commencing on any wind farm site and submitted for agreement to the Planning Authority is now well-established.

The construction Contractor will be responsible for implementing the mitigation measures specified in Section 7 of this CEMP and for communicating the requirements with all staff on-site. The implementation of the mitigation measures will be overseen by the supervising site staff, including the Environmental Manager, Ecological Clerk of Works (ECoW), site supervisor, archaeologists and/or geotechnical engineers, as appropriate.

The surface water drainage system will require weekly and daily inspections depending on the construction phase works to ensure that it is working optimally. Settlement ponds will require regular inspection and cleaning where sediment collects. The drainage and treatment system for the proposed wind farm will be monitored more frequently during/after heavy rainfall events during the construction phase. A programme of inspection and maintenance will be designed and dedicated construction personnel assigned to manage the inspection programme.

This CEMP will be a key construction contract document, which will ensure that all mitigation measures, which are considered necessary to protect the environment are implemented.

5.1.2 Construction Activities and Timing

It is anticipated that approximately 74 persons will be employed during the peak construction period (see EIAR Chapter 5) and it is estimated that the construction phase will take approximately 24 months from starting on-site to completion of commissioning of the turbines. With the exception of commercial forestry felling, vegetation clearance will commence outside the breeding birds season, which runs from the 1st of March to the 31st of August to protect any active bird nests and chicks. If any minor clearance or trimming is required within those dates, or if the initial vegetation clearance extends past the 1st of March due to unsuitable weather conditions, the works will be preceded by a confirmatory ecological survey (carried out by a qualified and suitably experienced ecologist) to ensure there are no active bird nests within the vegetation involved. If active bird nests are identified, works will stop and consultation will be undertaken with the National Parks and Wildlife Service (NPWS).

The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations will be restricted to between 07:00 hrs and 19:00 hrs Monday to Friday (excluding public holidays) and between 07:00 hrs and 14:00 hrs on Saturdays.

However, during the following critical periods longer hours will be required:

- Concrete pours for turbine foundations;
- During turbine installation when the weather is suitable (i.e. light winds);
- Delivery of oversized loads; and

- In the unlikely event of an emergency (this is unlikely - see Chapter 17 (Major Accidents and Natural Disasters)).

Any such out of hours working will be agreed in advance with Kilkenny County Council apart from in the case of an emergency.

Due to the volume of concrete required for each turbine foundation, and the requirement for the concrete pours to be continuous, deliveries are often carried out outside normal working hours. Such activities are limited to the day of turbine foundation concrete pours, which are completed in a single day per turbine (can take >12 hours). Because of the scale of the main concrete pours that will be required to construct the proposed wind farm, the main pours will be planned weeks in advance, and refined in the days leading up to the pour. Concrete pours are required for 10 no. wind turbines so they will require 10 days of longer working hours. A similar number of days with longer working hours would be needed for installation of the turbines during a period of calm weather (this is mostly limited to on-site activity).

To accommodate delivery of large turbine components along public routes it could be necessary on occasion to work outside of the core hours, with delivery of these oversized loads in late evenings.

The construction phase can be broken down into 5 no. main phases as follows (there will be overlap between these):

- 18 months – Civils (including forestry felling and vegetation clearance, drainage, construction of site roads, hardstands, turbine foundations);
- 9 months – Electrical grid connection/substation installation and commissioning;
- 12 months – Site electrical (installing between turbines and substation, pulling cables);
- 4 months – Turbine deliveries and erection;
- 2 months – Commissioning.

The phasing and scheduling of the main construction task items are outlined in Figure 5-1 where January 2028 has been selected as a potential start date for construction activities. Where there is overlap between phases, this reflects the anticipated progression of work through the site, with different areas within the site at different stages of completeness.

ID	Task Name	Task Description
1	Site Health and Safety	
2	Site Compounds	Forestry felling & vegetation clearance (avoid Mar – Aug), Construct site compounds, site access, fencing, gates
3	Site Roads	Forestry felling & vegetation clearance, construct roads, install drainage measures, install clear span bridges, install water protection measures
4	Turbine Hardstands	Forestry felling & vegetation clearance , excavate base, construct hardstanding areas
5	Turbine Foundations	Fix steel, erect shuttering, concrete pour
6	Substation Construction & Electrical Works	Construct substation and grid connection, underground cabling between turbines
7	Backfilling & Landscaping	
8	Turbine Delivery and Erection	
9	Substation Commissioning	
10	Turbine Commissioning	

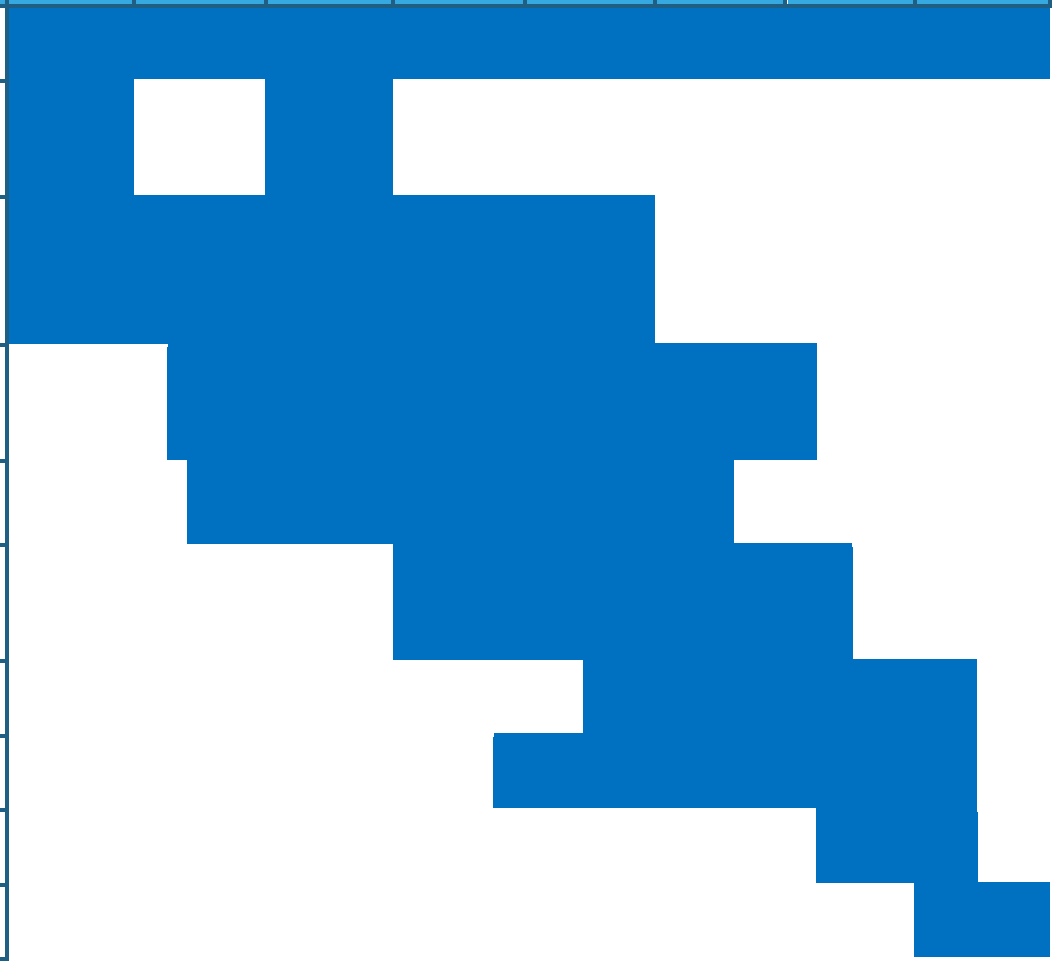


Figure 5-1: Indicative Construction Schedule

5.1.2.1 Wind Farm Construction Sequencing

It is proposed that works will start from the west through upgrade of Site Entrance One and development of the adjacent temporary construction compound and progress east wards. The borrow pit south of turbine T7 will be utilised first with the second borrow pit utilised when required. Turbines T3, T4, T5, T6, T7 and T9 will be completed first within the central plot of the wind farm site, with subsequent plots at turbines T1, T10, T2 and T8 to follow. The substation site construction works will be completed simultaneously with direct access to this area from Site Entrance Five (see Figure 2-2).

5.1.3 Surface Water Management

5.1.3.1 Existing Site Drainage

The proposed wind farm site is located within the Suir and Nore Water Framework Directive catchments (hydrometric areas 15 and 16) in Kilkenny. These catchments are further subdivided into sub-catchments with the site located within the Arrigle_SC_010 and Blackwater Kilmacow SC_020 WFD sub-catchments.

Two watercourses traverse the proposed wind farm site; the Smithstown 15 Stream (a tributary to the Arrigle River) and the Smartcastle Stream. The source of the Smithstown 15 Stream occurs in the north, and flows in a northerly direction for approximately 2.6 km before forming the Arrigle River. The Smartcastle Stream, which is situated towards the south, flows in a southerly direction.

The proposed wind farm site and adjacent lands also include man-made agricultural and forestry drains which flow into the watercourses mentioned above. These are primarily used to assist in the drainage of forestry and agricultural land-use.

5.1.3.2 Drainage and Silt Control

The proposed surface water drainage system utilises sustainable drainage devices and methods. The measures outlined in this project have been developed in adherence to the CIRIA (Construction Industry Research and Information Association) C648 (Control of water pollution from linear construction projects) guidance, and that guidance has itself been developed based on site experience in Ireland and the UK over recent decades.

A Surface Water Management Plan (SWMP) has been prepared (see EIAR Appendix 2-8). The purpose of this plan is to ensure that all works are conducted in an environmentally responsible manner so as to minimise any potential adverse impacts from the proposed project on surface water quality. The plan incorporates the following specific objectives:

- Provide overall surface water management principles and guidelines for all phases of the proposed project;
- Address erosion, sedimentation and other water quality issues; and
- Present measures and management practices for the prevention and/or mitigation of potential downstream impacts.

Construction Phase

During the construction phase, all run-off from construction areas will be controlled and treated to reduce suspended solids concentration prior to being discharged into the

existing drainage network or overland. Examples of proprietary silt control measures are illustrated on Plate 5-1.

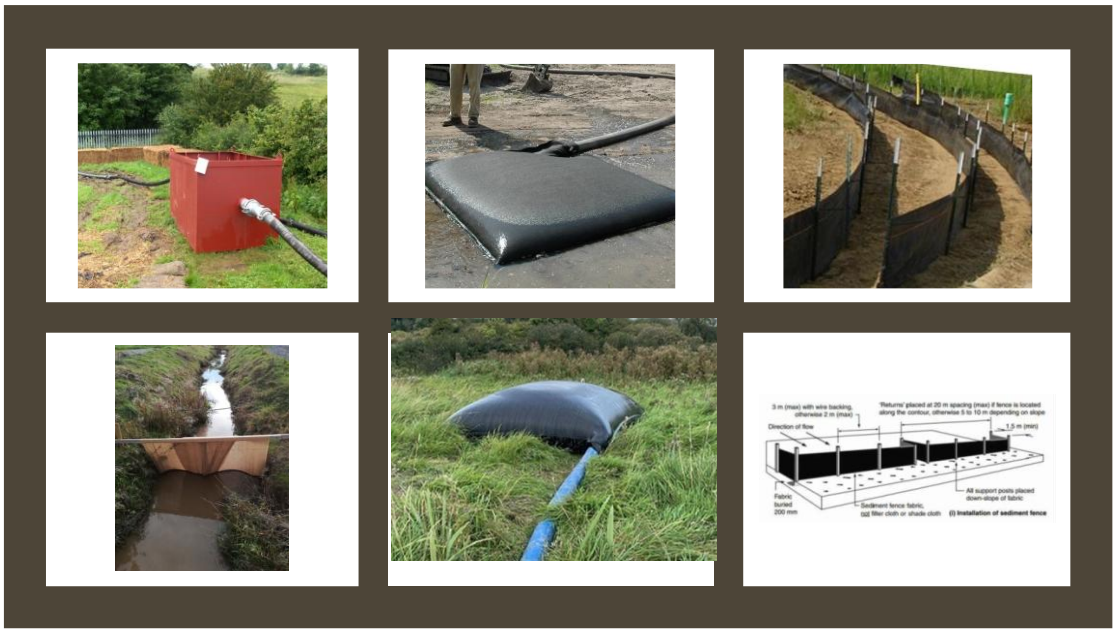


Plate 5-1 Examples of Proprietary Silt Control measures

Interceptor drains will be installed up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. These flows will discharge diffusely overland, within the buffer zone before entering any watercourse. Regular cross flow and energy dissipation devices will be installed to divert overland flows and prevent these flows from entering the borrow pits. An overview of the surface water drainage system to be used across the proposed wind farm site during the construction phase is provided in Plate 5-2.

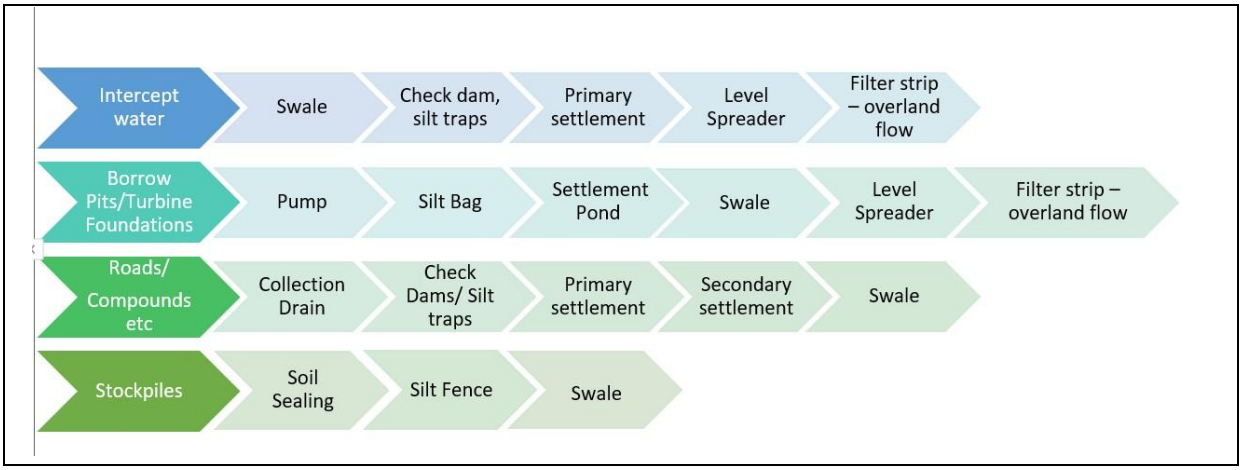


Plate 5-2 Treatment train

A number of temporary settlement ponds will be established during the construction phase along the proposed internal access roads and in areas of high construction activity (adjacent to turbine foundations, borrow pits, construction compounds etc.) to minimise silt laden run-off entering the drainage network. The settlement ponds will be designed to provide sufficient retention time and a low velocity environment to allow suspended solids to fall out of suspension prior to allowing the water to outfall to the receiving environment.

Surface water runoff from hardstanding areas will be collected and discharged to associated settlement ponds adjacent to the proposed infrastructure. It will then be managed by gravity flow at greenfield runoff rates (i.e. the runoff of the site at natural rates without development). These level spreaders/diffusers will be used where overland discharge of water is carried out. The level spreader will prevent soil erosion at these locations by spreading out and slowing down the water, see Plate 5-3.

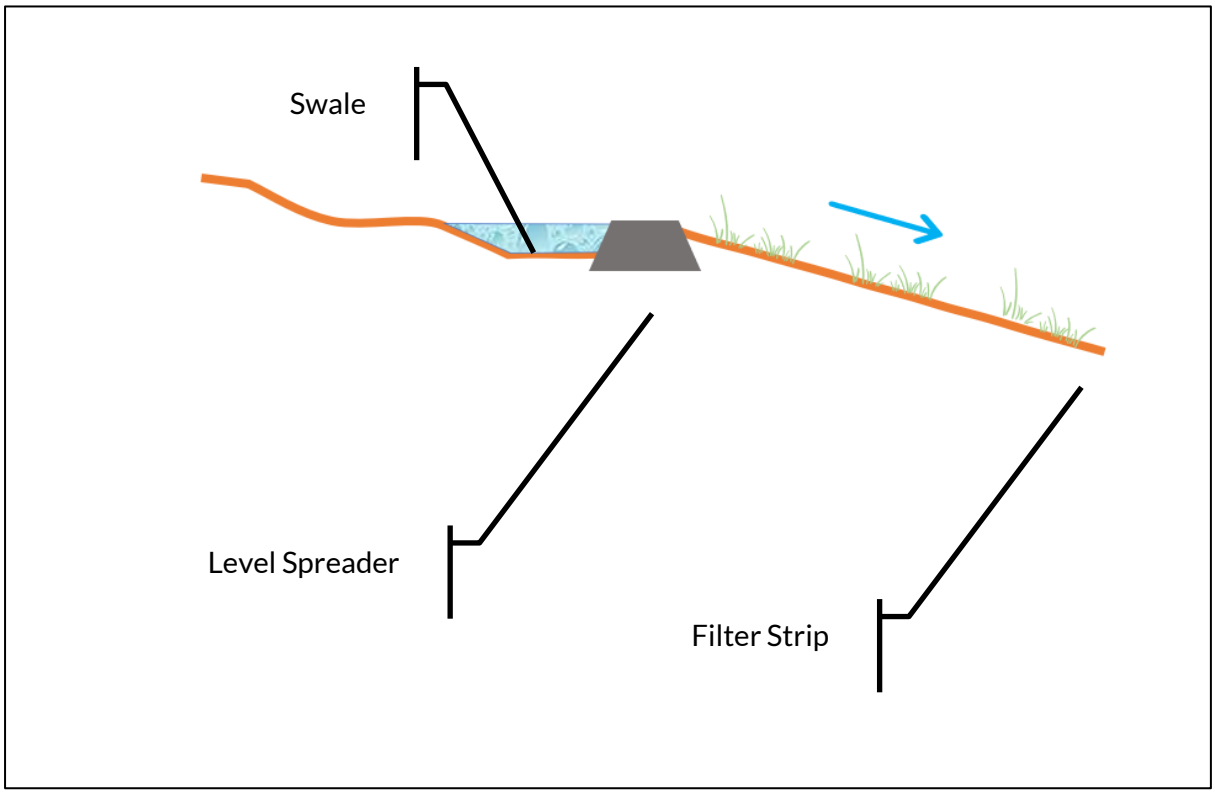


Plate 5-3 Conceptual Level Spreader and Filter Strip

5.1.3.3 Culverts & Clear Span Bridges

Culverts will be required where site roads or hardstands cross minor forest drain networks. The use of culverts will only be employed for minor field/forest drains.

The use of a clear-span bridges will be used for vehicles crossing the Smartcastle Stream and Smithstown 15 Stream (tributary to the Arrigle River). Therefore, there will be no direct effect on these streams at each proposed crossing location and downstream. Each clear-span bridge will be sufficiently above the stream to allow unrestricted flow of water beneath. The proposed clear-span bridge locations are shown on Figure 2-2 and the design details are provided in EIAR Appendix 1-1.

5.1.4 Environmental Management

5.1.4.1 Concrete deliveries and pouring

Primarily ready-mixed concrete will be used during the construction phase, with all concrete being delivered from batching plants in sealed concrete delivery trucks. Localised mixing will be used for small tasks such as blockwork for building the substation. The use of ready-mixed concrete deliveries will eliminate any potential environmental risks from large scale on-site batching. When concrete is delivered to site, only the chute of the delivery truck will be cleaned, using the smallest volume of water necessary, before leaving the site. Concrete trucks will be washed out fully at the batching plant, where facilities are already in place. The small volume of water that will be generated from washing of the concrete lorry's chute will be directed into a temporary lined impermeable containment area. These residual liquids and solids will be collected by an appropriately licensed waste collector. Where temporary lined impermeable containment areas are used, such containment areas are excavated and lined with an impermeable membrane. This washout will be located near Site Entrance One and also at any significant concrete pour locations (e.g. at turbine hardstand during a foundation pour) so that it is easily accessed when departing. An example of a concrete washout is shown in Plate 5-4.



Plate 5-4 Example of a temporary concrete washout facility

Although unlikely to happen any disposal of surplus concrete after completion of a pour will be off-site at the concrete production facility. Localised mixing of concrete for blockwork, etc. will only be carried out as needed, but any small volume of surplus will be disposed of in the concrete washout area.

5.1.4.2 Refuelling

Any easily manoeuvrable road-going vehicles (i.e. cars, jeeps, lorries etc.) will be refuelled off-site. For any vehicles which are slow moving or tracked or those for whom regular trips off-site to refuel will not be practical, on-site fuelling will be required.

A limited amount of fuel will need to be stored on the site within the construction compounds for this purpose, and this will be within a double skinned and bunded mobile tank which can be moved around the site using a 4x4 vehicle to refuel. This will be stored in the construction compound when not in use.

A spill kit in the form of a supply of fuel absorbent material and mats and a drip tray will be kept with the tank at all times. The drip tray and fuel absorbent mats will be used at all times during refuelling. Similar spill kits will be stored in each construction compound, and at the on-site substation in case of emergency.

In line with best practice, no refuelling will be carried out within 50 m of a watercourse. Only designated trained and competent operatives will be authorised to refuel plant on site.

In the event of an accidental fuel spill, the source of the spill will be fixed, fuel will be contained and cleaned as quickly as possible using the fuel absorbent material in the spill kits. The incident will be reported to the site manager and Environmental Clerk of Works, and appropriate remediation will be carried out (i.e. soil removal for safe disposal at a licensed waste facility by licensed waste collectors.

5.1.4.3 Dust suppression

In periods of extended dry weather, dust suppression will be necessary along haul roads and along the site roads to ensure dust does not cause a nuisance to any residential properties long the route. If necessary, during a period of extended dry weather, water will be taken from settling ponds in the site's drainage system and will be pumped into a bowser or water spreader to dampen down haul roads and site compounds to prevent the generation of dust. Silty or oily water will not be used for dust suppression, because this will transfer the pollutants to the haul roads and generate polluted runoff or more dust. Water bowser movements will be carefully monitored, as the application of too much water would lead to increased risk of runoff.

5.1.4.4 Waste Management

Best practice in waste management will be employed during all phases of the proposed project, with a view to reducing, reusing, recycling and recovering waste produced, in that order of preference. Waste disposal will be avoided where possible. The following sections outline the Waste Management Plan (WMP) and waste management practices associated with the proposed project, which will be in accordance with relevant provisions of the Waste Framework Directive (Directive 2008/98/EC on waste), the Waste Management Act 1996 as well as all other Irish and EU legislation.

Waste Management Plan

The main site Contractor will ensure that all waste contractors have the correct permits for any waste streams they are removing from site, and that they are taking it to the appropriately licensed/permitted waste facilities. They will also ensure that all parts of the WMP will be implemented onsite. All waste generated from the construction phase will be managed in accordance with the provisions of the Waste Management Act 1996 as amended and associated Regulations. In line with good industry practice, the following measures will be implemented on site by the appointed Contractor for the duration of construction:

- Ensure all excavated topsoil and subsoils will be reused within the site boundary, insofar as possible, primarily for reinstatement of the borrow pits. Any excess material which cannot be reused onsite will be transferred offsite to a licensed

waste facility. Similarly, any excess or unsuitable rock material which cannot be reinstated in the borrow pits will be transferred off-site.

- Ensure that any excess material which cannot be reused will be transferred off-site to a suitable licensed waste facility. Similarly, any excess or unsuitable soil / rock material which cannot be reinstated will be transferred off-site.
- Ensure typical waste streams (such as metals, paper, cardboard, plastics, wood, rubber, textiles, bio-waste, packaging, WEEE (electronic waste, batteries, accumulators and construction waste) will be managed, collected, segregated and stored in separate area(s) at the site before being removed off site by a licensed waste management contractor at regular intervals for the duration of the construction works;
- Provide skips and bins of appropriate sizes onsite in a designated area(s) and used to maximise source segregation of waste materials. This will include food and packaging waste from canteen and welfare facilities. Appropriate control of food waste in the compound will minimise the potential for pests and rodents to visit the area;
- Any contaminated materials used for spills and equipment maintenance works will be separately stored in a suitable container for collection by the appointed authorised hazardous waste contractor(s);
- Encourage all staff to minimise waste generation and to maximise the segregation of waste at source. Material wastage will be avoided by delivering only the required quantities of material to site and utilising off-site manufacturing of materials as much as possible;
- Establish 'just-in-time deliveries to avoid excess material storage at the site which can lead to waste generation. Delivery drivers will be encouraged to remove any excess packaging from materials delivered to site and remove unused timber pallets where possible;
- Reusable formwork for concrete pouring will be used where possible, in preference of non-reusable options. Other opportunities for material reuse across the site will be sought by the appointed Contractor;
- Due to the current nature / use of the site (commercial forestry / agriculture), it is not anticipated that there will be contaminated soils or materials encountered during the excavation works. No contaminated soils were identified during the site investigation works.
- It is noted that illegal dumping is common in large forestry areas and may be encountered at the time of construction. Where illegal dumping is discovered, appropriate communication and measures will be taken to try and identify the source of the illegal waste. The appropriate authorities will be notified, and the materials will be removed from site by authorised waste collection contractors and transferred to suitably licensed waste facilities:
- The Environmental Manager, or other appropriate person, will be designated by the appointed Contractor as the Waste Manager for the duration of the project in accordance with the general guidance set out in the Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, published by the EPA in November 2021;

- At the pre-construction stage, the Waste Manager will be in a position to require fellow designers to take full advantage of all reasonable C&D waste prevention, reuse and recycling opportunities;
- During construction, the practicalities of waste prevention, salvaging re-useable materials, and the need to synchronise the recycling of waste materials through the timing of their use in the new construction works will be emphasised by the appointed Waste Manager.

5.1.4.5 Vehicle Management

Vehicles will be kept on site access roads for the vast majority of the construction phase, however in the initial construction phases, there will be some requirement for off-road vehicle movements (for forestry felling, ground works, etc.). For forestry felling, standard practices and equipment/vehicles will be used (as described in the Forestry Report – see EIAR Appendix 2-3).

For ground works and other off-road activity, the use of specialist vehicles that are tracked or use large low ground pressure tyres or bog mats which distribute their weight evenly across a large surface area will be used. These will minimise ground disturbance and therefore minimise the risk of sediment entering downstream watercourses.

All vehicles will be restricted to the areas where works are required, and unnecessary off-road movements around the wider site will be avoided. Where there are any sensitive habitats present around a proposed work area, these areas will be marked out so that vehicles will not enter and damage them.

5.1.4.6 Vehicle Washing

Wheels or vehicle underbodies will be washed before leaving sites to prevent the build-up of mud on public (and site) roads. Site roads will be already formed using on-site materials before other road-going trucks begin to make regular or frequent deliveries to the site (e.g. with steel or concrete). The site roads will be well finished with compacted hardcore, and so the public road-going vehicles will not be travelling over soft or muddy ground where they might pick up mud or dirt.

However, in accordance with best practice and to avoid the potential for the transfer of alien invasive plant species into the site, it is proposed to install a self-contained wheel-wash system. Water will be supplied for this using a water bowser.

A road sweeper will be available if any section of the surrounding public roads becomes soiled by vehicles associated with the proposed project.

During the operational phase, the on-site access roads will be maintained in good condition, and any vehicles that need to access the site will be keeping on these surfaces. As a result of this, and the low volume of traffic expected on site, it is not anticipated that a wheel washing facility would be required during the operational phase or decommissioning.

5.1.4.7 Spoil Management

The use of the borrow pits will be phased. This will allow materials to be permanently placed in the first borrow pit while the second is in use, thereby minimizing the volume of soils requiring temporary storage. In order to further reduce temporary storage requirements,



soils and turves will be reinstated around infrastructure as part of restoration and landscaping works. This will be carried out during the construction phase, as soon as is practical after the completion of the works in any one area of the site. Approximately 90,000 m^3 will be excavated from the borrow pits on-site.

Where the proposed project footprint is located on any mineral-based soil, this material will be side-cast and profiled as close to the excavation areas as practical. In the case where other adjacent infrastructure or constraint features might prevent side-casting, it will be used to reinstate the borrow pits. The sides of the excavated areas will be battered/sloped sufficiently to ensure that slippage does not occur (2:1 for mineral soil). The excavated side cast material will be smoothed with the back of an excavator bucket and surrounded by silt fences to minimise the potential for sediment-laden run-off occurrence. Side-casting will not occur within 50 m of a watercourse. The side-cast material will be used later in backfilling the working area around the turbine foundations, or for landscaping locally or reinstatement elsewhere on site (such as the borrow pits). Further information on the spoil management is provided in EIAR Appendix 2-4.

Where side-casting is not possible, topsoil and sub-soil will be stockpiled separately. Turves will be stored turf side up and will not be allowed to dry out. Stockpiles will be isolated from any surface drains and a minimum of 50 m away from watercourses, and will be located at points with easy access to internal roads within the proposed borrow pit areas which have not yet been extracted. Measures that will be employed will include interceptor ditches around these areas (with sediment traps within these), deployment of double silt curtains and seeding of the piles will be incorporated to prevent runoff of suspended solids and soil erosion. No permanent spoil or stockpiles will be left on site.

Where available, vegetative sods/turves or other topsoil in keeping with the surrounding vegetation type will be used to provide a dressing for the final surface. Where sods/turves are not available, some seeding with native species will be carried out. This method for restoration of excavated or disturbed areas is to encourage stabilisation and early establishment of vegetation cover.

To prevent erosion and run-off and to facilitate vegetation reinstatement, any sloped soil embankment will be graded such that the slope angle is not too steep (i.e. 1:3) and that embankments match the surrounding ground profile.

5.1.4.8 Traffic Management

A Traffic Management Plan (TMP) for the construction phase of the proposed project is included as EIAR Appendix 16-1. This TMP will be agreed in advance with the Local Authority and updated as appropriate.

6. ENVIRONMENTAL EMERGENCY RESPONSE PLAN / PROCEDURES

6.1 HAZARD IDENTIFICATION

In order to establish the type of potential emergencies that may occur, the hazards outlined in Table 6-1 have been identified as being potential situations that may require an emergency response they occur.

Table 6-1: Potential Hazards Identified

Hazard Type	Emergency Incident
Plant / Machinery/tools causing damage	Accident resulting in injury / power failure / loss of critical infrastructure
Spillages / Leaks	Accidental spill / leak leading to significant environmental contamination
Flooding	Accident leading to injury / damage to site infrastructure
Severe Weather	Accident leading to injury / damage to site infrastructure
Fire / Explosion	Accident leading to injury / damage to site infrastructure
Turbine Collapse	Accident leading to injury / damage to site infrastructure
Landslide	Accident leading to injury / damage to site infrastructure
On-site/Construction Traffic – plant/machinery and construction vehicle movements	Traffic accident leading to injury / damage to site infrastructure
Wind Turbine Rotational Failure	Accident leading to injury / damage to site infrastructure

6.2 ENVIRONMENTAL EMERGENCY RESPONSE PROCEDURES

Every effort will be made to prevent environmental emergencies and incidents during the construction and operational phase of the project.

The Contractor will be responsible for developing a detailed environmental Emergency Response Plan (ERP) for the proposed construction works, environmental emergencies, as part of the H&S Plan.

This ERP will be activated in the event of an environmental emergency such as a fire, spillage, structure collapse etc. and will provide details on who is required to be notified etc. The ERP will also include details of all personnel inducted and authorised to work on the site.

In the event of an environmental emergency, the Environmental Manager, ECoW and Project Manager will be notified immediately and will determine the scale of the emergency and the requirement for the assistance of emergency services. Works will cease in the area of the incident and contact will be maintained with the emergency services to direct them to the scene of the incident as required.

If necessary, the Environmental Manager, with support from the ECoW will inform the appropriate regulatory authority depending on the nature of the incident. Details of the incident will be recorded (e.g. cause, extent, actions and remedial measures).

A record of all environmental incidents will be kept on file by the Environmental Manager. These records will be made available to the relevant authorities if required.

Furthermore, the Environmental Manager and ECoW will be responsible for outlining corrective actions required and will advise the Contractor and Project Developer Teams as appropriate.

The ERP must include contact names and telephone numbers for the relevant local authorities (all sections/departments) including ambulance, fire brigade, An Garda Siochána and the HSA. Reporting of environmental emergencies to the local authority will be required as well as other relevant stakeholders such as IFI, NPWS or the EPA.

6.2.1 ECoW Responsibilities

During construction there will be occasions when the ECoW will be required to rapidly respond to unplanned events such as any wildlife incidents, pollution incidents, etc.

The ECoW will have a very specific role within the emergency response teams responding to these incidents.

The ECoW will also be expected to support the project team in resolving any other unplanned events that are not classified as emergency responses or incidents.

6.2.2 Site Evacuation and Fire Drills

A site evacuation/fire drill procedure will be developed to provide basis for carrying out the immediate evacuation of all site personnel in the event of an emergency. At induction, all personnel will be made aware of the evacuation procedure. The Fire Services Acts of 1981 and 2003 require the holding of fire safety evacuation drills at specific intervals and maintaining records of such drills. The details of this procedure will be finalised in the Contractor's CEMP at construction stage and will include:

- Details regarding the notification of emergency situations to all those on site including use of a siren/horn to notify all personnel;
- Details of assembly point(s) and signage;
- Details of the roll call procedure to account for all personnel on site;
- Communication process between the Site Security Officer and the Site Manager during the procedure (i.e. notification of roll count etc.); and
- Course of action to be undertaken by the Site Manager.

6.2.3 Spill Response and Control

A detailed spill response and control procedure will be developed and finalised in the Contractor's CEMP at construction stage, outlining the steps that will be followed in the event of an oil / fuel spill occurring, including:

- Identification and blocking of the source of the spill;
- Alerting personnel in the vicinity of the spill and any possible dangers;
- Elimination of any potential ignition sources in the vicinity of the spill;
- Spill containment approach and spill control materials;
- Covering or bunding off of any vulnerable areas where appropriate (i.e. drains, streams, sensitive habitats);
- Clean up using the spill control materials;
- Containment and disposal of used spill control materials;



- Communication with the ECoW – providing relevant information on the location, type and extent of the spill so that they can take appropriate action;
- ECoW actions including inspection of the site, making certain necessary measures are in place to manage the spill and prevent further spillage; and
- ECoW notification to the appropriate regulatory body if necessary.

6.2.4 Incidents / Complaints

All safety or environmental incidents associated with the project will be reported and investigated in line with the ERP. Typically, the following procedures will be followed in the event of an incident:

- Works will stop immediately where safe to do so;
- The Environmental Manager will be contacted;
- The size of the incident will be assessed and determined if it can be controlled by site staff or if emergency services are required to attend;
- The appropriate enforcing authority will be contacted;
- The Environmental Manager will investigate after the incident;
- The findings will be sent to the appropriate authority; and
- An action plan will be prepared to set out any modifications to working practices required to prevent a recurrence.

This section sets out a procedure to manage and resolve any complaints received from members of the public during the construction phase of the proposed project. The following measures will be adopted and refined, as necessary, taking account of any relevant planning conditions.

The following measures will be implemented to deal with complaints and the Contractor's CEMP will contain more specific details with regard to phone numbers to contact:

- Clearly display a notice board at the site entrance so that the public know whom to contact if they have a complaint or comment;
- Personnel on site, including sub-contractors are required to perform their duties in accordance with this CEMP, and in such a way as to minimise the risk of complaints from third parties;
- All complaints received regarding the construction works will be recorded and categorised (e.g. noise, property damage, traffic, dust etc.) within a central Site Complaints Log. This complaints log will include the following key details:
    - Name, address and contact details of the complainant (with the complainant's permission);
    - Brief outline of the complaint;
    - Date of Complaint;
    - Name of person receiving complaint details; and
    - Agreed timeline for response to complaint.
- All complaints will be communicated to the Project Manager and the Project Developer immediately;
- All complaints will be followed up and resolved in so far as is practicable; and
- The complainant, Project Developer and other stakeholders will be kept informed of the progress in resolving the complaint.



6.2.5 Emergency Contact Details

A list of emergency contacts is presented in Table 6-2. A copy of these contacts will be included in the Site Safety Manual and in the site offices and the various site welfare facilities.

Table 6-2: List of Emergency Contacts

Contact	Telephone
Emergency Services – Ambulance, Fire, Gardaí	112 / 999
Local Garda Station – Ballyhale	+353567768602
Local Fire Service	999 or 112
Local Doctor / GP Service – Mullinavat Health Centre	051 898244
Waterford Regional Hospital	(051) 848 000
ESB Faults / Emergencies	1850 372 999
Gas Networks Ireland 24hr Emergency Line	1850 20 50 50
Site Manager / Construction Manager / Site Supervisor	TBC
Client: Manogate Limited	TBC
Ecological Clerk of Works (ECoW)	TBC
Environmental Manager	TBC
Project Supervisor Design Stage (PSDS)	TBC
Project Supervisor Construction Stage (PSCS)	TBC
Health and Safety Authority Ireland (HSA)	TBC
Inland Fisheries Ireland (IFI)	TBC
Project Ecologist	TBC
Project Hydrologist	TBC
Project Geotechnical Engineer / Geologist	TBC
Project Archaeologist	TBC

6.3 Emergency Communication Procedure

The Contractor's CEMP will be updated with an agreed Emergency Communication Response Procedure following appointment of the Contractor.

6.4 Induction Checklist

Table 6-3 provides a list of items highlighted in the Emergency Response Procedure (ERP) which must be included in the induction or gathered from all personnel that will work on the proposed project during the mandatory site induction. This will be revised throughout the various stages of the project. This list will be updated and expanded on within the Contractor's CEMP.

Table 6-3: Site Induction Checklist

Emergency Response Plan – Site Induction Items TBC	Status
Site Induction (all personnel must undergo the site induction prior to commencing work on-site)	
All personnel must be made aware of site evacuation and fire drill procedures	
All personnel must be made aware of the spill response and control procedure	
All personnel must be made aware of environmental incident procedures	
All personnel must be made aware of incident and complaints procedures	
All personnel must be made aware of the emergency communication procedure and Emergency Contact Details for the project	
All personnel must be made aware and have access to the Site Safety Manual	
All personnel must be made aware of the personnel tracking procedure and provide their contact details at induction	

7. MITIGATION AND MONITORING MEASURES AGREED

All mitigation and monitoring measures relating to the proposed project are set out in the various sections of the project EIAR, and Natura Impact Statement (NIS) prepared as part of the planning applications for this project.

Tables 7-1 and 7-2 lists these mitigation measures. These tables are intended to provide a review list that can be easily checked and reported on during the future phases of the project. The use of a table to present the information will be further expanded upon over the course of the proposed project and will provide a template for use during site compliance audits.

Table 7-1: Table of EIAR Mitigation Measures

Ref No.	Related to	Location	Mitigation Measure	Monitoring
Pre-construction Phase				
Description of Proposed Project				
MM1	Environmental Management – Construction Environmental Management Plan (CEMP)	EIAR Chapter 2	The CEMP will be updated prior to commencement of development to address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned and will be submitted to the planning authority for written approval. The Contractor will be responsible for implementing the mitigation measures specified in the EIAR and CEMP and for communicating the requirements with all staff on-site. Their implementation of the mitigation measures will be overseen by the supervising environmental manager/clerk of works, ecologists, archaeologists and/or geotechnical engineers, as appropriate.	As required through the Contractor's CEMP.
MM3	Health and Safety	EIAR Chapter 2	A Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) are required to be appointed in accordance with the provisions of the Safety, Health and Welfare at Work (Construction) Regulations.	As required through the Contractor's CEMP and the Health and Safety Plan.
MM4	Surface Water Drainage System	EIAR Chapter 2 and Chapter 9	Silt fences will be installed prior to the commence of works to protect any downgradient watercourses.	As required through the Contractor's CEMP and the Surface Water Management Plan (EIAR Appendix 2-8).
MM5	Traffic Management	EIAR Chapter 2 and Chapter 16	A Traffic Management Plan (TMP) has been prepared for the proposed project and is included as EIAR Appendix 16-1. This is a living document and will be updated ahead of construction to address the requirements of any relevant planning conditions, including any additional mitigation measures which are conditioned by An Coimisiún Pleanála, in the event planning permission/approval is granted.	As required through the Contractor's CEMP and TMP.
MM6	Road condition	EIAR Chapter 16	A confirmatory survey of the road condition, including the condition of all road water crossings along GCO One (if proceeding), will be carried out in advance of any works.	As required through the Contractor's CEMP and TMP.
Biodiversity				



Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM7	Ecological Clerk of Works (ECoW)	Chapter 6 and Chapter 7	An ECoW will be appointed to the project pre construction. The ECoW will be responsible for pre-construction surveying and monitoring compliance with the EIAR and Natura Impact Statement (NIS) mitigation measures and construction phase monitoring requirements relating to ecology/biodiversity.	As required through the Contractor's CEMP.
MM8	Otter	EIAR Chapter 6	Pre-construction confirmatory surveys prior to the commencement of any works will be carried out by a competent ecologist to identify any changes in otter activity or holt/couch locations within the proposed project. Otter surveys will be undertaken no more than 10—12 months in advance of the construction works as per the advice in the NRA	As required through the Contractor's CEMP.
MM9	Habitat Protection	EIAR Chapter 6	Guidelines for the Protection and Preservation of Trees, Hedgerows and Scrub Prior to, During and Post Construction of National Road Schemes (NRA, 2006) will be followed to ensure that any vegetation which is to be retained is given protection during the construction phase: • All areas of hedgerows which are required to be retained as part of the proposed project will be demarcated to ensure that only habitat outside of these areas are subject to removal/fragmentation; • If a tree is required to be felled, it will be assessed by an arborist/tree surgeon on how best to fell in order to avoid impact to the surrounding habitats and determine the proficient size of a root protection area (RPA). The RPA will be defined based upon the recommendation of a qualified arborist; • The area within the RPA will not be used for vehicle/machinery parking or the storage of any materials (including soils, oils and chemicals). The storage of hazardous materials (e.g., hydrocarbons) or concrete washout areas will also not be undertaken within 5 m of any retained trees, hedgerows and treelines; • A qualified arborist will assess the condition of, and advise on any repair works necessary to, any trees which are to be retained or that lie outside of the proposed project but whose RPA is impacted by the works. Any remedial works required will be carried out by a qualified arborist; and	As required through the Contractor's CEMP.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• A buffer zone of at least 5 m will be maintained between construction works and retained hedgerows to ensure that the RPA are not damaged.	
			Any drains (FW4 habitat) which are to be retained as part of the proposed project will be demarcated to ensure that only habitat outside of these areas are subject to removal.	As required through the Contractor's CEMP.
			All areas of wet grassland (GS4 habitat) at turbine T3 which are required to be retained as part of the proposed project will be demarcated to ensure that only habitat outside of these areas are subject to removal. This area is adjacent to wet heath habitat (HH3) and demarcation of the area will be done under guidance and supervision of the Ecological Clerk of Works (ECoW). To ensure that no direct impact occurs within the footprint of the HH3 habitat, the entire area of wet heath adjacent to T3 will be fenced off to ensure no construction phase vehicles, machinery, personnel and/or works take place within this area of habitat, including personnel and machinery undertaking conifer felling as part of the bat buffer at T3. Demarcation of the area will be done so under guidance and supervision of the ECoW. In order to prevent additional surface water from entering this HH3 habitat, drainage at T3 will be directed to flow westerly away from this area. This will ensure no change to the habitat type as a result of surface water.	As required through the Contractor's CEMP.
MM10	Common Frog	EIAR Chapter 6	Common frog will be surveyed during the appropriate season (February to June) in advance of any works at drainage ditches where the common frog may spawn. If recorded, a method statement will be prepared to detail specific measures to translocate the frogs and spawn, by hand or net, to suitable nearby habitat that will not be impacted by the proposed project. The method statement will be used to inform the application to NPWS for a licence to capture and relocate spawn and frogs.	As required through the Contractor's CEMP.
Ornithology				
MM11	Bird protection	EIAR Chapter 7	A Bird Protection Plan (BPP) will be produced prior to construction as set out in EIAR Chapter 7.	As required through the Contractor's CEMP and the BPP.
Material Assets				
MM12	Underground Services	EIAR Chapter 11	Prior to the commencement of the construction phase the applicant will engagement with all utility asset owners / service providers;	As required through the Contractor's CEMP.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• A confirmatory survey of all existing services (electrical/ESB, water/Uisce Éireann, gas/Gas Networks Ireland (GNI), telecoms cables etc.) will be carried out prior to construction to verify the assumptions in this report and identify the precise locations of any services. Where assets / services are identified, the Applicant will liaise with the service provider; • Utility assets / services (underground and overhead) will be identified and clearly marked prior to any pre-construction (site clearance) / construction / demolition activity occurring; • No excavations will take place without prior consultation with relevant utility asset owners / service providers; • Digging around existing services, if present, will be carried out as per best practice/guidance[2] by hand to minimise the potential for accidental damage; • Prior to any mechanical excavation taking place ESBN will be consulted with and the exact locations of all underground electricity cables established and verified; • All works undertaken in the vicinity of underground assets will be carried out in accordance with current HSA guidance, namely the HSA 'Code of Practice for Avoiding Danger from Underground Services'; • All works will be undertaken with in accordance with the exclusion and safe operating distances around electricity infrastructure as set out in the ESB Code of Practice, as well as HSA guidance including the 'Code of Practice for Avoiding Danger from Overhead Electricity Lines'; • Any proposed works will require a minimum clearance distance of 1 m either side of electrical cables; and • Liaison with asset owners / service providers will continue as required throughout the construction phase.	
Archaeology				
MM13	Archaeological Investigations	EIAR Chapter 15	Prior to the commencement of construction, a programme of archaeological test trenching will be carried out at the greenfield	As required through the Contractor's CEMP.

[2] https://www.gasnetworks.ie/home/safety/dial-before-you-dig/
Transmission Policies and Standards (eirgridgroup.com)/ Publications (esbnetworks.ie)

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			locations of the proposed wind farm development and cable route. Additionally, the area required for accommodation works for the TDR within the ZoN of AH43 will be subject to archaeological testing, in advance of construction. These investigations will be carried out under licence to the National Monuments Service of the DoHLGH. Dependant on the results of the assessment and if archaeological remains are identified, further mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require agreement from the National Monuments Service of the DoHLGH.	
			Lime kiln (CH35) is located within the proposed hardstand for Turbine 10, and will be demolished during construction of the proposed project. The lime kiln will be subject to a detailed photographic and written record prior to the construction of the proposed project, carried out by a suitably qualified archaeologist.	
Traffic and Transport				
MM14	Traffic: Pre-Construction Condition Survey	EIAR Chapter 16	The client will undertake pre-construction and post-construction visual pavement surveys on the Haul Roads. Where the surveys conclude that damage on the roadway is attributable to the Construction Phase of the proposed project, the applicant will fund the appropriate reinstatement works to bring the road back to pre-construction condition as a minimum, details for which will be agreed with the Roads Authorities.	As required through the Contractor's CEMP and TMP.
MM15	Sightlines	EIAR Chapter 16	Maintenance of the hedgerows within the visibility splays shall be undertaken to maintain the required visibility splays and mitigate the potential for overgrown vegetation which may result in inadequate visibility at the access and crossing points during the construction activities.	As required through the Contractor's CEMP and TMP.
Construction Phase				
Description of Proposed Project				
MM16	Construction Hours	EIAR Chapter 2	The hours of construction activity will be limited to avoid unsociable hours where possible. Construction operations will generally be restricted to between 07:00 hrs and 19:00 hrs Monday to Friday (excluding public holidays) and between 07:00 hrs and 14:00 hrs on Saturdays. However, during the following critical periods longer hours will be required: • Concrete pours for turbine foundations;	As required through the Contractor's CEMP.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• During turbine installation when the weather is suitable (i.e. light winds); • Delivery of oversized loads; and • In the unlikely event of an emergency (this is unlikely - see Chapter 17 (Major Accidents and Natural Disasters)). Any such out of hours working will be agreed in advance with Kilkenny County Council apart from in the case of an emergency.	
MM17	Surface Water Drainage / Silt Control	EIAR Chapter 2	The surface water drainage system will have weekly and daily inspections depending on the construction phase works to ensure that it is working optimally. Settlement ponds will have regular inspection and cleaning where sediment collects. The drainage and treatment system for the proposed wind farm will be monitored more frequently during/after heavy rainfall events during the construction phase. A programme of inspection and maintenance will be designed and dedicated construction personnel assigned to manage the inspection programme.	As required through the Contractor's CEMP and SWMP.
MM18	Concrete Deliveries & Pouring	EIAR Chapter 2	Primarily ready-mixed concrete will be used during the construction phase, with all concrete being delivered from local batching plants in sealed concrete delivery trucks. Localised mixing will be used for small tasks such as blockwork for building the substation. The use of ready-mixed concrete deliveries will eliminate any potential environmental risks from large scale on-site batching. When concrete is delivered to site, only the chute of the delivery truck will be cleaned, using the smallest volume of water necessary, before leaving the site. Concrete trucks will be washed out fully at the batching plant, where facilities are already in place. The small volume of water that will be generated from washing of the concrete lorry's chute will be directed into a temporary lined impermeable containment area. These residual liquids and solids will be collected by an appropriately licensed waste collector. Where temporary lined impermeable containment areas are used, such containment areas are excavated and lined with an impermeable membrane. This washout will be located near Site Entrance One and also at any significant concrete pour locations (e.g. at turbine hardstand during a foundation pour) so that it is easily accessed when departing. Although unlikely to happen any disposal of surplus concrete after completion of a pour will be off-site at the concrete production facility. Localised mixing of concrete for blockwork, etc. will only be carried out	As required through the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			as needed, but any small volume of surplus will be disposed of in the concrete washout area.	
MM19	Refuelling	EIAR Chapter 2	Any easily manoeuvrable road-going vehicles (i.e. cars, jeeps, lorries etc) will be refuelled off-site. For any vehicles which are slow moving or tracked or those for whom regular trips off-site to refuel will not be practical, on-site fuelling will be required.	As required through the Contractor's CEMP.
			A limited amount of fuel will need to be stored on the site within the construction compounds for this purpose, and this will be within a double skinned and bunded mobile tank which can be moved around the site using a 4x4 vehicle to refuel. This will be stored in the construction compound when not in use.	
			A spill kit in the form of a supply of fuel absorbent material and mats and a drip tray will be kept with the tank at all times. The drip tray and fuel absorbent mats will be used at all times during refuelling. Similar spill kits will be stored in each construction compound, and at the on-site substation in case of emergency.	
			No refuelling will be carried out within 50 m of a stream. Only designated trained and competent operatives will be authorised to refuel plant on site.	
			In the event of an accidental fuel spill, the source of the spill will be fixed, fuel will be contained and cleaned as quickly as possible using the fuel absorbent material in the spill kits. The incident will be reported to the site manager and Environmental Manager, and appropriate remediation will be carried out (i.e. soil removal for safe disposal at a licensed waste facility by licensed waste collectors.	
MM20	Waste Management	EIAR Chapter 2	Waste disposal will be avoided where possible. The Waste Management Plan and waste management practices associated with the proposed project will be in accordance with relevant provisions of the Waste Framework Directive (Directive 2008/98/EC on waste), the Waste Management Act 1996 as well as all other Irish and EU legislation. The main site contractor will appoint an Environmental Clerk of Works who will ensure that all waste contractors have the correct permits for any waste streams they are removing from site, and that they are taking it to the appropriately licensed/permitted waste facilities. This includes any waste produced along GSO One (if constructed) from works occurring in the existing public road. They will also ensure that all parts of the Waste Management Plan will be implemented.	As required through the Contractor's CEMP.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM21	Spoil Management	EIAR Chapter 2	The use of the borrow pits will be phased. This will allow materials to be permanently placed in the first borrow pit while the second is in use, thereby minimizing the volume of soils requiring temporary storage. In order to further reduce temporary storage requirements, soils and turves will be reinstated around infrastructure as part of restoration and landscaping works. This will be carried out during the construction phase, as soon as is practical after the completion of the works in any one area of the site.	As required through the Contractor's CEMP.
			Where the proposed project footprint is located on any mineral-based soil, this material will be side-cast and profiled as close to the excavation areas as practical. In the case where other adjacent infrastructure or constraint features might prevent side-casting, it will be used to reinstate the borrow pits. The sides of the excavated areas will be battered/sloped sufficiently to ensure that slippage does not occur (2:1 for mineral soil). The excavated side cast material will be smoothed with the back of an excavator bucket and surrounded by silt fences to minimise the potential for sediment-laden run-off occurrence. Side-casting will not occur within 50 m of a watercourse. The side-cast material will be used later in backfilling the working area around the turbine foundations, or for landscaping locally or reinstatement elsewhere on site (such as the borrow pits).	
			Where side-casting is not possible, topsoil and sub-soil should be stockpiled separately. Turves will be stored turf side up and will not be allowed to dry out. Stockpiles are to be isolated from any surface drains and a minimum of 50 m away from watercourses, and will be located at points with easy access to internal roads within the proposed borrow pit areas which have not yet been extracted. Measures that will be employed will include interceptor ditches around these areas, deployment of double silt curtains and seeding of the piles will be incorporated to prevent runoff of suspended solids and soil erosion. No permanent spoil or stockpiles will be left on site.	
			Where available, vegetative sods/turves or other topsoil in keeping with the surrounding vegetation type will be used to provide a dressing for the final surface. Where sods/turves are not available, some seeding with native species will be carried out. This method for restoration of excavated or disturbed areas is to encourage stabilisation and early establishment of vegetation cover.	

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			To prevent erosion and run-off and to facilitate vegetation reinstatement, any sloped soil embankment will be graded such that the slope angle is not too steep (i.e. 1:3) and that embankments match the surrounding ground profile.	
MM22	Health and Safety	EIAR Chapter 2 and Chapter 5	A Health and Safety Plan covering all aspects of the construction process will address the Health and Safety requirements in detail. This will be prepared prior to the construction stage.	As required through the Contractor's CEMP.
			The scale and scope of the project requires that a Project Supervisor Design Process (PSDP) and Project Supervisor Construction Stage (PSCS) are required to be appointed in accordance with the provisions of the Safety, Health and Welfare at Work (Construction) Regulations.	
Population and Human Health				
MM23	Health & Safety	EIAR Chapter 5	All activities carried out by the appointed Contractor during the construction phase will be in accordance with the requirements of the Safety, Health and Welfare at Work Act 2005 as amended and Regulations made under this Act. A Health and Safety Plan covering all aspects of the construction process will detail Health and Safety requirements. At the procurement stage, the Health and Safety Plan will be prepared on a preliminary basis and developed further at construction stage, with all hazards and risks identified and assessed.	As required through the Contractor's CEMP.
MM24	Turbine Delivery Route (TDR)	EIAR Chapter 5	The TDR works will be carried out to the relevant construction and road safety guidelines, and will allow for the proposed turbine dimensions. Turbine components will be being transported at night when there is less traffic on the road, and will be accompanied by Garda escort.	As required through the Contractor's CEMP.
Biodiversity				
MM25	Forestry Felling	EIAR Chapter 6 and Chapter 7	With the exception of commercial forestry felling, hedgerow and tree vegetation clearance will commence outside the breeding birds season, which runs from the 1st of March to the 31st of August to protect any active bird nests and chicks. If any minor clearance or trimming is required within those dates, or if the initial vegetation clearance extends past the 1st of March due to unsuitable weather conditions, the works will be preceded by a confirmatory ecological survey (carried out by a qualified and suitably experienced ecologist) to ensure there are no active bird nests within the vegetation involved. If active bird nests are identified, works will stop and consultation will be undertaken with the National Parks and Wildlife Service (NPWS).	As required through the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM26	Water Quality Protection	EIAR Chapter 6 and Chapter 9	The Inland Fisheries Ireland (IFI) 2016 guidelines 'Guidelines on Protection of Fisheries During Construction Works and in Adjacent to Waters' will also be adhered to. For example, at the bridge crossing locations, the foundations of the clear span bridges will be positioned at least 2.5 m from a watercourse. All temporary crossings of watercourses will ensure the passage of water, fish and macroinvertebrates and will ensure erosion and sedimentation do not occur. Any discharged water during the construction phase will be in the rage of pH 6-9 and will not alter the pH of receiving waters by+/- 0.5 units. Furthermore, suspended solids in any discharged waters will not exceed 25 mg/l.	As required through the Contractor's CEMP.
MM27	Horizontal Directional Drilling (HDD)	EIAR Chapter 6 and Chapter 9	HDD will be used to cross watercourses by grid connection cables. This will avoid the need for instream works. The following mitigations are included to protect watercourses during HDD: • A competent and experienced Contractor will be appointed to undertake the horizontal directional drilling works; • The Contractor will prepare a directional drilling Method Statement which will outline the standard approach for the construction. The Method Statement will include a contingency plan for frac-out and for excessive ground settlement; • The Contractor will undertake the directional drilling in accordance with industry best practice including British Standard EN 16191:2014 Tunnelling machinery, safety requirements and CIRIA C648 'Control of water pollution from linear construction projects Technical Guidance' (CIRIA, 2006); • The Contractor will ensure that all personnel working on site are trained in pollution incident control response. A regular review of weather forecasts of heavy rainfall is required, with the Contractor required to prepare a contingency plan for before and after such events; • Weather conditions will be considered when planning construction activities to minimise the risk of runoff from site; • There will be no storage of fuels within 30 m of the watercourse;	As required through the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring

			• Provision of exclusion zones and barriers (silt fences) between any excavated material and any surface water features will be installed to prevent sediment washing into the receiving water environment. Silt fences will be installed and the contractor will ensure that silt fences are regularly inspected and maintained during the construction phase;
			• If dewatering is required as part of the works (e.g., in trenches for underground cabling or in wet areas), water must be treated prior to discharge;
			• To prevent loss of bentonite or 'frac-out' from occurring, a series of actions will be implemented; the drill fluids operator will monitor drill fluid density, viscosity and solids content on an ongoing basis, to ensure that the fluid does not increase in viscosity, requiring additional pressure to maintain mobility;
			• In critical cases, viscometers will be used to measure drill fluid gel strength and shear strength. Filtrate can also be measured to calculate the amount of filter cake building up on the internal wall of the bore. Any increases in pump pressure experienced by the drill operator will be investigated immediately to prevent the risk of pressure build up within the annulus. In some circumstances, dependant on the drilling equipment used, the pilot drill borehole assembly will be fitted with a down hole pressure monitor to measure pressure in the annulus between the drill and the bore wall. This will give an early indication of pressure build up in the hole and allow the drill operator to prevent a 'frac-out'. If there is a risk of a 'frac-out' a number of measures will be implemented including:
			  ○ Pumping a pill of drilling fluid with a higher density to the risk zone; and
			  ○ Circulate and pump loss circulation material (typically cork or manufactured inert polymers) to the risk zone to seal the risk zone, grouting of the risk zone, and, or launch a packer before the risk zone.	



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• The Contractor will implement procedures to maximise the recirculation or reuse of drilling fluid to minimise waste disposal; • Disposal of drilling fluids will be the responsibility of the Contractor to an approved and licenced waste facility; • Monitoring of the drilling operations will be undertaken at all times by the Contractor. The monitoring will include visual inspection of the pits and monitoring of the volume of returns flowing back to the entry pit. The monitoring personnel will be in constant communication with the drilling rig operator and thus will be able to immediately cease drilling if necessary; and • Buffer strips of natural uncleared vegetation shall be preserved between construction activity. Reception pits will be situated outside of the riparian zone. A buffer zone width for smaller channels (<10 m) of 20 m or greater will be maintained.	
MM28	Broadleaved woodland (WD1 habitat)	EIAR Chapter 6	The removal of broad leaved woodland for the project will be mitigated by the planting of native broad leave woodland at the onsite compound sites.	As required through the Contractor's CEMP.
MM29	Otter	EIAR Chapter 6	Twilight working hours (i.e., time between dawn and sunrise and dusk and sunset), especially at the clear span bridge locations, will be restricted as far as possible. Otter are crepuscular species and as such disturbance will be reduced by restricting the amount of twilight working hours.	As required through the Contractor's CEMP.
MM30	Bats	EIAR Chapter 6	A 100 m buffer zone which is established from each turbine during the construction phase will be maintained throughout the operational phase of the proposed project.	As required through the Contractor's CEMP.
Ornithology				
MM31	Bird Protection	EIAR Chapter 7	The Bird Protection Plan (BPP) will be followed (see pre-construction mitigation and EIAR Chapter 7).	As required by the Contractor's CEMP and BPP.
Land, Soils and Geology				
MM32	Land Use	EIAR Chapter 8	Vegetation clearance will be kept to a minimum. Construction vehicles will be restricted to designated areas and access roads in order to avoid effecting adjacent habitats and to ensure that soil compaction is restricted to these areas.	As required by the Contractor's CEMP.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			All disturbed ground outside of the permanent footprint will be fully reinstated following the completion of the works.	
			Biodiversity enhancement measures will be undertaken to improve ecological habitats as detailed in EIAR Chapter 6 Biodiversity.	
MM33	Soil protection	EIAR Chapter 8	The CEMP and Spoil Management Plan (EIAR Appendix 2-4) will be fully implemented to ensure proper handling, storage, and reuse of soils.	As required by the Contractor's CEMP.
			Hazardous substances (fuel, oils, chemicals) will be stored in bunded areas (110% capacity) with impermeable bases.	
			Spill response protocols include secondary containment, drip trays, supervised refuelling, and impermeable refuelling zones will be implemented.	
			Topsoil & subsoil will be stored separately (max. 3 m height), protected from contamination, and handled in dry conditions.	
MM34	Potential for contamination - Concrete/cement management	EIAR Chapter 8	Contractors will be required to provide a designated bin for washing down the chutes of concrete lorries on site.	As required by the Contractor's CEMP.
			Wash down and washout of concrete transporting vehicles will not take place on site. It is proposed to washout at the (offsite) source concrete batching site to prevent cementitious material and water entering the surface water network.	
			Waste material will be removed from site to an appropriate waste permit facility.	
			Disposal of excess concrete on any part of the construction site will be prohibited.	
MM35	Soil Compaction and Erosion	EIAR Chapter 8	Landscaping areas will be sealed and levelled using the back of an excavator bucket to minimise the potential for erosion. The upper vegetative layer will be stored with the vegetation part of the sod facing the right way up to encourage growth of plants and vegetation at the surface to prevent erosion.	As required by the Contractor's CEMP.
			The borrow pit deposition area surfaces will be stabilised by the establishment of natural vegetation.	
			Where mineral soil is not directly suitable for construction it will be used for reinstatement works and will be geo-engineered as necessary.	
			The construction traffic will utilise the permanent access road network for access and egress, and this access will be constructed in advance of other ground works in a sequential manner.	

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			Soils, overburden, and rock will be reused on site to reinstate any excavations where appropriate.	
			Access tracks will be constructed first to allow for access within the proposed project. Vehicular movements will be restricted to the footprint of the proposed project, particularly with respect to the newly constructed access tracks. This means that machinery must be kept to the tracks and aside from advancing excavations do not move onto areas that are not permitted for the development, such as areas which have not been designated for access or infrastructure.	
			Construction of internal electricity transmission cables will present similar, but lower-level risks, to the construction risks outlined above, and the same mitigation measures will be adopted as above. Surplus material from the onsite roads will be reused on site in the borrow pits or on road upgrades.	
MM36	Proposed grid connection and works areas of the proposed TDR	EIAR Chapter 8	The majority of the proposed GCO One cabling will be laid in the public road. Construction method statements and templates will be implemented to ensure that the proposed GCO infrastructure is installed in accordance with the correct requirements, materials, and specifications of ESBN and EirGrid. The ducts will be installed and the trenches will be reinstated in accordance with ESBN/EirGrid, private third-party landowners and County Council specifications.	As required by the Contractor's CEMP.
			For concrete and asphalt/bitmac road sections, it is proposed to carry out immediate permanent reinstatement in accordance with the specification and to the approval of the local authority and/or private landowners, unless otherwise agreed with the local authority. Surplus excavated bitmac material will be brought to a recycling facility for processing in accordance with the circular economy approach.	
			For offroad i.e. access tracks/grass sections, the cable section will be laid within an existing access track. Silt fences will be utilised along the offroad sections. Short sections (<50m) will be excavated and reinstated on a phased basis with suitable excavated material to ground level and finish in a gravel track as per the EirGrid/ESBN specification. By limiting the excavated sections, the potential for compact or erosion is limited.	
Hydrology and Hydrogeology				
MM37	Surface Water Quality	EIAR Chapter 9	The SWMP will be implemented by the appointed contractor and will be regularly audited throughout the construction phase. The Environmental Manager will be required to stop works on site if he/she	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			is of the opinion that a mitigation measure or corrective action is not being appropriately or effectively implemented.	
			Local surface water features at the proposed wind farm site boundary will be monitored pre-construction and during construction to take account of any variations in the quality of the local surface water environment as a result of activities related to the proposed wind farm site. Inspections of silt traps are critical after prolonged or intense rainfall while maintenance will ensure maximum effectiveness of the proposed measures. Stockpiles will be evaluated and monitored and kept stable for safety and to minimise erosion. Turbidity monitors/alarms will be strategically placed upgradient and downgradient of the works to assess the effects, if any, of the main construction works including bridge crossings and turbine base construction. Elevated turbidity could result from a number of on-site construction activities or from off-site sources i.e. erosion, forestry or agricultural activities. Where elevated turbidity is noted both upstream and downstream, visual checks will be undertaken. All monitoring equipment will be calibrated regularly to ensure that results are accurately measured. Corrective Actions would include: • Investigate whether channels used to convey water are protected with vegetation, erosion control blankets, or a similar erosion control measure. If not, implement appropriate erosion control measures. • Check all outlets and locations of turbidity monitors • Stop dewatering if the downgradient area shows elevated turbidity or erosion. • Check outlet protection or a velocity dissipation device. • Ensure a stable, erosion-resistant surface (e.g., well-vegetated grassy areas, clean filter stone, geotextile underlay) in place at outlets. • Check for leaking pumps, hoses, and pipe connections and fix same if identified.	



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			A programme of inspection and maintenance will be designed, and dedicated construction personnel assigned to manage this programme. A checklist of the inspection and maintenance control measures will be developed, and records kept. During the construction phase, field testing, sampling and laboratory analysis of a range of parameters will be undertaken at adjacent watercourses, specifically following heavy rainfall events (i.e., weekly, monthly and event-based as appropriate). Monitoring and maintenance as required throughout the construction stage.	
			All near-stream construction activities will be conducted in compliance with Inland Fisheries Ireland's (IFI) guidance document "Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites" (2016).	
			For each stream crossing, two lines of silt fence will be erected to provide a physical separation, which will trap suspended sediment from the works area. Silt fences will be inspected routinely, and inspections will be increased after runoff events. A clear span bridge will be utilised on the smaller Smithstown_15 stream and Smartscastle stream. Commercial forestry drains will be crossed using standard culverts.	
MM38	Forestry: Felling	EIAR Chapter 9	The Standards for Felling and Reforestation describe the universal standards that apply to all felling (thinning, clear felling) and reforestation projects on all sites. The standards will be implemented under a felling licence issued by the Department of Agriculture, Food & the Marine.	
			In accordance with the Forestry and Water Quality Guidelines (Forestry Service, 2000), buffer zones will be identified and marked out on the ground. These guidelines deal with sensitive areas, erosion, buffer zone guidelines for aquatic zones, ground preparation and drainage, chemicals, fuel and machine oils. Construction activities will be curtailed within the buffer zones in order to reduce erosion and sedimentation and, therefore, to protect surface water quality. Buffer zone widths vary from 10 m to 25 m, depending on slope and soil erosion classification.	
			The slopes across the proposed wind farm site are predominantly moderate (<1:10) with steeper slopes to the southeast and northeast. As the soil type varies across the proposed wind farm site, in line with	



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			the Forestry Service Guidelines (2000) a 10 m to 20m buffer zone is appropriate.	
			All associated tree felling will be undertaken using good working practices as outlined in the Forestry Report and the CEMP, the Forestry Harvesting and Environment Guidelines (Forestry Service, 2000) and the Forestry and Water Quality Guidelines (Forestry Service, 2000). Brash mats will be used to support harvesting and forwarding machinery. The brash mats reduce erosion of the surface and will be renewed as they become used and worn over time.	
MM39	Forestry: Silt fencing / sediment traps	EIAR Chapter 9	During any near stream construction work, silt traps and double row silt fences will be placed immediately down-gradient of the construction area for the duration of the construction phase.	
			Sediment traps will require monitoring and maintenance throughout the construction stage. Sediment traps will be constructed and maintained in line with the requirements of the Forest Road Manual and Forest Drainage Engineering – A Design Manual (Forestry Schemes Manual, 2011).	
MM40	Forestry: Drainage	EIAR Chapter 9	With reference to the COFORD 2002 guidance , the following measures will be implemented in relation to the existing forest drainage: • Minimise the crossing of drains during felling and extraction and restrict machine activity to brashed extraction racks and forwarding routes; • Where a drain crossing is needed, based on the size of the forest drain one of the following methods will be selected that prevents the breakdown and erosion of drain sides, namely: o For larger drains, deploy a heavy-duty plastic culvert lengthways into the channel and cover with brash material. The culvert must be of a diameter approximating the depth of the drain, to avoid any unnecessary undulation along the extraction route. o Where required, a solution for smaller drains is to temporarily lay log sections lengthways into the channel and overlay with brash. Again, logs will be that approximate to the depth of the channel to be crossed.	
MM41	Watercourse crossings	EIAR Chapter 9	Minimise the crossing of streams during felling and extraction by choosing alternative routes which avoid the watercourses/aquatic zones.	

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			Direct crossing over the stream bed will not be permitted. Water features will be crossed at a right angle to the flow of water. Any necessary crossing will be via an appropriate structure that spans proud of the flow of water and prevents the breakdown and erosion of the banks.	
MM42	Concrete Management	EIAR Chapter 9	Concrete is required for the construction of the turbine bases and foundations. Wash out of the main concrete mixing drum will not be permitted on site; wash out is restricted only to chute wash out. Wash down and washout of the concrete transporting vehicles will take place at an appropriate facility off-site. Cement and raw concrete will not be spilled into watercourses. Ready-mixed supply of wet concrete products and emplacement of pre-cast elements such as culverts and the clear span bridges across watercourses will take place. During the delivery of concrete on site, only the chute will be cleaned on-site. Chute cleaning will be undertaken at lined cement washout lagoons. The collected concrete washout water and solids will be emptied on a regular basis. Washout will be undertaken at the construction compounds. These lagoons will be cleaned out by a licensed waste contractor. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Weather forecasting will be used to plan dry days for pouring concrete. The pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event.	As required by the Contractor's CEMP.
MM43	Fuels & Chemicals	EIAR Chapter 9	With regards to on-site storage and handling of potentially pollutant materials: • All on-site refuelling will be carried out by a trained competent operative. • Mobile measures such as drip trays and fuel absorbent mats will be kept with all plant and bowsers and will be used as required during all refuelling operations; • A spill kit will be stored with the bowser and the person operating the bowser will be trained in its use; • All equipment and machinery will have regular checking for leakages and quality of performance and will carry spill kits; • Any servicing of vehicles will be confined to designated and suitably protected areas such as construction compounds; and	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• Additional drip trays and spill kits will be kept available on site, to ensure that any spills from vehicles are contained and removed off site.	
MM44	Drainage Management	EIAR Chapter 9	Interceptor drains will be installed up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained.	As required by the Contractor's CEMP.
			Track edge drainage/swales will be implemented to control run-off from the running surface to lower water levels in the subgrade, to control surface water and to carry this flow to outlet points. Swales along access tracks will be installed in advance of the main construction phase.	
			Swales will provide additional storage of storm water, located along gradient. Given the steep longitudinal gradients on some sections of access track, regular check dams will be employed within the trackside swale on these sections to reduce the flow velocity and provide settlement opportunity. Swales will re-vegetated following excavation. Vegetation will reduce the flow velocity, treat potential pollutants, increase filtration and silt retention.	
			Settlement ponds will be located downstream of road swale sections and at hardstand locations, to manage/buffer volumes of runoff discharging from the drainage system during periods of high rainfall, thereby reducing the hydraulic loading to watercourses. Settlement ponds are designed in consideration of the greenfield runoff rates. The settlement pond design is based on primary settling out of suspended solids from aqueous suspension. Settlement ponds will be installed alongside with the formation of the road and will be fenced off for safety. Only the proposed onsite access roads will be used for project-related traffic.	
MM45	Borrow Pit reinstatement areas/ deposition areas	EIAR Chapter 9	Excavated material will be reused on site. The stockpiling of materials will be carefully supervised. Surplus material will be placed in the borrow areas.	As required by the Contractor's CEMP.
			The nature of the spoil deposition areas is an important measure in mitigating against suspended solids in run-off. The spoil deposition areas are all >50 m from rivers and relatively flat. This mitigates against potential stability issues.	



Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM46	Stream crossings / Proposed GCR and works areas on the proposed TDR	EIAR Chapter 9	For the stream crossings, two lines of silt fence will be erected to provide a physical separation, which will trap suspended sediment from the works area. Silt fences will be inspected routinely and inspections will be increased after runoff events. Clear span bridges will be used to cross streams/rivers on site. Commercial forestry drains will be crossed using standard culverts.	As required by the Contractor's CEMP.
			Silt fencing will be erected at the location of stream crossings along the proposed GCOs. Appropriate steps will be taken to prevent soil/dirt generated during the accommodation works to the proposed TDR from being transported on the public road.	
			Appropriate steps will be taken to prevent soil/dirt generated during the accommodation works to the proposed TDR from being transported on the public road. Road sweeping vehicles will be used as required, to ensure that the public road network remains free of soil/dirt from the location of the proposed TDR works areas when required. This will reduce the potential for sedimentation of surface watercourses locally.	
MM47	Groundwater Quality	EIAR Chapter 9	During the construction phase, all works associated with the construction of the wind farm site will be undertaken in accordance with the guidance contained within CIRIA Document C741 'Environmental Good Practice on Site' (CIRIA, 2015). Groundwater pumped from excavations will be treated to remove silt by the use of silt bags. Water will discharge from the silt bags into settlement ponds and the SuDS network.	As required by the Contractor's CEMP.
			Groundwater encountered will be managed and treated in accordance with CIRIA C750, 'Groundwater control: design and practice' (CIRIA, 2016). All personnel working on the proposed project will be responsible for the environmental control of their work and will perform their duties in accordance with the requirements and procedures of the CEMP.	
			The dewatering operations will be inspected once each day when dewatering is taking place to ensure that dewatering treatment controls are working correctly and to evaluate whether there are observable indicators of sediment discharges. Where any issues are encountered, action will be undertaken to correct any problems at the proposed project or with the dewatering controls that may have contributed to the discharges.	

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			Regular monitoring of groundwater (levels and quality) will take place using existing monitoring boreholes during the construction phase. The existing groundwater well on site will be monitored on site during construction and for a period following cessation of construction activities (to be agreed with the relevant authorities).	
Material Assets				
MM48	Telecommunications	EIAR Chapter 11	In the unlikely event that a communication underground cable or link is damaged or interfered with during construction, the operator will be contacted to agree a repair which will be carried out as soon as possible at the developers cost. In addition, the developer has signed an agreement with 2RN prior to commit to restoring service to any end users that may have their service disrupted as a result of the proposed project. This is standard industry practice and will eliminate any potential effects in this regard.	As agreed with 2RN.
MM49	Aviation	EIAR Chapter 11	The following standard practices will be undertaken: • An aeronautical warning light scheme will be agreed with the IAA and Irish Air Corps; • The final as-constructed coordinates and dimensions of each turbine be mapped and provided to Kilkenny County Council and other stakeholders, including the IAA, Irish Air Corps, and Waterford Airport, prior to erection of turbines to ensure that maps and databases are up-to-date for flight navigation; • 30 days' notice will be given to the IAA prior to any crane operations commencing during the construction phase.	As required by the Contractor's CEMP.
MM50	Waste Management (including wastewater)	EIAR Chapter 11	Segregation of waste will be carried out to maximise the potential for waste recycling and minimise potential effect on waste services. Suitably permitted commercial waste collectors will be employed to remove any waste arisings generated from construction to the nearest appropriately licensed waste management facilities.	As required by the Contractor's CEMP.
			Wastewater from the staff welfare facilities will be managed by means of a sealed storage tank, with all wastewater being tankered off-site occasionally (as required) by a permitted waste collector to a wastewater treatment plant. The permitted waste collector will also be responsible for ensuring clean water storage tanks are topped up. The proposed wastewater storage tank will be fitted with an automated alarm system that will provide sufficient notice that the tank requires emptying. It is proposed to use low volume flush toilets (such as those in commonly used port-a loos) and low volume sink faucets to significantly reduce the volume of waste water produced.	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
Noise & Vibration				
MM51	Noise and Vibration	EIAR Chapter 12	A schedule of noise control measures has been formulated in accordance with best practice guidance, and the contract documents will require the Contractor to implement these measures.	As required by the Contractor's CEMP.
Air Quality and Climate				
MM52	Dust Management / Air Quality – Communications	EIAR Chapter 14	An Environmental Manager (EM)/Clerk of Works will be in assigned by the appointed contractor. The EM will be responsible for co-ordinating the day-to-day management of environmental impacts during the construction phase. The EM will be responsible for performing inspections as deemed necessary and manage responses to environmental incidents. The name and contact details of the EM will be responsible for construction dust management and air quality issues will be displayed at the construction compound/site boundary hoarding, as well as head/regional office contact details. A complaints register will be kept by the appointed contractor detailing all telephone calls and letters of complaint received in connection with dust nuisance or air quality concerns, together with details of any remedial actions carried out.	As required by the Contractor's CEMP.
MM53	Dust Management / Air Quality – Construction area works management	EIAR Chapter 14	Construction compounds will be laid out so that machinery and dust causing activities such as stockpiles are located away from receptors, as far as is practicable. The appointed contractor will provide a site hoarding of 2.4 m height along noise sensitive boundaries, at a minimum, at the Construction Compounds, which will assist in minimising the potential for dust impacts off-site. Construction works area fencing, barriers and scaffolding will be kept clean using wet methods. Stockpiles will be covered to prevent wind whipping. Any chutes and conveyors will be enclosed and skips will be covered. Drop heights from any conveyors, loading shovels, hoppers and other loading or handling equipment will be minimised. Fine water sprays will be used on such equipment where visible dust plumes are generated. Cutting, grinding or sawing equipment will be fitted with or used in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. Equipment will be readily available in the construction works areas site to clean any dry spillages. Spillages will be cleaned up as soon as reasonably practicable after the event using wet cleaning methods.	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			An adequate water supply for effective dust or particulate matter suppression and mitigation will be ensured, and non-potable water will be used where possible and appropriate. Construction works area runoff of water or mud will be managed as per the project SWMP and CEMP.	
MM54	Dust Management / Air Quality – Operating Vehicles / Machinery	EIAR Chapter 14	Engines of all vehicles will be switched off engines when stationary - idling vehicles are not permitted. The use of diesel- or petrol-powered generators will be avoided and mains electricity or battery powered equipment will be used where practicable. The Traffic Management Plan will be adhered to be the appointed contractor.	As required by the Contractor's CEMP.
MM55	Dust Management / Air Quality – Earthworks Activities	EIAR Chapter 14	Materials with the potential to produce dust, such as excavated material, will be removed from the construction works area as soon as possible, unless being re-used within the construction works area. Areas exposed by earthworks will be re-vegetated to stabilise surfaces as soon as practicable. Hessian, mulches or trackifiers will be used where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. Cover will only be removed in small areas during work and not all at once. During dry and windy periods and when there is a likelihood of dust nuisance (defined under "Monitoring" measures below), water-based dust suppression (e.g. bowser) will operate to ensure soil moisture content is high enough to increase the stability of the soil and thus suppress dust.	As required by the Contractor's CEMP.
MM56	Dust Management / Air Quality – Construction Activities	EIAR Chapter 14	Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out, unless this is required for a particular process. Smaller supplies of fine power materials bags will be sealed after use and stored appropriately to prevent dust escaping.	As required by the Contractor's CEMP.
MM57	Dust Management / Air Quality – Measures specific to trackout	EIAR Chapter 14	A speed restriction of 15 kph will be applied as an effective control measure for dust for on-site vehicles. Vehicles transporting loose materials (e.g. spoil or sand) entering and leaving the works areas and construction compounds will be covered with tarpaulin to prevent escape of materials during transport. Before entrance onto public roads, trucks will be checked to ensure the tarpaulins are properly in place. Where construction work area or construction compound conditions result in large amounts of mud building up on truck wheels, wheel	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			washing will be carried out for trucks before they use the public road network. Water-assisted dust sweeper(s) will be used at the access points to a construction compound and the immediate adjoining local road, to remove, as necessary, any material tracked out of the compound. Any on-site haul routes will be inspected for integrity and necessary repairs to the surface will be carried out as soon as reasonably practicable.	
MM58	Embodied carbon	EIAR Chapter 14	Embodied carbon of materials and construction activities will be the primary source of climate impacts during the construction phase. Best practice measures to reduce the embodied carbon of the construction works will be implemented: • Appointing a suitably competent contractor who will undertake waste audits detailing resource recovery best practice and identify materials can be reused/recycled; • The use in construction plant and equipment of sustainably sourced Hydrotreated Vegetable Oil (HVO) as a 100% replacement of fossil fuels. HVO use is considered a stepping stone towards the use of electric construction plant as they become available in the market; • The replacement, where feasible, of standard concrete containing Portland cement concrete with an alternative concrete mix with lower associated embodied carbon, as per the Climate Action Plan. This will be a minimum of 30% GGBS replacement, or concrete with equivalent or lower associated embodied carbon; • Procurement contracts will ensure that material choices with lower associated embodied carbon relative to standard construction materials are considered favourable during tender; • Materials will be reused on site where possible; • Prevention of on-site or delivery vehicles from leaving engines idling, even over short periods; • Ensure all plant and machinery are well maintained and inspected regularly;	As required by the Contractor's CEMP.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• Minimising waste of materials due to poor timing or over ordering on site will aid to minimise the embodied carbon footprint of the site; • Where practicable, opportunities for materials reuse will be incorporated within the extent of the proposed project including the use of reclaimed asphalt and recycled aggregate, which will reduce the virgin material needs; and • Sourcing materials locally where possible, such as local quarries for aggregates required on site to reduce transport related CO2 emissions.	
MM59	Climate Change	EIAR Chapter 14	In terms of impact on the proposed project due to climate change, during construction the Contractor will mitigate against the effects of extreme rainfall/flooding through site risk assessments and method statements. The Contractor will mitigate against the effects of extreme wind/storms, temperature extremes through site risk assessments and method statements. All materials used during construction will be accompanied by certified datasheets which will set out the limiting operating temperatures and the Contractor will ensure that these are complied with. Temperatures can affect the performance of some materials, and this will require consideration during construction. During construction, the Contractor will mitigate against the effects of fog, lighting and hail through site risk assessments and method statements.	As required by the Contractor's CEMP.
Archaeology and Cultural Heritage				
MM60	Topsoil / Excavations	EIAR Chapter 15	A suitably qualified archaeologist will be appointed to monitor all stripping of topsoil across the proposed project. All stripping of topsoil across the proposed project, including excavations as part of the proposed GCO One within the ZoN of AH02 (church, graveyard, mill, redundant record), the c. 2.5 km section of greenfield included in GCO One, accommodation works along the proposed TDR and townland boundary crossings will be monitored by a suitably qualified archaeologist. Should any features of archaeological potential be discovered during the course of the works further mitigation will be implemented as required and agreed with the National Monuments Service.	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
Traffic and Transportation				
MM61	Traffic Management Plan (TMP)	EIAR Chapter 16	The Traffic Management Plan (TMP) is a comprehensive set of mitigation measures that will be put in place by the Contractor before and during the construction phase of the project to minimise its effects. The TMP proposed for the Ballyfasy Wind Farm is included in EIAR Appendix 16-1. The following mitigation has been incorporated into the TMP: • Traffic movements will be limited to 07:00 – 19:00 Monday to Friday and 07:00 – 14:00 Saturday, unless otherwise agreed in writing with Kilkenny County Council. • HGV movements will be restricted during peak road network hours (including school hours) from 08:00 – 09:00 and 17:00 – 17:00 Monday to Friday, unless otherwise agreed in writing with Kilkenny County Council. • Clear construction warning signs will be placed on the public road network to provide adequate warning to road users of the presence of the construction site and slower-moving vehicles making turning manoeuvres. • Haul route selection to avoid sensitive receptors. • The existing and widened internal access roads facilitate queuing of construction vehicles off the public road. • Traffic Management Operatives (TMOs) will be provided by the principal contractor in accordance with the Traffic Management Plan at the site access during peak construction traffic activities. • Wheel washes will be provided on site as per the site layout drawings (see EIAR Appendix 1-1) to prevent the build-up of mud on public roads.	As required through the TMP.
			Only essential deliveries will be scheduled to occur on the same days as the concrete pours.	As required by the Contractor's CEMP.
			Maintenance of the hedgerows within the visibility splays shall be undertaken to maintain the required visibility splays and mitigate the potential for overgrown vegetation which may result in inadequate visibility at the access and crossing points during the construction activities.	As required by the Contractor's CEMP.
			Mitigation measures on the haul roads and cable route includes: • Selection of a viable route with the lowest impact on the road network. • Avoidance of sensitive receptors and urban settings	As required by the Contractor's CEMP.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			○ The site access route encourages the use of the existing infrastructure in the area while avoiding the local road and potential sensitive receptors. ○ Turbine delivery route along national roads with largest capacity to accommodate the vehicles. ○ The typical construction materials are obtained from borrow pits onsite and from local quarries in the proximity of site. ○ Restricting HV movements during peak sensitive times on the road networks (i.e., at school times). ○ The grid connection route will be carried out at off-peak times. • To mitigate the impact of the AIL delivery on the road network, the advanced works will be undertaken (i.e., hardstanding, making signs demountable, utility diversions etc).	
MM62	Traffic – GCO One/ road closures/ reinstatement	EIAR Chapter 16	Should GCO One be constructed, the appointed Contractor shall consult and comply with the Roads Authority, An Garda Síochána and other Emergency services to agree a suitable diversion route prior to implementing a road closure. To mitigate the impact of the cable laid within the public road, the reinstatement works will be backfilled and reinstated as soon as practicable. The reinstatement works will be undertaken in accordance with the "Purple Book" best guidance and practices. The proposed reinstatement and construction details and phasing will be agreed with associated Local Authorities in advance of the works. The Contractor will be responsible for arranging for the required road opening licences.	As required by the Contractor's CEMP.
Operational Phase				
Description of Proposed Project				
MM63	Operational Health and Safety	EIAR Chapter 2	Access to the turbines is through a door at the base of the structure, which will be locked at all times outside maintenance visits.	As required through the project Operational Management Plan / Health and Safety Plan.
			Signs will be erected at suitable locations across the site as required for the ease and safety of operation of the wind farm.	As required through the project Operational Management Plan / Health and Safety Plan.
			The components of a wind turbine are anticipated to have a useful lifespan of 35 years or more and are equipped with a number of safety devices to ensure safe operation during their lifetime. During the operation of the wind farm regular maintenance of the turbines will be carried out by the turbine manufacturer or appointed service	As required through the project Operational Management Plan / Health and Safety Plan.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			company. A project or task specific Health and Safety Plan will be developed for these works in accordance with the site's health and safety requirements.	
Population and Human Health				
MM64	Health and Safety	EIAR Chapter 5	All activities carried out during the operational phase will be in accordance with the requirements of the Safety, Health and Welfare at Work Act 2005 as amended and Regulations made under this Act.	As required through the project Operational Management Plan.
Ornithology				
MM65	Bird protection	EIAR Chapter 7	Where construction works are required during the breeding bird season (1st March to 31st August inclusive), mitigation measures to limit the impact of vehicular disturbance will be implemented. This will include no idling of vehicles, appropriate speed restrictions and dust suppression measures on site.	As required through the Contractor's CEMP.
			If significant operational works (for example widespread track upgrades or turbine replacement) be required during the breeding bird season (1st March to 31st August inclusive), the mitigation measures outlined for the pre-construction and construction phases will be implemented.	
Land, Soils and Geology				
MM66	Contamination Management	EIAR Chapter 8	Oil containing components of the wind turbines will be periodically refurbished and replaced.	As required by the project Operational Management Plan.
			Fuel and oil storage and handling requirements will be as detailed for construction, with permanent fuel and oil storage located within permanent covered bunds.	
			Welfare facilities will be provided at the substation location. These welfare facilities will produce foul effluent and these effluents will be stored in a holding tank prior to removal to an approved treatment facility.	
Hydrology and Hydrogeology				
MM67	Surface Water Management Plan	EIAR Chapter 9 and EIAR Appendix 2-8	The Surface Water Management Plan will continue to be implemented in the operational phase.	As required through the SWMP.
Shadow Flicker				

Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM68	Turbine Shutdown	EIAR Chapter 10	Due to the potential for shadow flicker to affect receptors within the shadow flicker study area, it is proposed that a shadow control system will be installed on each of the wind turbines that have the potential to cause shadow flicker for sensitive receptors. The control system will detect and calculate, in real-time: • Whether shadow flicker has the potential to affect nearby properties, based on pre-programmed co-ordinates for the properties and turbines outlined in this assessment; • Wind speed (can effect how fast the proposed turbine will turn and how quickly the flicker will occur); • Wind direction; • The intensity of the sunlight. When the sunlight is strong enough to cast a shadow, and the shadow falls on a property or properties, then the proposed turbine will automatically shut down; and will restart when the potential for shadow flicker ceases at the affected properties.	As required through the Turbine Shutdown Scheme.
			A Turbine Shutdown Scheme will be the primary mitigation measures for the shadow flicker effect and will be implemented for the proposed project based on the predicted shadow flicker at each shadow flicker receptor. The Turbine Shutdown Scheme will be employed to ensure that shadow flicker does not occur at the affected property(s). A process will be established by the proposed wind farm operator whereby local residents can highlight any concerns or complaints about the operation of the scheme. All concerns raised will be investigated by the proposed wind farm operator and the turbine shutdown software adjusted accordingly, to ensure that the turbines shut down at the appropriate time. After adjustments are made to the software, the flicker occurrence will be monitored where the residents still report flicker occurrence. This will determine any further adjustments that might be required to shut down times for any given turbine.	
			If there is sufficient existing screening at a shadow flicker receptor, the Turbine Shutdown Scheme may not be necessary for that receptor. The Applicant will engage with any affected residents to investigate options for new or additional screening measures (such as planting vegetation to act as a screen or installation of suitable window blinds in the affected rooms of the residence) where appropriate and agreeable to the affected residents. If screening is not acceptable	



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			and/or will not be effective the Turbine Shutdown scheme as set out in Chapter 10 will be implemented to ensure 'near zero shadow flicker'. Where agreed screening measures are implemented, the effectiveness of the measures will be monitored and if the measures are not functioning to the satisfaction of the property owner/occupant, they will be included in the Turbine Shutdown Scheme as set out in Chapter 10.	
Material Assets				
MM69	Aviation	EIAR Chapter 11	The following standard practices will be undertaken: • The turbines will be included in the IAA Electronic Air Navigation Obstacle Dataset; • Lighting of the proposed wind turbines in the interest of aviation safe-guarding (i.e., an aeronautical warning light scheme), as the proposed project would be considered as an en-route obstacle, will be required, will be agreed with the IAA, and Irish Air Corps prior to operation; and • As-constructed coordinates of the turbines will be provided to the IAA.	To be agreed with the relevant stakeholders.
Noise and Vibration				
MM70	Noise and Vibration	EIAR Chapter 12	In the event of a complaint indicating potential excessive amplitude modulation or tonality associated with the proposed project, the operator will fully investigate the complaint in collaboration with the turbine manufacturer, through review of the meteorological periods and conditions during which the reported AM or tonality occurs. A noise monitoring protocol would be established, in consultation with the local authority, which would set out the location and analysis methodology to be employed for the noise monitoring. This can be secured via a planning condition. If an ongoing issue with excessive AM is established, a mitigation strategy to reduce the level of AM will be implemented through engineering methods, operational changes and/or curtailment of specific turbines. The operator would first appoint a qualified acoustic consultant to objectively assess the level of AM in accordance with the methods outlined in the Institute of Acoustics IOA Noise Working Group (Wind Turbine Noise) Amplitude Modulation Working Group Final Report: A Method for Rating Amplitude Modulation in Wind Turbine Noise (9 August 2016) or subsequent revisions.	As required by the project Operational Management Plan.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			The measurement method outlined in the IOA AMWG document, known as the 'Reference Method', provide a robust and reliable indicator of AM and yield important objective information on the frequency and duration of occurrence, which can be used to evaluate different operational conditions including methods3, determined in liaison with the turbine manufacturer, to minimise the occurrence of excessive AM. Examples of mitigation measures which could be considered include turbine blade modifications, the implementation of specific operational controls for the relevant turbine type or operating turbines in different operational modes or turbine curtailment under specific operational conditions. The aim of the mitigation would be to minimise adverse impacts from excessive AM associated with the proposed project as much as is reasonably practicable. Similarly, if the complaints suggest the potential occurrence of clearly audible tonality in the wind turbine noise, the audibility of the tones will be investigated from measured data with a robust, objective method such as that included in ISO 1996-2:2017. If persistent occurrence of clearly audible tonality is identified, then the operator would liaise with the turbine manufacturer to investigate and implement measures to mitigate or minimise the occurrence of tonality as much as is reasonably practicable. This may also involve engineering methods or turbine operational changes for example. The commitment outlined to control amplitude modulation (AM) from wind turbines are considered best practice. The proposed approach provides a clear commitment that additional adverse impacts from excessive amplitude modulation (AM) or tonality associated with the operation of the proposed project will be effectively managed and minimised by the operator.	
MM71	Noise - Amplitude Modulation	EIAR Chapter 12	Prior to the commissioning of the wind farm, the developer will submit a Noise Complaint Monitoring Programme (NCMP) to the planning authority for written agreement. The NCMP will include a detailed methodology for noise measurement procedures for recording results and a protocol for managing complaints. Compliance noise surveys will be undertaken to verify compliance with any noise conditions applied to the development. It is common practice to commence surveys within six months of a wind farm being	

[3] See for example: Cand M. and Bullmore A. (2015), Measurements demonstrating mitigation of far-field AM from wind turbines. 6th International Meeting on Wind Turbine Noise Glasgow, 2015.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			commissioned. The guidance outlined in the IOA GPG and Supplementary Guidance Note 5: Post Completion Measurements (July 2014) will be taken into account. In the unlikely event that an exceedance of the noise criteria is identified as part of the commissioning assessment and relevant corrective actions taken. For example, implementation of noise reduced operational modes resulting in curtailment of turbine operation can be implemented for specific turbines in specific wind conditions to ensure turbine noise levels are within the relevant noise criterion or conditions turbine noise limits. Such curtailment can be applied using the wind farm SCADA system with a marginal reduction of the wind turbine performance.	
Air Quality and Climate				
MM72	Air Quality / Monitoring	EIAR Chapter 14	To determine if any short-term dust impacts will occur, a minimum of daily visual inspections for dust soiling of receptors (including roads, and surfaces such as street furniture, cars and windowsills) adjoining the construction works areas will be undertaken. Inspection results will be recorded in the site inspection log. Cleaning will be provided if necessary, such as in the event of a dust complaint resulting from the Proposed Scheme construction works. The potential for dust generation increases when rainfall is less than 0.2 mm/day and at wind speeds of greater than 10 m/s. To determine if these conditions are likely to affect the site, the weather forecast will be consulted daily, specifically the hourly forecasts for wind speeds as well as 12 hour rainfall radar showing anticipated amounts of precipitation in mm. The frequency of site inspections by the Environmental Manager responsible for dust management will be increased to a minimum of twice daily during the above conditions. The effectiveness of dust control methods will be monitored via visual inspections and work that would generate dust (e.g. moving materials from stockpiles, or transferring loose dry materials from trucks) will be limited in so far as is practicable during these weather conditions.	As required by the Operational Management Plan
Traffic and Transportation				
MM73	Operational Traffic	EIAR Chapter 16	In the event that a turbine requires replacing in the future, the proposed TDR at the construction phase will be considered, and the	As required by the project Operational Management Plan.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			swept path analysis will take into account any road improvements and changes to the network.	
Decommissioning Phase				
Population and Human Health				
MM74	Decommissioning Activities	EIAR Chapter 5	All activities carried out by the appointed Contractor during the decommissioning phase will be in accordance with the requirements of the Safety, Health and Welfare at Work Act 2005 as amended and Regulations made under this Act.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.
Biodiversity				
MM75	Decommissioning activities	EIAR Chapter 6	Decommissioning impacts are expected to be of a similar type and magnitude to those anticipated during the construction phase, but generally of a shorter duration and scale. The mitigation measures implemented during the construction phase are applicable for the decommissioning phase too.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.
Ornithology				
MM76	Bird protection	EIAR Chapter 7	The mitigation measures outlined for the pre-construction and construction phases regarding works during bird nesting season will be implemented to ensure compliance with relevant legislation.	As required through the Contractor's CEMP.
Land, Soils and Geology				
MM77	Decommissioning activities	EIAR Chapter 8	The risks arising from the decommissioning of the proposed project would be less than those for construction. Mitigation measures for decommissioning would conform to those given for construction in Chapter 8 and would be anticipated to be fully protective of the environment. There are no works proposed in relation to decommissioning phase works for the proposed GCO or on the works areas of the proposed TDR.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.
Hydrology and Hydrogeology				
MM78	Decommissioning activities	EIAR Chapter 9	Mitigation measures applied during decommissioning activities will be similar to those applied during construction where relevant. Some of the significant potential effects will be avoided by leaving elements of the proposed wind farm site in place. The hydrocarbon interceptor will be in place at the proposed substation site with regular inspection and maintenance, to ensure optimal performance. Given the requirement for sanitary facilities during decommissioning works, wastewater effluent will continue to be directed to the on-site holding tank, from where it will be tankered off-site to a suitably licensed wastewater treatment plant.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			The decommissioning phase will not require any significant works that will potentially affect the drainage network. A fuel management plan to avoid contamination by fuel leakage during decommissioning works will be implemented as per the construction phase mitigation measures. Mitigation measures to avoid contamination by accidental fuel leakage and compaction of soil by on-site plant will be implemented as per the construction phase mitigation measures in Chapter 9.	
MM79	Surface Water Quality	EIAR Chapter 9	SuDS measures will remain in place during the decommissioning period.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.
Material Assets				
MM80	Waste management	EIAR Chapter 11	Appropriately permitted waste collectors will be employed to remove any municipal waste, wastewater, or demolition waste generated within the wind farm site. The majority of wastes from decommissioned infrastructure will be recyclable, and the large items (turbines, met mast) will be collected and processed by appropriately licensed specialist companies with the capability to process these items correctly.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.
			Appropriately permitted waste collectors will be employed to remove any municipal waste, wastewater, or demolition waste generated within the wind farm site. The majority of wastes from decommissioned infrastructure will be recyclable, and the large items (turbines, met mast) will be collected and processed by appropriately licensed specialist companies with the capability to process these items correctly.	
Noise and Vibration				
MM81	Noise and Vibration	EIAR Chapter 12	In relation to the decommissioning phase, similar overall noise levels as those calculated for the construction phase would be expected, as similar tools and equipment will be used. The noise and vibration impacts associated with any decommissioning of the proposed project can be considered comparable to those outlined in relation to the construction phase albeit less works will be required as only above ground structures will be removed. The Contractor undertaking the construction and decommissioning works will be obliged to adopt best practice noise abatement measures contained in British Standard BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			– Noise and BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Vibration.	
Air Quality and Climate				
MM82	Air Quality: Decommissioning activities	EIAR Chapter 14	The same mitigation measures implemented during the construction phase will be applied during the decommissioning works for the management of dust.	As required by the agreed decommissioning plan / mitigation measures agreed at the time of decommissioning.
Traffic and Transportation				
MM83	Decommissioning Activities and Traffic	EIAR Chapter 16	A detailed TMP will be undertaken and will consider any road improvements and changes to the network. The plan will also consider the future baseline traffic in order to minimise the decommissioning phase effects in the vicinity.	As required by the agreed decommissioning plan and TMP / mitigation measures agreed at the time of decommissioning.

Table 7-2: Natura Impact Statement (NIS) Mitigation Measures

Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM1	Management of sedimentation	NIS	• No instream works will take place. Clear span bridges will be erected at five locations. The foundations of the clear span bridges will be positioned at least 2.5 m from a watercourse (IFI, 2016). • All temporary crossings of watercourses will ensure the passage of water, fish and macroinvertebrates and will ensure erosion and sedimentation do not occur (IFI, 2016). • Silt fences and double row silt fences will be erected along all areas where the construction works are within 20 m of the Arrigle_010 River, Arrigle_020 River, the Blackwater (Kilmacow)_020 River, the Smartscastle Stream_010 and/or within 10 m of a drainage ditch and 10 m around stockpiled material. All silt fences will be erected outside of flood zones. The silt fencing will remain in position during the full construction phase of the proposed project. • Silt fences will be constructed using a permeable filter fabric (Hy-Tex Terrastop Premium silt fence or similar approved). No mesh type silt fences will be permitted. Silt fencing will be installed as per the manufacturer's guidelines (the bottom section buried at least 10 cm deep) prior to any ground disturbance works. • All silt fencing will be installed under the supervision of an Ecological Clerk of Works (ECoW) who will employed by the contractor. • Surface water or water released to watercourses will be within prescribed water quality limits (i.e. ≤25 mg/L Total Suspended Solids [TSS] in accordance with the Freshwater Fish Directive [2006/44/EC] and Salmonid Waters Regulations [1988]).	Monitoring will be undertaken by the appointed ECoW.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• The excavated subsoil will be utilised on site and used to create bunds around the proposed facilities to create surface water runoff barriers. • Excavation works will not be carried out during or following heavy rainfall (i.e., if there is a yellow weather warning or higher in place or 5 mm in a 1-hour period). • A minimum 10 m untouched vegetated buffer zone will be retained between the silt fence and the watercourse. • No permanent storage of excavated material will be permitted within 50 m of the any watercourse within the Proposed Project or within 10 m from drainage ditches. • Stockpile management to prevent siltation of watercourses which will include; the establishment of vegetation on the exposed soil, silt fencing at the base of stockpiled material and direct runoff to the sites drainage system.	
MM2	Management of Pollutants	NIS	• Refuelling of plant and vehicles and the addition of hydraulic oil or lubricants to vehicles/equipment will be done on impermeable and bunded areas, not within 10 m of a non-sensitive watercourse or within 50 m of a sensitive watercourse. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur. Spill-kits and hydrocarbon-absorbent packs will be stored in the cabin of each vehicle and operators will be fully trained in the use of this equipment. An oil spill response plan will be developed for the construction works. • An accidental spillage emergency plan will be created for the construction phase of the proposed project. All site personnel will receive appropriate training to apply the accidental spillage emergency plan. • All machinery will be regularly maintained and checked for fuel, oil or hydraulic fluid leaks. • Servicing of machinery will only be undertaken within the construction compound or offsite. • All concrete will be mixed off site and poured in place at site. All concrete browsers will be washed down at a dedicated concrete washout onsite not within 10 m of a non-sensitive watercourse or within 50 m of a sensitive watercourse 50 m. • Concrete washings will not be disposed of onsite to any surface or ground water feature. All washings will be removed offsite and treated at a licensed facility. No chemicals that are deleterious to aquatic organisms will be used in cleaning works. All raw, uncured waste concrete will be cured at a designated location, 50 m of surface water conduit. • Waste will be removed from the proposed project and disposed of by an approved waste contractor in accordance with prevailing waste management regulations. • On completion of the works, all apparatus, plant, tools, offices, sheds, surplus materials, rubbish and temporary erections or works of any kind will be removed from the site.	Monitoring will be undertaken by the appointed ECoW.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
MM3	Surface Water Monitoring	NIS	Pre-construction, construction and post-construction phase surface water monitoring will be carried out. All surface water features will be monitored in order to record any variations in the quality of the local surface water environment related to the proposed project. The main water parameters in terms of their potential to cause damage to aquatic life, ecosystems and water quality in the receiving waters are outlined in NIS Table 6-1.	Monitoring will be undertaken by the appointed ECoW.
MM4	Clear span bridges	NIS	• The bridge construction works will be undertaken outside of the Annual Close Season for instream works (NRA, 2008b) (i.e., no works will be undertaken between October to April. • The works programme will also take account of weather forecasts and predicted rainfall. All large excavations, subsoil and vegetation stripping will be avoided during adverse weather. • A Method Statement detailing the proposed works will be prepared in advance by the contractor, and in agreement with Inland Fisheries Ireland (IFI). • The foundations of the clear span bridges will be positioned at least 2.5 m away from the edge of the riverbank. Temporary fencing will be erected, allowing a 3 m setback buffer from the riverbanks, creating an exclusion zone. The exclusion zone will protect the riverbanks and maintain safe passage of wildlife (otter) along the banks. The fences will also act as a safe working zone for construction personnel. The fencing will also ensure that no material is stored in proximity to the river's edge. All material will be stored a minimum of 20 m from the bank of the river. • Silt fences will be installed between the abutment works and the edge of the riverbank, on either side of the banks. The silt fencing will be erected as per the manufacturer's guidelines, under the Ecological Clerk of Works (ECoW) supervision and will be maintained until all ground disturbance has ceased and vegetation re-established. Once installed, the silt fence will be inspected regularly during construction and more frequently during heavy rainfall events. • The false bridge decking and fine mesh netting, which will be established below the existing bridge will ensure that any debris from the cutting of the existing bridge deck and abutments, will be captured on the decking and collected and removed offsite. No debris will be allowed to deposit within the watercourse. • Appropriate dust suppression system to prevent dust and debris from entering the watercourse will be used during the duration of the works. The dust suppression system will consist of electrical tools with continuous supplied water to supress dust. A suitable vacuum system will be put in place on the bridge decking to remove the slurry from the cutting surfaces and ensure none is deposited within the watercourse. • All concrete will be mixed off site, not within 10 m of a non-sensitive watercourse or within 50 m of a sensitive watercourse, and will be brought in as required and poured in place at site. All concrete works will be scheduled during dry weather conditions	Monitoring will be undertaken by the appointed ECoW.



Ref No.	Related to	Location	Mitigation Measure	Monitoring
			only. Only once the concrete has adequately cured, the precast bridge decks will be installed using a crawler crane positioned outside the exclusion zone on the west bank. • Only water and environmentally friendly joint sealants will be used on the bridge. • Riparian vegetation will be left intact where practicable in consultation with the ECoW and will not occur within the boundary of any European site. Protection will be afforded to riparian vegetation by fencing prior to commencement of the works. The natural channel width will be maintained, which will ensure the adequate water depth and velocity for fish passage at all times during the duration of the works. • All construction lighting will be reviewed by the ECoW and will be directed away from watercourses to ensure a dark corridor is maintained. • Following the completion of the works, all material will be removed from site. The false bridge decking will be carefully cleaned, before dismantling, to ensure any residual debris does not deposit within the watercourse.	
MM5	Horizontal Directional Drilling (HDD)	NIS	• A competent and experienced Contractor will be appointed to undertake the HDD works. • The Contractor will prepare a HDD Method Statement which will outline the standard approach for the construction. The Method Statement will include a contingency plan for frac-out and for excessive ground settlement. • The Contractor will undertake the directional drilling in accordance with industry best practice including British Standard EN 16191:2014 Tunnelling machinery, safety requirements and CIRIA C648 '*Control of water pollution from linear construction projects Technical Guidance*' (CIRIA, 2006a). • The contractor will ensure that all personnel working on site are trained in pollution incident control response. A regular review of weather forecasts of heavy rainfall will be carried out. The Contractor will prepare contingency plan for before and after such events. • Weather conditions (e.g. prolonged heavy rainfall) will be considered when planning construction activities to minimise the risk of runoff from site. • There will be no storage of fuels within 30 m of the watercourse. • Provision of exclusion zones and barriers (silt fences) between any excavated material and any surface water features will be installed to prevent sediment washing into the receiving water environment. Silt fences will be installed and the contractor will ensure that silt fences are regularly inspected and maintained during the construction phase. • If dewatering is required as part of the works (e.g., in trenches for underground cabling or in wet areas), water will be treated prior to discharge in line with CIRIA C750 'Groundwater control: design and practice (CIRIA, 2016). • To prevent loss of bentonite or 'frac-out' from occurring, a series of actions will be implemented; the drill fluids operator will monitor drill fluid density, viscosity and solids	Monitoring will be undertaken by the appointed ECoW.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			content on an ongoing basis, to ensure that the fluid does not increase in viscosity, requiring additional pressure to maintain mobility. • In critical cases, viscometers will be used to measure drill fluid gel strength and shear strength. Filtrate will also be measured to calculate the amount of filter cake building up on the internal wall of the bore. Any increases in pump pressure experienced by the drill operator will be investigated immediately to prevent the risk of pressure build up within the annulus. In some circumstances, dependant on the drilling equipment used, the pilot drill borehole assembly will be fitted with a down hole pressure monitor to measure pressure in the annulus between the drill and the bore wall. This will give an early indication of pressure build up in the hole and allow the drill operator to prevent a 'frac-out'. If there is a risk of a 'frac-out' a number of measures will be implemented consisting of: ○ pumping a pill of drilling fluid with a higher density to the risk zone; and ○ circulate and pump loss circulation material (typically cork or manufactured inert polymers) to the risk zone to seal the risk zone, grouting of the risk zone, and, or launch a packer before the risk zone. • The Contractor will implement procedures to maximise the recirculation or reuse of drilling fluid to minimise waste disposal. • Disposal of drilling fluids will be the responsibility of the Contractor to an approved and licenced waste facility. • Monitoring of the drilling operations will be undertaken at all times by the Contractor. The monitoring will include visual inspection of the pits and monitoring of the volume of returns flowing back to the entry pit. The monitoring personnel will be in constant communication with the drilling rig operator and thus will be able to immediately cease drilling if necessary. • Buffer strips of natural uncleared vegetation will be preserved between construction activity and watercourses and will be demarcated by the ECoW. Reception pits will be situated outside of the riparian zone. A buffer zone width for smaller channels (<10 m) of 20 m or greater will be maintained.	
MM6	Disturbance/ displacement of Qualifying Interest Species	NIS	• Pre-construction confirmatory surveys prior to the commencement of any works will be carried out by a competent ecologist to identify any changes in otter activity or the presence of holt/couch locations within the Proposed Project. Otter surveys will be undertaken no more than 10—12 months in advance of the construction works as per the advice in NRA Guidelines for the Treatment of Otters during the Construction of National Road Schemes (NRA, 2008a). • Twilight working hours (i.e., time between dawn and sunrise and dusk and sunset), especially at the clear span bridge locations, will be restricted as far as possible. Otter are crepuscular species and as such disturbance will be reduced by restricting the amount of twilight working hours.	Monitoring will be undertaken by the appointed ECoW.

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			• All construction and operational phase lighting will be reviewed by the ECoW and will be directed away from watercourses to ensure a dark corridor is maintained. • As discussed, mitigation measures to prevent the degradation of water quality is also applicable to prevent the disturbance/displacement of species (e.g., displacement of species due to unfavourable water quality as a result of construction impacts). In the event that a new holt (established within the interim period) is identified within the footprint of the works during the pre-construction confirmatory survey and the following mitigation measures will be applied in accordance with the NRA *Guidelines for the Treatment of Otters during the Construction of National Road Schemes* (NRA, 2008a) as follows: • No wheeled or tracked vehicles (of any kind) will be used within 20 m of active, but non-breeding, otter holts (NRA, 2008a). Light work, such as digging by hand or scrub clearance will also not take place within 15 m of such holts, except under licence. • No works will be undertaken within 150 m of any holts at which breeding females or cubs are present unless the NPWS confirms that the works can proceed subject to additional mitigation measures as agreed with the NPWS. Breeding may take place in any season, so activity at a holt will be determined on a case-by-case basis by the ECoW. • A prohibited working area associated with otter holts will be fenced and appropriate signage erected under guidance of the ECoW. • If holts are found to be inactive prior to construction, exclusion of holts and their subsequent destruction may be carried out during any season under licence with the NPWS. To prevent the reoccupation of holts the entrances will be soft blocked (using vegetation and a light application of soil) for a period of five days (NRA, 2008a). • If holts are found to be active, otters will be evacuated from the holts prior to any closures. Otters with cubs however will not be evacuated until the otters have vacated the holt themselves naturally. Once the otters have left the holt, the entrance will then be soft blocked. In some cases, the installation of one-way gates on the entrances to the holt may be required and a monitoring period of 21 days will be carried out to ensure the otters have left the holt prior to removal (NRA, 2008a). All works will be done under licence with the NPWS.	
MM7	Ecological Clerk of Works (ECoW)	NIS	An ECoW will be appointed. The role of the ECoW is defined by British Standard BS 42020:20131[4] as "*person who has the ecological qualifications, training, skills and relevant experience to undertake appropriate monitoring and to provide specialist advice to "development" site personnel on necessary working practices required to i) safeguard ecological features on site and ii) aid compliance with any consents and relevant wildlife legislation related to the works.*" The requirements of the ECoW role is to be fulfilled by a single individual with support and assistance provided by technical specialists and senior colleagues when required. The ECoW	Monitoring will be undertaken by the appointed ECoW.

[4] BS 42020:2013 is the Biodiversity — Code of practice for planning and development. Published by British Standards Institute (Currently being updated by BSI).

Ref No.	Related to	Location	Mitigation Measure	Monitoring
			(individual or team of individuals) will therefore have appropriate qualifications, training and experience to meet the requirements of the role and in addition, where needed, can access support from senior ecologists within the company with the required qualifications, training and experience. The ECoW will have the power to 'Stop Works' at any time they deem it necessary to do so. The ECoW will be responsible for monitoring compliance with the mitigation measures and construction phase monitoring requirements relating to ecology/biodiversity as set out in the project NIS, EIAR, CEMP and SWMP. The ECoW will have authority over the content of routine reports and will act independently in determining instances of non-compliance with the consents and licenses or any breaches of environmental legislation. The ECoW will also document activities using photographs and log information to registers/logs. The role of the ECoW includes tasks such as, but not limited to, the following: • Pre-construction confirmatory surveys for otter; • Consultation with NPWS, if required; • Monitoring and exclusion of otter holts, if required; • Demarcation of riparian habitats to be maintained; • Review of construction phase lighting plans; • Supervision of works in ecologically sensitive areas as required to ensure compliance with environmental legislation and the requirement of the schedule of works and EIAR; • Preparation of Method Statements for ecological tasks such as those described above; and • Provide a briefing on environmental protection measures and ecological sensitivities of the Proposed Project to all site personnel in advance of commencement of enabling works.	



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Appendix A-XII Collision Risk Model Report

Manogate Ltd

Ballyfasy Wind Farm:

Collision Risk Modelling Report

APPENDIX 7-2

Billy Gardener, Matt Rea

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Glossary

Term	Definition
Avoidance rate	It is acknowledged that birds take avoiding action when flying in the vicinity of turbines, either macro-avoidance (avoidance of an entire wind farm) or micro-avoidance (avoidance of individual turbines). To account for this an 'avoidance rate' is applied, based on guidance, to correct predicted collisions for each species.
Collision Risk Modelling	Collision Risk Modelling (CRM) is the process for predicting avian collisions likely to arise during the operational phase of the development.
Collision Risk Zone	The Collision Risk Zone is the area within 500 m of the turbine layout. A flight which is within this zone (even if only partially) is considered to be at risk of collision.
Potential Collision Height	A flight which is at Potential Collision Height is one which is between the lowest and highest extent of a turbine rotor.
Vantage Point	A location from which Flight Activity Surveys were undertaken to determine flight activity.
Viewshed	The visible area at the lowest rotor swept height of a turbine model within a 2 km, 180° arc from a Vantage Point.

Executive Summary

This Collision Risk Modelling (CRM) Report details the methodology and results for CRM undertaken for the proposed Ballyfasy Wind Farm. CRM has been undertaken following NatureScot (Band, 2024) guidance to predict collisions associated with the operational phase of the development and inform the impact assessment undertaken within the Environmental Impact Assessment Report.

CRM has been undertaken for target species which were present at sufficient levels to allow for robust modelling, using APEM's professional judgement. Species scoped into the CRM were: golden plover, lesser black-backed gull and kestrel.

CRM was undertaken for a best-case and worst-case scenario, based upon the range of turbine parameters provided. CRM was undertaken using the Band (2024) model

For the best-case model, the results generated from this approach predicts one lesser black-backed gull every 0.46 years, one golden plover every 0.02 years, and one kestrel every 0.12 years. Over the operational lifespan of the wind farm, this equates to approximately 191 lesser black-backed gull, 8-9 golden plover, and 49 kestrel.

For the worst-case model, the predicted collision rates are one lesser black-backed gull every 0.66 years, one golden plover every 0.03 years and one kestrel every 0.17 years. Over the operational lifespan of the wind farm, this equates to approximately 278 lesser black-backed gull, 11-12 golden plover and 69-70 kestrel.

1. Introduction

APEM Ltd (APEM) was commissioned by Art Generation Ltd to undertake the Ornithology Environmental Impact Assessment (EIA) for the proposed Ballyfasy Wind Farm (hereafter referred to as 'the Proposed Project'). To support the impact assessment, Collision Risk Modelling (CRM) has been undertaken to determine the predicted collision mortality for Important Ornithological Features (IOFs) during the operational lifespan of the Proposed Project using data collected during Vantage Point Surveys (VPS) undertaken between 2023-2025.

Predicted collisions have been calculated for a 10-turbine layout. Turbine parameters, provided as a range and used for modelling have been supplied to APEM by Tobin.

This report is a Technical Appendix to support the Ornithology Chapter of the EIA Report.

2. Methodology

CRM was undertaken following the latest NatureScot guidance (Band, 2024). VPS used to inform the CRM were undertaken in line with NatureScot (2017) guidance on recommended survey methods for onshore wind farms. CRM has been undertaken for species recorded within the Collision Risk Zone (the CRZ, a 500 m buffer of the turbine layout in line with SNH [2025] guidance) which were present at sufficient levels to allow for robust modelling, using APEM's professional judgement.

Table 2 outlines the target species recorded during VPS within the CRZ and outlines species which have been scoped in or out of CRM.

CRM estimates the number of collisions through a process of six stages:

- Stage A establishes the density of flying birds within the CRZ, and the proportion of birds that are flying at potential collision risk height.
- Stage B estimates the potential number of bird passages through rotors in the relevant season, based on density and the available hours during each season.
- Stage C determines the collision probability during a single bird rotor transit.
- Stage D considers the proportion of time in which the turbines are not in operation.
- Stage E takes into consideration the likely proportion of birds avoiding either the wind farm or its turbines.
- Stage F considers potential uncertainties and an estimate of error in the number of predicted collisions.

Table 1. Summary of Target Species Flights Recorded During VPS within the CRZ

Species	Conservation Status*	Number of flights during Year 1 surveys	Number of flights during Year 2 surveys	No. of birds per flight	Include in CRM?
Golden plover	Ann1, Red	0	14	2-26	**Yes, non-breeding season only – Species recorded occasionally within the CRZ during the non-breeding season, is red listed and is included in Annex I. Species was not recorded during the breeding season.**
Curlew	Red	0	1	1	No – Insufficient records available for a robust assessment of collisions risk. The very low number of flights across the two survey years indicate that collision risk for this species is negligible.
Snipe	Red	0	1	2	No – Insufficient records available for a robust assessment of collisions risk. The very low number of flights across the two survey years indicate that collision risk for this species is negligible.
Black-headed gull	Amber	0	6	1-6	No – Insufficient records available for a robust assessment of collisions risk. The very low number of flights across the two survey years indicate that collision risk for this species is negligible.
Great black-backed gull	Green	1	0	1	No – Insufficient records available for a robust assessment of collisions risk. The very low number of flights across the two survey years indicate that collision risk for this species is negligible.
Lesser black-backed gull	Amber	187	62	1-187	**Yes – Species recorded frequently within the CRZ and is amber listed.**
Hen harrier	Ann 1, Amber	3	4	1-2	No – Insufficient records available for a robust assessment of collisions risk. The very low number of flights across the two survey years indicate that collision risk for this species is negligible.
Kestrel	Red	27	14	1	**Yes – Species recorded frequently within the CRZ and is red listed.**

Merlin	Ann 1, Amber	0	5	1	No – Insufficient records available for a robust assessment of collisions risk. The very low number of flights across the two survey years indicate that collision risk for this species is negligible.
Total		187	76		
* Ann1: listed on Annex I of the Bird's Directive, Red/Amber/Green: Birds of Conservation Concern in IE (Ireland) Classification,					

2.1 Stage A- Flight activity

Stage A estimates the number of flights that may potentially be at risk of turbine collision in the absence of the displacement of birds, birds taking other avoidance actions, or birds being attracted towards the wind farm.

In the case of non-directional flights, there are two key parameters derived from survey observations that are needed in order describe the magnitude of flight activity:

- Areal bird density (D_A); and
- Proportion of birds flying at risk height (Q_{2R})

Areal bird density (D_A) is defined as the number of birds in flight, at any height, at a particular time, per unit area (typically per square kilometre, km^2). To calculate D_A, bird occupancy is converted to bird density (per m^2) by dividing by the area watched from each VP viewshed. The flight activity during VP watches is recorded in bird seconds, a unit that captures both abundance and duration of flight and is particularly appropriate where bird numbers are low:

$$D_A = \frac{b}{(t \times A) birds\ m^2}$$

Where b is the number of target species flight seconds recorded from a VP; t is the duration (in seconds) of all VP watches during either a month, season or year and A is the area of the VP viewshed (km^2).

D_A is calculated for each VP separately, with the figure subsequently averaged. However, where there exists a considerable difference in the time and/or area that is covered by relevant VP surveys the average figure should be weighted appropriately. Thus, the weighting factor used acknowledges that the quantity of data collected in a watch is proportional both to the size of the area observed and the duration of the VP watch:

$$Mean\ density\ D_A = \frac{\sum \frac{b_i \sqrt{t_i \times A_i}}{t_i \times A_i}}{\sum \sqrt{t_i \times A_i}}$$

In the case of conditions where a VP viewshed results in a significant difference in mean density D_A (for example, due to a difference in underlying habitat), the bird density should then either be calculated separately for each individual VP site and then applied to determine the likely collision risk within that area. Alternatively, a turbine-weighted average bird density should be employed instead, i.e. the bird density for each VP should be weighted by the number of turbines present within that viewshed. In this case, the average areal bird density ($D_{average}$) was estimated using the following:

$$D_{average} = \frac{\sum N_i \times D_i}{\sum N_i}$$

Where D_i is the areal bird density within the VP viewshed (i), N_i is the number of turbines to be sited in that VP viewshed; and $D_{average}$ is the average areal bird density.

The definition of **proportion of birds flying at risk height (Q_{2R})** is the proportion of birds present between the lowest and highest points of a rotor, measured relative to the rotor base. In cases where flights are only recorded in the rotor swept height band, Q_{2R} will be 100%.

2.1.1 Daylight hours and nocturnal activity

Bird surveys are generally undertaken diurnally, with recorded levels of flight activity assumed to be representative of flight activity across all daylight hours. Daylight hours depend on the wind farm site's latitude and the time of year. Daylight and night hours per month are provided within the NatureScot CRM spreadsheet when the latitude of a particular site is inputted. The latitude of the wind farm site is 52.38 North

Calculations used in the collision model account for collision risk associated with diurnal and nocturnal flights. Diurnal activity is based on the flight activity recorded for each target species during field surveys while nocturnal flight activity is assumed based on diurnal flight activity, and professional judgement regarding the likely levels of nocturnal activity for each target species.

Levels of nocturnal activity by all target species were estimated, using a one to five scale to approximate nocturnal flight (with a score of one equal to 0% nocturnal activity, two equal to 25% of diurnal activity, three equal to 50% of diurnal activity, four equal to 75% of diurnal activity and five whereby nocturnal activity is equal to diurnal activity, seeTable 3). It should be noted that for truly nocturnal species, this will underestimate nocturnal flight activity, which will be >100% of diurnal activity.

2.2 Stage B- Estimating number of bird flights through rotors

Stage B considers the available figures for bird density (D_A), the proportion of risk height flights (Q_{2R}), the nocturnal activity factor (f_{night}), and the figures for monthly daylight and night hours calculated at **Stage A-** Flight activity**.** In order to estimate the number of birds flying through rotors, the model considers the number of turbines, the turbine rotor radius and the flight speed of the target species. For flight speed, a typical mean flight speed is selected based on standard key literature, acknowledging that flight speed (and thus collision risk) will vary depending on bird behaviour (commuting, migration, foraging etc):

$$Number\ of\ transits = v\left(\frac{D_{average} \times Q_{2R}}{2R}\right) \times (T\pi R2) \times \left(t_{day}\, f_{night} t_{night}\right)$$

Where v is bird speed, relative to the ground (m sec^{-1}), $D_{average}$ is the average areal bird density (Birds m^2), Q_{2R} is the proportion of birds flying at risk height (%), R is the length of the rotor blades, from axis to tip (m), T is the number of turbines, $f_{night}$is the nocturnal activity factor; and t_{day} and t_{night} are daylight and night time hours respectively, across a year.

2.3 Stage C- Probability of collision for a single rotor transit

Stage C utilises information on turbine dimensions and rotor speed (), as well bird biometrics to calculate the collision risk for birds flying through a turbine rotor (). Upwind flights have a greater collision risk than downwind flights, and an assumption is made that the proportion of upwind and downwind flights

The probability of collision during a rotor transit is calculated by assessing collision risk at various positions across the rotor disc, using increments of radial distance from r/R=0.05 out to r/R=1, and angular intervals (ϕ) of 10 degrees. The model calculates the collision probability at each combination of radius and angle, then averages these values across the entire area of the rotor disc to generate the average collision risk for a passage at any given point across the rotor.

The calculation should be carried out using a mean operational turbine speed. Preferably, the mean speed utilised in the calculation should be measured over time using an analysis of available wind data to determine the likely frequency distribution of turbine speeds. However, in cases where this is not available, the speed used should be based on the most likely value as anticipated by the wind farm developer.

Table 2: Turbine data

Symbol	Description	Units	Turbine Models	
			Worst Case	Best Case
B	Number of blades		3	3
-	Hub height	m	98.5	95
R	Rotor radius	m	81.5	74.5
-	Minimum swept height	m	17.0	21.0
-	Maximum swept height	m	180.0	170.0
C	Maximum blade width	m	4.1	4.1
Γ	Average blade pitch*	°	13.0	13.0
Ω	Average rotation speed	rpm	8.3	8.3
-	Average rotational period	s	7.23	7.23

Table 3: Bird data and avoidance rates for target species

Target species	Bird length* (m)	Wingspan* (m)	Flight speed** (m/s)	Avoidance rate***	Breeding season****	Non-breeding season*****	Nocturnal factor
Golden plover	0.275	0.72	17.9	0.998	May to July	August to April	5
Lesser black-backed gull	0.58	1.43	13.4	0.995	April to August	September to March	2
Kestrel	0.34	0.76	10.1	0.95	March to mid-August	Mid-August to February	2
*Species biometrics are taken from Snow *et al*. (1998)							

Target species	Bird length* (m)	Wingspan* (m)	Flight speed** (m/s)	Avoidance rate***	Breeding season****	Non-breeding season*****	Nocturnal factor
**Species flight speeds are taken from Alerstam *et al*. (2007), Bruderer & Bolt (2001) and Provan & Whitfield (2006) ***Species avoidance rates are taken from NatureScot (SNH, 2018), Gittings (2020) and Furness (2019) ****The breeding season for each species is taken from NatureScot guidance (SNH, 2014). The golden plover breeding season has been reduced to account for spring passage activity during April which is more representative of the non-breeding population. All dates are inclusive. *****Non-breeding seasons are the remaining months of the year. The golden plover non-breeding season has been amended to account for spring passage activity during April which is more representative of the non-breeding population.							

2.4 Stage D- Multiplying to yield expected collisions per year

In this stage, the output from Stage B (number of potential transits through rotors) is multiplied by the output of Stage C (collision risk for a single rotor transit) to yield the projected number of bird collisions per month or year.

However, allowance must first be made for the proportion of time that rotors are not operational due to turbine idleness. The non-operational factor (Q_{op}) has been provided by FEI, based on wind modelling. the single transit risk is multiplied by the factor Q_{op} to allow for the proportion of time that the wind turbines are operational. This is before considering avoidance behaviour, which is stage E.

2.5 Stage E- Applying the avoidance rate

The preceding stages of the model operate on the assumption that birds will not undertake any avoidance action in response to the presence of wind turbines. However, it is accepted that birds do take avoidance action (macro, meso or micro avoidance) based on the results of considerable studies and that avoidance differs between species.

The potential collision mortality, for each month and for a year, after avoidance was calculated using a range of assumed avoidance rates of 95%, 98%, 99% and 99.5%, as well as the recommended avoidance rate for each species if this differs from those listed.

2.6 Stage F- Expressing uncertainty

Within the NatureScot (Band, 2024) guidance, it states that within the CRM there are sources of variability or uncertainty, which should be considered when determining the accuracy of predicted collisions. It is acknowledged that there are various sources of potential error which

include inaccuracies when recording flight data, uncertainty over nocturnal flight activity and limitations and assumptions within the collision model.

However, potential error was limited as much as possible through the use of experienced surveyors familiar with the NatureScot (2025) survey guidance, who undertook baseline surveys in accordance with guidance, while the CRM has been undertaken in line with NatureScot (Band, 2024) guidance. Although there is the potential for some error in the predicted collisions, it is considered that this has been minimised as far as possible, and that the results should be considered a best estimate based on current guidance. As it is not possible to quantify the level of uncertainty in the results, this has not been considered further.

3. Collision Risk Modelling Results

All VP locations used during surveys were consistent throughout the two-year survey period. Viewshed analysis was undertaken for each VP, to determine the spatial coverage. This was performed for both the Worst Case and Best Case turbine models. Viewshed analysis was performed using a surface offset equal to the minimum rotor swept height for each proposed turbine model, which mapped visible airspace available to surveyors at the lowest potential collision height.

Spatial coverage of the viewsheds within the 500 m turbine buffer is presented in Table 4.

Table 4. Spatial coverage of VPs

Vantage Point	Viewshed coverage within 500 m of the turbine layout at 17 m (km^2)	Viewshed coverage within 500 m of the turbine layout at 21 m (km^2)
VP1	2.097	2.209
VP2	2.981	3.047
VP3	2.449	2.634
Total of viewshed areas	7.528	7.890
Area within the CRZ which is covered by at least one viewshed	4.672	4.857
Percentage coverage of CRZ by combined viewsheds	88.872 %	92.391 %

3.1 Stage A – Flight Activity

3.1.1 Bird density

VPS were undertaken over two years covering two breeding and two non-breeding seasons between March 2023 to March 2025 from three VPs which covered the turbine locations and a 500 m buffer (the CRZ) in line with NatureScot (2025) guidance. The surveys achieved 88.9 % coverage of the CRZ at a height of 17 m, which is the lowest rotor swept height of the two proposed turbine models.

VP watches were undertaken for a minimum of 36 hours during each breeding and non-breeding season as detailed in Appendix 7-1. All flights of target species were recorded during each watch period, yielding total flying time in bird-seconds throughout the watch. Flying time was divided by the period of the watch (in seconds) and the area watched to give the average density of birds in flight per square kilometre.

The mean density (DA) for each species during the non-breeding and breeding seasons is detailed in **Table 5**.

Table 5. Target species mean bird density

Species	Worst -Case Turbine Model				Best-Case Turbine Model			
	Non-breeding season mean density (birds/km2)	Non-breeding season standard deviation	Breeding season mean density (birds/km2)	Breeding season standard deviation	Non-breeding season mean density (birds/km2)	Non-breeding season standard deviation	Breeding season mean density (birds/km2)	Breeding season standard deviation
Lesser black-backed gull	0.05433	0.09888	0.01423	0.03598	0.04912	0.02849	0.01279	0.01121
Golden plover	0.00259	0.01125	0.00000	0.00000	0.00247	0.00427	0.00000	0.00000
Kestrel	0.00115	0.00199	0.00127	0.00249	0.00118	0.00086	0.00129	0.00101

Table 6. Proportion of observed birds flying at rotor risk height (%Q2R)

Species	Number of birds observed		%Q2R Worst Case		%Q2R Best Case	
	NB	B	NB	B	NB	B
Lesser black-backed gull	1220	312	100.00	100.00	94.84	59.94
Golden plover	141	0	100.00	0.00	98.58	0.00
Kestrel	15	20	100.00	100.00	100.00	90.00

3.1.2 Proportion of flights at risk height

The proportion of observed birds at rotor risk height for each turbine model is shown above in **Table 6**.

The mean density (DA) is given in Table 5 for each target species and was calculated for each period (breeding and non-breeding) during each survey year, in line with NatureScot guidance (NatureScot, 2025).

The watches were divided into sessions of three hours in duration with breaks between sessions to limit observer fatigue, and the sessions spread to include a representative sample of daylight hours. All flights of target species were recorded during each watch period, yielding total flying time in bird-seconds throughout the watch. Flying time was divided by the period of the watch (in seconds) and the area watched to give the average density of birds in flight per square kilometre.

3.2 Stage B – Estimating number of flights through rotors

The output from Stage B is the potential number of bird transits through the rotor swept area, presented seasonally. The total number of bird transits expected through rotors is proportional to the number and cross-sectional area of the rotors, and to the density of birds in the airspace within the CRZ at potential collision height. Total number of transits each month, for each species, is detailed in Table 7 below.

Table 7. Potential number of bird transits through rotors

Species	Model	Number of Transits												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Lesser black-backed gull	Best Case	3395.270	2944.075	3091.414	467.038	456.864	428.356	448.698	471.019	2917.074	3188.716	3239.438	3436.996	24484.957
	Worst Case	4490.754	3893.980	4088.859	977.425	956.133	896.472	939.043	985.756	3858.269	4217.555	4284.642	4545.944	34134.832
Golden plover	Best Case	491.610	411.573	411.169	0.000	0.000	0.000	0.000	346.099	378.151	436.928	463.493	502.657	3441.680
	Worst Case	625.524	523.684	523.170	0.000	0.000	0.000	0.000	440.375	481.159	555.946	589.747	639.579	4379.185
Kestrel	Best Case	57.166	49.569	51.535	47.037	46.012	43.141	45.190	71.393	49.115	53.688	54.542	57.869	626.257
	Worst Case	71.706	62.177	71.825	65.556	64.128	60.126	62.982	96.164	61.607	67.344	68.415	72.587	824.618

3.3 Stage C – Probability of Collision for a single rotor transit

Data relating to the likelihood of a bird being hit when flying through the rotor is derived from the NatureScot CRM spreadsheet. The collision probability for each species and turbine model is detailed in Table 8.

Table 8. Probability of collision for a single rotor transit of each turbine model

Species	Probability of Collision (%)	
	Best Case	Worst Case
Lesser black-backed gull	5.54%	5.82%
Golden plover	4.13%	4.28%
Kestrel	4.88%	5.20%

3.4 Stage D – Multiplying to yield expected collisions per year

Following the above steps, the number of bird transits per year through the rotors can be combined with the probability of a bird being hit when flying through the rotor to give a likely collision rate per month and per year (assuming no avoidance).

This stage considers the proportion of time that turbines are likely to be operational. The 85% default operational time is considered industry standard, originally stemming from guidance by the British Wind Energy Association (BWEA), now known as Renewable UK and is a widely used assumption in CRM.

The collision rate for each species, for each turbine model, before accounting for avoidance is detailed in Table 9.

Table 9. Predicted collisions before avoidance rate

Species	Model	Number of collisions before avoidance												
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Lesser black-backed gull	Best Case	159.96	138.70	145.64	22.00	21.52	20.18	21.14	22.19	137.43	150.22	152.61	161.92	1153.52
	Worst Case	222.25	192.72	202.36	48.37	47.32	44.37	46.47	48.79	190.95	208.73	212.05	224.99	1689.38
Golden plover	Best Case	17.26	14.45	14.44	0.00	0.00	0.00	0.00	12.15	13.28	15.34	16.27	17.65	120.83
	Worst Case	22.74	19.04	19.02	0.00	0.00	0.00	0.00	16.01	17.50	20.21	21.44	23.26	159.23
Kestrel	Best Case	2.37	2.06	2.14	1.95	1.91	1.79	1.87	2.96	2.04	2.23	2.26	2.40	25.98
	Worst Case	3.17	2.75	3.18	2.90	2.84	2.66	2.78	4.25	2.72	2.98	3.02	3.21	36.46

3.5 Stage E- Applying the avoidance rate

There are a range of guidance documents which propose species-specific avoidance rates to use in CRM. Predicted collisions have been calculated for avoidance rates of 95%, 98%, 99%, and 99.5% during the breeding and non-breeding seasons. The avoidance rates recommended by NatureScot (2018) and Furness (2019) (see Table 10 and Table 11) were applied to estimate the number of bird collisions per annum for each proposed turbine model.

Table 10. Predicted collisions per annum considering 95%, 98%, 99% and 99.5% avoidance rate

Species	Model	Predicted Collisions – 95% avoidance			Predicted Collisions – 98% avoidance			Predicted Collisions – 99% avoidance			Predicted Collisions – 99.5% avoidance		
		B	NB	Year	B	NB	Year	B	NB	Year	B	NB	Year
Lesser black-backed gull	Best Case	5.35	52.32	57.68	2.14	20.93	23.07	1.07	10.46	11.54	0.54	5.23	5.77
	Worst Case	11.766	72.703	84.469	4.706	29.081	33.788	2.353	14.541	16.894	1.18	7.27	8.45
Golden plover	Best Case	0.00	6.04	6.04	0.00	2.42	2.42	0.00	1.21	1.21	0.00	0.60	0.60
	Worst Case	0.000	7.961	7.961	0.000	3.185	3.185	0.000	1.592	1.592	0.00	0.80	0.80
Kestrel	Best Case	0.56	0.74	1.30	0.22	0.30	0.52	0.11	0.15	0.26	0.06	0.07	0.13
	Worst Case	0.824	0.999	1.823	0.330	0.400	0.729	0.165	0.200	0.365	0.08	0.10	0.18

Table 11. Predicted collisions considering NatureScot avoidance rates

Species	Model	Predicted collisions per breeding season*	Predicted collisions per non-breeding season	Predicted annual collisions**	Predicted years per collision	Predicted collisions during Proposed Development operational lifespan
Lesser black-backed gull	Best Case	0.535	5.232	5.768	0.48	201.866
	Worst Case	1.177	7.270	8.447	0.70	295.642
Golden plover*	Best Case	0.000	2.417	2.417	0.02	8.458
	Worst Case	0.000	3.185	3.185	0.03	11.146
Kestrel	Best Case	0.557	0.742	1.299	0.11	45.458
	Worst Case	0.824	0.999	1.823	0.15	63.804
*An avoidance rate of 0.998% was used for golden plover, as detailed in Gittings (2020)						

4. Conclusion

The results generated by running NatureScot's recommended approach for CRM moderate levels of predicted collisions for target species; lesser black-backed gull, golden plover and kestrel. Turbine parameters were provided as a range and therefore two turbine models were used, a best-case and worst-case model.

Based on the best-case model, the predicted collision rates are 5.77 lesser black-backed gulls annually, 0.5 during the breeding season and 5.23 during the non-breeding season. 0.60 golden plover annually, all during the non-breeding season. 0.14 kestrel annually, 0.06 during the breeding season and 0.07 during the non-breeding season. Over the operational lifespan of the wind farm, this equates to approximately 202 lesser black-backed gull, 8-9 golden plover, and 45 kestrel.

Based on the worst-case model, the predicted collision rates are 8.45 lesser black-backed gull annually, 1.18 during the breeding season and 7.27 during the non-breeding season. 0.80 golden plover annually, all during the non-breeding season. 0.18 kestrel annually, 0.08 during the breeding season and 0.10 during the non-breeding season. Over the operational lifespan of the wind farm, this equates to approximately 296 lesser black-backed gull, 11 golden plover and 64 kestrel.

It is important to note that, as is always the case with a modelled approach, the collision risk model outputs are only considered to be indicative of the number of fatalities resulting from the Proposed Project and should be considered in conjunction with other impacts. For example, the outputs from the model do not take account of potential displacement of birds from the wind farm site, which would reduce collision risk. In addition, due to the VPS methodology, the predicted collisions are likely to be an overestimate.

The height bands selected at the commencement of surveys were not aligned with the final turbine specifications, resulting in some discrepancies in how bird flight heights were categorised in the collision risk models, therefore some assumptions were required. Specifically, if any bird(s) were flying above the rotor tip height, these would be included in both the best-case and worst-case models. Similarly, if any flight(s) were below the blade tip clearance, these were incorporated into the worst-case scenario. For example, a bird flight recorded at 200 m would be assigned to the >120 m height band and consequently included in both models, despite being above the actual rotor swept zone. As a result, it is likely that a proportion of the flight seconds and individuals considered to be at collision height were actually flying above or below rotor swept height. This suggests that the predicted collision rates are likely overestimated in both models.

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Appendix 1 – Figures

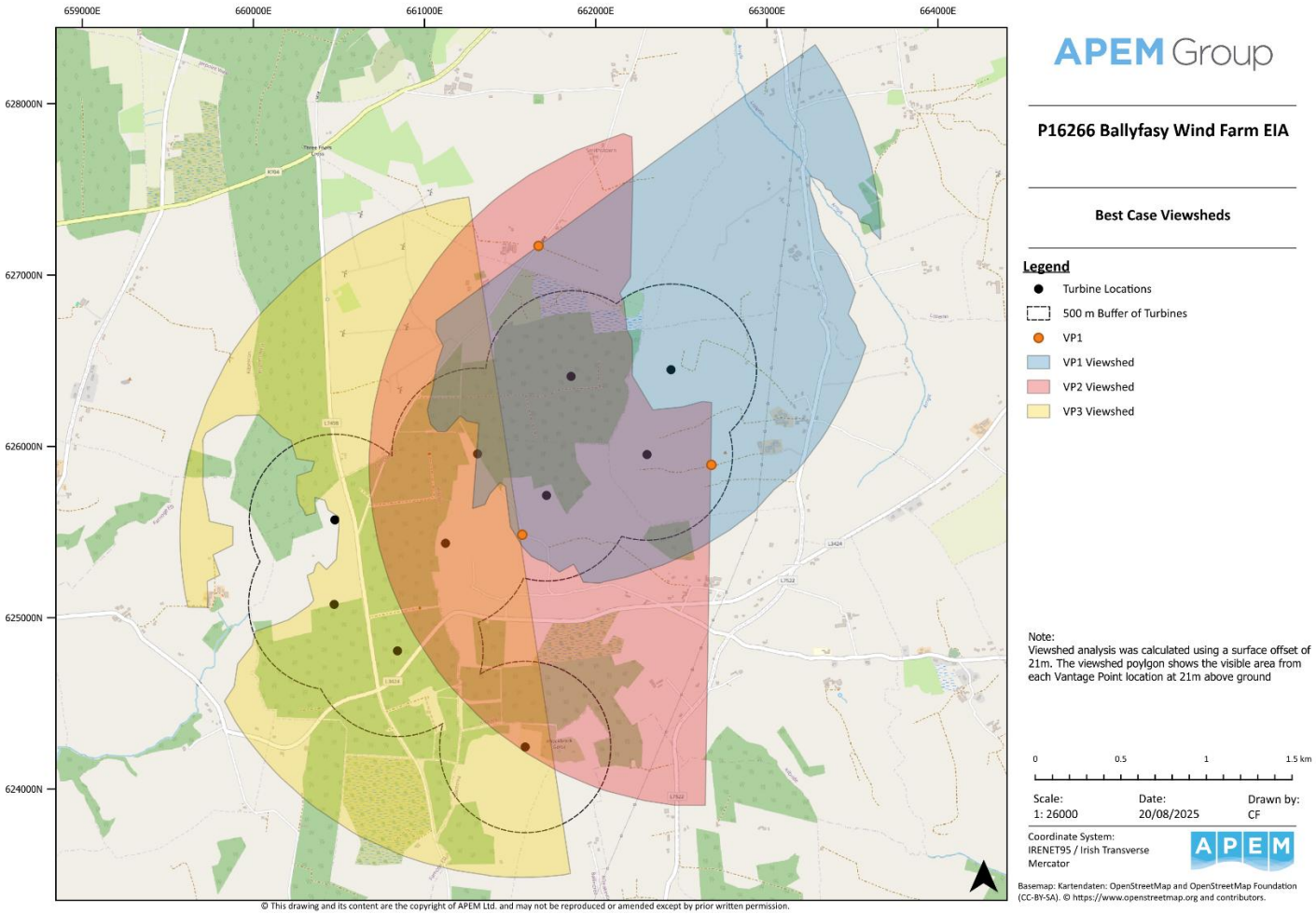


Figure 1. Vantage Points and Viewsheds for Best-Case Model

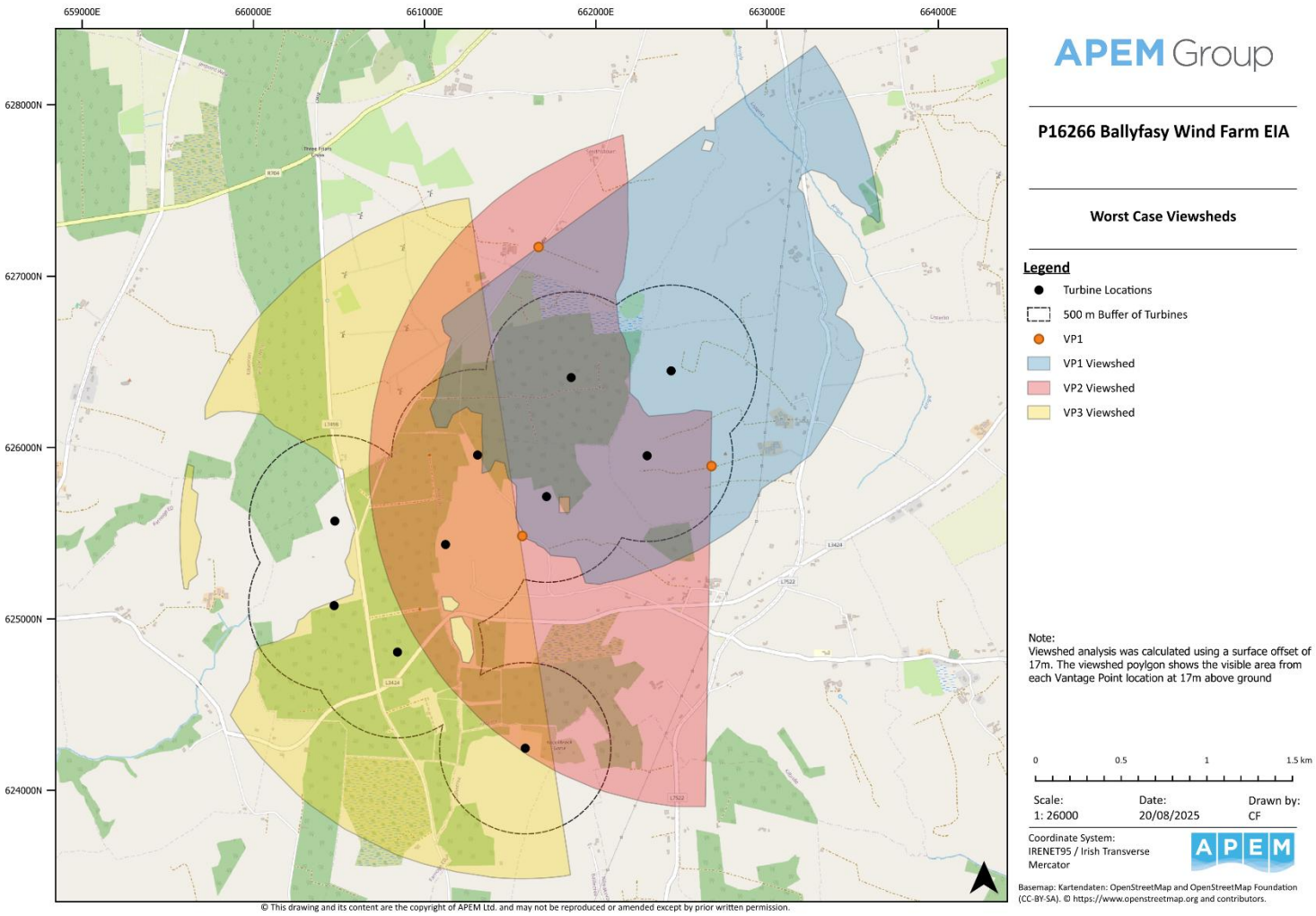


Figure 2. Vantage Points and Viewsheds for Worst-Case Model

Appendix A-XIII PLANNING APPLICATIONS FOR IN-COMBINATION ASSESSMENT

Granted and Undecided Applications Within C.10km of the Subject Site January 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 no. wind turbines and ancillary works.	Castlebanny, Co. Kilkenny	26/09/2022
Kilkenny County Council	2360360	Permission for development situated in the townland of Ballyfasy Upper, Co. Kilkenny. Permission is sought for the continued use of an existing, temporary lattice type meteorological mast, 80m in height.	Ballyfasy Upper , Ballyfasy , Co. Kilkenny	02/10/2023
Kilkenny County Council	13353	The development will consist of the erection of 1. no.500 kw wind turbine (hub height 65.00m), and the construction of a 25.00 sq.m electrical sub-station, site access road, and all ancillary works.	Ballinclare , Glenmore , Co. Kilkenny	12/09/2013
Kilkenny County Council	2560391	a 10 Year Planning Permission for a solar farm with a total area of circa 189 hectares in the townlands of Atateemore or Blackneys, Ballyhobuck, Ballyrahan, Carriganurra, Charlestown, Davidstown, Drumdowney Lower, Drumdowney Upper, Gorteens, Grogan, Kilmurry, Nicholastown, Rathpatrick, Scartnamoe, Tinvaucoosh and Treanaree in County Kilkenny. The solar farm will consist of solar panels on ground mounted frames, 27 no. single storey electrical inverter/transformer stations, 5 no. single storey spare parts containers, 3 no. Ring Main Units, 5 no. weather stations, underground electrical ducting and cabling within the development site, private lands and within the L3429, L7523, L7563, L7469, L3407, L3414, L34144, L7466, L3406, L7483, L3415, N25 and N29 public roads to connect solar farm field parcels, security fencing, CCTV, access tracks, 7 no. watercourse/drain deck crossings and 4 no. horizontal directional drill crossings (under the N25 and N29 public roads and the Luffany River), temporary construction compounds, landscaping and all associated ancillary development and drainage works. Construction and operational access will be via 7 no. existing entrances from the L3429, L7469, L7466, L4783 and L34142 which will be subject to entrance upgrade works. Separate construction phase access options are proposed for Parcel 4 via Port of Waterford and the L4783. The operational lifespan of the solar farm will be 40 years and planning permission is requested for this duration. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application	In the townlands of Atateemore or Blackneys Bal	Live Case
Kilkenny County Council	Acp Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Electrical and Water Services				
Kilkenny County Council	1310	Permission to construct an extension to existing 20kV electrical substation building including installation of a septic tank with associated percolation area and the provision of a borehole well water supply.	Ballymartin , Mullinavat , Co. Kilkenny	07/03/2013
Kilkenny County Council	23145	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.	Raheen , Rosbercon , Co. Kilkenny	08/12/2023
Wexford County Council	20181228	Permission for the development at the existing great island to kilkenny 110kV overhead line which is approximately 49 kilometres long. Approximately 2.6km of the existing circuit is located within the functional area of Wexford county council with approximately 46.4km located within County Kilkenny. The uprate of the existing circuit within County Wexford will be undertaken within the townland of great island, between structure em1 at great island substation and structure int15 near the administrative border between counties Wexford and Kilkenny. A natura impact statement (nis) forms part of this application.	Greatisland, Kilmokea	01/02/2019
Wexford County Council	20151282	Permission for renewal works to the existing 38kV overhead line spanning the river barrow to the north of O Hanrahan Bridge in New Ross, County Wexford. In total five structures will be replaced as part of the proposed works. The overhead line falls within the administrative areas of County Kilkenny and County Wexford.	Rosbercon, Annefield, Ardcross & Castlemoyle, N	24/02/2016
Kilkenny County Council	15825	for renewal works to the existing 38kV overhead line spanning the River Barrow to the north of O'Hanrahan Bridge in New Ross, County Wexford.	New Ross ,	25/02/2016
Wexford County Council	20181585	Planning permission for a 63.3sqm single storey extension to the existing electr	Butlersland, New Ross Rural	12/02/2019
Wexford County Council	20240650	Permission for the development of a long duration energy storage facility	Knockmullin, New Ross Rural	23/10/2024
Kilkenny County Council	18573	for develop at existing Grt Isl-Kk 110kV Overhead Line, approx 49kms long. Approx 46.4km of existing circuit located within functional area of CoKk with approx 2.6km located within Co Wex. The uprate works within CoKk will be undertaken between structure INT1.	Great Island to , Kilkenny Overhead Line	08/03/2019

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
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 Statement (NIS) has been prepared and will be submitted with the application.	Marshmeadows, New Ross Rural	30/08/2023
Wexford County Council	ACP Ref. 318103	Development of a new electricity circuit. A Natura Impact Statement (NIS) was submitted with the application.	New Ross, Co. Wexford	13/11/2024
Wexford County Council	ACP Ref. 308906	Proposed development will form part of the Greenlink Interconnector and will consist of the development of a new converter station, tail station, MV substation and 23km of high voltage direct current (JVDC) electricity cables, 420m of high voltage alternating current (HVAC) cables, 23.42km of fibre optic cable and all associated site works with an overall proposed development site area of 83.8ha.	Ramstown in Co. Wexford	23/06/2021
Kilkenny County Council	13444	to relocate a borehole well for water supply previously permitted under Pl. Ref.: 13/10.	Ballymartin , Mullinavat , Co. Kilkenny	19/11/2013
Kilkenny County Council	16200	to construct a new water reservoir; perimeter fencing and all ancillary siteworks.	Flemingstown , Glenmore , Co. Kilkenny	30/05/2016
Kilkenny County Council	19221	for drilling of a temporary trial well and carrying out associated works on a site adjacent to Glenmore Water Treatment Plant. A Natura Impact Statement (NIS) will be submitted to the Planning Authority with the application.	Glenmore Water Treatment Plant , Flemingstown	29/05/2019
Kilkenny County Council	22513	for the change of use of land to extend the service station carpark to enable the installation of a modular substation and ancillary site development works.	Inver Service Station , Townland of Rathpatrick ,	27/09/2022
Kilkenny County Council	ACP Ref. 245770	Upgrade Inistioge water supply scheme watermain from Grennan to reservoir Ballygub, Inistioge at Grennan Thomastown.	Ballyduff, Kilmacshane, Kilcross and Ballygub Co.	24/03/2016
Wexford County Council	20250452	Permission for a proposed single storey ESB substation and switch room building and all associated site works.	Stokestown, Oldcourt	06/06/2025
Kilkenny County Council	2560074	for the construction of a new wastewater treatment system and a proposed change to the site boundary situated	Rathpatrick , Slieverue , Co. Kilkenny	23/06/2025
Kilkenny County Council	Acp Ref. 315856	27 metre telecommunications support structure and associated site works.	Ballyrobin, Ferrybank, Co. Kilkenny	07/03/2024
Wexford County Council	Acp Ref. 318103	Development of a new electricity circuit. A Natura Impact Statement (NIS) was submitted with the application.	New Ross, Co. Wexford	13/11/2024
Kilkenny County Council	Acp Ref. 245770	Upgrade Inistioge water supply scheme watermain from Grennan to reservoir Ballygub, Inistioge at Grennan Thomastown.	Ballyduff, Kilmacshane, Kilcross and Ballygub Co.	24/03/2016
Roadworks				
Kilkenny County Council	1681	to construct a farm/forestry roadway exiting onto the R704 road and all associated site works.	Ballynooney West , Mullinavat , Co. Kilkenny	12/04/2016
Kilkenny County Council	LAC1608	The main features of the existing n25/r733 priority junction to a conventional roundabout layout. The widening of footpaths on the immediate approach roads to the proposed roundabout. The provision of ancillary works including road drainage, public lighting, the installation of roadmarking, road studs and signage. Landscaping works.	N25/R733 Oaklands Roundabout, New Ross	12/12/2016
Kilkenny County Council	LAC1611	The development of the disused railway line, railway bridge and railway tunnel extending from Rosbercon, New Ross to Mountelliot as a cycle and pedestrian route. The route will ultimately form part of the planned national greenway network link, connecting Waterford, Wexford, Kilkenny And Carlow to Dublin and beyond. This section also forms part of the looped walk returning to new ross along the Craywell road/footpath. The work will include the following: the clearance of vegetation on the rail line corridor, retaining boundary hedgerows and boundary vegetation; the laying of a 3 metre wide bituminous surface on a crushed stone base to form the cycle and footpath track; repair and upgrade of existing drains; the upgrade and repair of existing bridges so as to accommodate the cycle/pedestrian route; the installation of barriers for the safety of greenway users; stock proof fencing where required; provision of agricultural crossings and security fencing; screen fencing and/or screen planting.	New Ross - Redbridge - Mountelliot Greenway	13/03/2017
Kilkenny County Council	17456	Permission for the development of a 24 hour opening Motorway Service Area.	At R704 , Garrandarragh , Mullinavat	13/11/2017
Kilkenny County Council	17655	to construct new vehicular entrance into forestry land and associated site works.	Farnoge East , Mullinavat , Co. Kilkenny	14/06/2018
Kilkenny County Council	18226	to construct a new entrance to my lands for use by forestry and all associated site works.	Ballinlammy , Glenmore , Co Kilkenny	28/05/2018
Kilkenny County Council	2360198	construction of a livestock underpass, effluent holding tank and all associated site works.	Charlefield Tinnaslatty , The Rower , Co. Kilkenny	13/11/2023
Kilkenny County Council	14390	to construct a cattle underpass under the L8259 public road and all associated site works.	Knockmoylan , Mullinavat , Co. Kilkenny	15/01/2015
Kilkenny County Council	LAC1502	Realignment of collapsed section of local tertiary road l40274.	Ballykelly, New Ross	27/04/2015
Kilkenny County Council	16316	for a new forestry access road to service the existing forestry lands and all associated works.	Ballynooney , Mullinavat , Co. Kilkenny	11/01/2017

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	1775	for the construction of a new entrance from public roadway onto forestry lands, to comprise the provision of splayed access, clear visibility sightlines, associated setting back of adjacent roadside boundaries, provision of associated surface water drainage, fences, finished hardcored structure to access area, closing of existing entrances and all associated siteworks.	Ballintlea , Mullinavat , Co. Kilkenny	06/04/2017
Kilkenny County Council	17664	for the construction of a new entrance from public roadway onto forestry lands to comprise the provision of splayed access, clear visibility sightlines, associated setting back of adjacent roadside boundaries, provision of associated surface water drainage, fences, finished hardcored structure to access area, and all associated siteworks.	Bishopmountain , Mullinavat , Co. Kilkenny	30/11/2017
Kilkenny County Council	ACP Ref. 310085	Whether the selective felling and clearing of trees and construction of a new road access corridor to and from the public road within a forest plantation for purposes other than for forestry, and the development of access road within a forest plantation.	Glenpipe, Tullogher, Co. Kilkenny.	31/08/2021
Kilkenny County Council	18287	for a new forestry roadway & entrance and all ancillary works.	Ballyfasy Upper , Glenmore , Co Kilkenny	23/07/2018
Kilkenny County Council	19705	for the construction of a road underpass and associated site works for agricultural purposes.	Brownstown , New Ross , Co. Kilkenny	12/08/2020
Kilkenny County Council	22452	for the construction of a Livestock Underpass beneath the public road between the crossroads and existing farmyard alongside all associated site works.	Grogan , Glenmore , Co. Kilkenny	22/11/2022
Kilkenny County Council	22725	for the construction of a livestock underpass under the L-3421-30 local road, soiled water tank and ancillary works.	Ballykenna , Tullogher , Co. Kilkenny	30/06/2023
Kilkenny County Council	1895	for development at a site. The development will consist of the widening of an existing entrance connecting to the public road (to form a bellmouth entrance), to facilitate occasional access to an existing forestry plantation, and all ancillary site deve	Ballymartin , Mullinavat , Co Kilkenny	10/05/2018
Kilkenny County Council	2560074	for the construction of a new wastewater treatment system and a proposed change to the site boundary situated	APPLICATION FINALISED	23/06/2025
Industrial				
Kilkenny County Council	15395	for the proposed erection of one number industrial/warehouse unit, external signage and all associated site development works.	Raheen , New Ross , Co. Kilkenny	14/03/2016
Wexford County Council	20120391	Extend the existing boiler flue in height by 10 metres and construct an additional flue adjacent to same for the purpose of servicing a second boiler unit.	Marshmeadows, New Ross Rural	25/10/2017
Kilkenny County Council	14533	for Full Authorised Treatment Facility (ATF) status and storage of baled municipal waste and associated site works at an existing waste metal processing and storage facility.	Raheen , Rosbercon , New Ross	16/11/2015
Kilkenny County Council	14541	for development at a site of circa 8.27ha. The site comprises an existing coal processing and bagging facility where coal is imported primarily by ship for processing and distribution throughout Ireland.	Raheen and Annaghs , New Ross , Co. Kilkenny	23/06/2015
Wexford County Council	20150325	Permission for development at ida business park, butlersland, new ross, co. Wexford.	Butlersland, New Ross Rural	03/06/2015
Kilkenny County Council	15366	is sought within part of an existing quarry for a C&D recycling facility for the recycling of construction and demolition waste and for the importation and recovery of non-hazardous soils, subsoil and other similar material.	Catsrock & Rathglish Townslands , Glenmore , Co	27/06/2016
Wexford County Council	20160449	A construction and demolition (c&d) recycling facility where certain classes of construction and demolition waste (concrete, stone, block, brick, soils, etc) are transported to site and periodically crushed, screened and stockpiled using mobile plant to produce a reusable construction / domestic / agricultural product, placement of landscaping and all associated site works. A natura impact statement has been submitted with the planning application.	Marshmeadows, New Ross Rural	20/07/2016
Kilkenny County Council	16399	for the construction of an industrial building over an existing dry dock, concrete aprons and associated works.	Raheen , Rosbercon , Co. Kilkenny	11/01/2017
Wexford County Council	20170549	Permission for change of use of former childrens play centre to industrial dry storage use and retention of alterations to front facade and all associated site works (previous planning registration no: 20033181) at units 13 & 14 Woodbine Business Park, Hewitsland, New Ross, Co. Wexford.	Hewitsland, New Ross Rural	23/06/2017
Wexford County Council	17788	to demolish all buildings on the Albatros factory site. Building materials will be segregated. Steel frames will be removed from site and recycled. Concrete materials will be crushed and retained on site.	Raheen , Rosbercon , New Ross	19/02/2018
Kilkenny County Council	20181399	Permission for retention of two (2 no.) Pay-to-use waste compaction units at Knockavilla service station, Knockavilla, New Ross, co. Wexford. This application relates to development which requires a waste licence.	Knockavilla, New Ross Rural	05/12/2018
Kilkenny County Council	20127	for the importation of soil & stone (LOW Code 17 05 04) for the raising of an agricultural field/ restoration of a disused quarry in order to improve the agricultural output of the field/disused quarry.	Kiltorcan , Ballyhale , Co. Kilkenny	25/03/2021
Kilkenny County Council	22264	for 1. a mobile crushing plant 2. A reduction in size of the Compound area & parking areas as was granted under planning permission 20/485 & all ancillary works.	Ballymountain , Slieverue , Co Kilkenny	05/01/2023
Wexford County Council	1313	for the material change of use from temporary storage only of ferrous and non ferrous metals to processing (shearing and sorting of metals) and storage of metals and hazardous end of life vehicles (maximum of 1 day storage) prior to removal off site.	Raheen , Rosbercon , New Ross	01/10/2013
Wexford County Council	20180348	Permission for development consisting of the demolition and removal of decommissioned tanks, pipework, loading stand and all associated fixtures and fittings. The proposed demolition works are not to facilitate the development of a facility that would require environment impact assessment in the future.	Marshmeadows, New Ross Rural, Wexford.	10/05/2018
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 at marshmeadows, new ross, co. Wexford.	Marshmeadows, New Ross Rural, Wexford	27/04/2020
Kilkenny County Council	ACP Ref. 246963	Permission for a recycling facility for the recycling of construction and demolition waste and for the importation and recovery of non-hazardous soils within part of the existing quarry.	Catsrock and Rathglish Townslands, Glenmore, C	02/03/2017

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	ACP Ref. 315686	Mobile crushing plant and a reduction in size of the Compound area & parking areas as was granted under planning permission 20/485.	Ballymountain, Slieverue, Co Kilkenny.	16/04/2024
Kilkenny County Council	ACP Ref. 247592	Permission/retention permission is sought for retention of an existing quarry and extension to the quarry with a proposed extraction area of .80ha and all associated site works.	Castlegannon, Ballyhale, County Kilkenny.	03/04/2017
Kilkenny County Council	1641	for development. The development will consist of and permission/retention permission is sought for: retention of an existing quarry with an extraction area of approximately 1.20 ha. A lateral extension to the quarry with a proposed extraction area of ap	Castlegannon , Ballyhale , Co. Kilkenny	03/04/2017
Kilkenny County Council	16700	for development. The development will consist of continuation of quarrying activities within the red line application area of 62.04 ha to include the extension of the existing excavation by an additional 2 x 15m high benches from the current floor level	Aglish North , Granny , Kilmacow	02/05/2017
Kilkenny County Council	2360426	for a 7-year planning permission for 3 No Bulk Stores, a marshalling yard and site works including earthworks, road works, entrance, gates and fencing, concrete paving, water services, drainage works, site lighting and landscaping. The stores will be us	GORTEENS , SLIEVERUE , CO KILKENNY	18/10/2024
Wexford County Council	20141038	ERECTION OF A CIRCA 2400 M2 INDUSTRIAL UNIT AND ASSOCIATED SITE WORKS	BUTLERSLAND, NEW ROSS RURAL	17/04/2020
Kilkenny County Council	2460100 (ACP Ref 321806)	for the extension of Kilmacow Quarry at Aglish North, Granny, Kilmacow, County Kilkenny, authorised via planning reference 16/700, to adjoining agricultural lands to the east with known quality reserves of aggregates. The extension will cover an area of	Kilmacow , Granny Aglish North , Kilkenny	26/09/2025
Kilkenny County Council	2460103 (ACP Ref. 321962)	for development on lands with a site area of approximately 11.57ha located at Gorteens, Co. Kilkenny. The development will consist of the construction of an integrated plasterboard manufacturing facility, incorporating a production plant with access fro	Gorteens , Slieverue , Co. Kilkenny	01/08/2025
Wexford County Council	20240934	Permission for (1) the construction of 3 no. warehouses providing a total	Portersland, New Ross Rural	21/10/2024
Wexford County Council	20231571	Permission for the construction of a warehouse storage building extension to sid	Marshmeadows, New Ross Rural	13/12/2024
Kilkenny County Council	2560233	constructing 2 no. industrial warehouse blocks for bulk storage, with Block A housing 4 no. single storey storage units (floor area - 3,488.4m2) and Block B housing 4 no. single storey units (floor area - 8446.2m2), new weighbridge and cabin, new internal access roads, retaining walls and boundary fencing and all ancillary works	Belview Port , Gorteens , Co. Kilkenny	25/07/2025
Kilkenny County Council	Acp Ref. 315686	Mobile crushing plant and a reduction in size of the Compound area & parking areas as was granted under planning permission 20/485.	Ballymountain, Slieverue, Co Kilkenny.	26/03/2024
Kilkenny County Council	Acp Ref. 321806	Extension of Kilmacow Quarry authorised via planning reference 16/700. The application is accompanied by an Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS).	Aglish North, Granny, Kilmacow, Co. Kilkenny	26/09/2025
Kilkenny County Council	Acp Ref. 246963	Permission for a recycling facility for the recycling of construction and demolition waste and for the importation and recovery of non-hazardous soils within part of the existing quarry	Catsrock and Rathglish Townslands, Glenmore, C	02/03/2017
Kilkenny County Council	Acp Ref. 247592	Permission/retention permission is sought for retention of an existing quarry and extension to the quarry with a proposed extraction area of .80ha and all associated site works.	Castlegannon, Ballyhale, County Kilkenny.	03/04/2017
Residential				
Wexford County Council	20181348	Planning permission for the proposed erection of no. 9 fully serviced town houses.	New Ross, New Ross Urban	03/05/2019
Kilkenny County Council	19666	to construct a new short stay / holiday camping park consisting of 11 no. glamping pods, new bore well, new sewerage treatment system / percolation area and parking area, including all additional site works	Kiltorcan , Ballyhale , Co. Kilkenny	04/02/2020
Kilkenny County Council	ACP Ref. 309918	Construction of 6 dwellings as an extension to partially completed housing development.	Castlehyde Park , Millbanks , New Ross, Co Kilkenny	21/10/2022
Wexford County Council	20200844	Construction of 48 residential dwellings.	Healysland, New Ross Rural, Co. Wexford.	11/09/2020
Kilkenny County Council	ACP Ref. 306289	Housing Development of 25 houses.	Dangan, Kilmacow, Co. Kilkenny	08/12/2020
Wexford County Council	20160083	PERMISSION FOR THE ERECTION OF 5 NO DWELLING HOUSES, BOUNDARY WALLS AND ASSOCIATE WORKS	NEW ROSS, NEW ROSS URBAN	26/04/2016
Kilkenny County Council	19731	This development will consist of the construction of 4 no. 1 bedroom single storey dwelling houses, 15 no. 2 bedroom two storey dwelling houses, 6 no. 3 bedroom two storey dwelling houses, proposed entrance and access road and all associated ancillary si	Dangan , Kilmacow , Co Kilkenny	08/12/2020
Kilkenny County Council	19160	A) Outline Planning Permission for 3 no. houses on proposed serviced sites B) Planning Permission for 5 No. detached 2 storey houses and all associated site development works including internal roads, new site entrance, connections to existing sewer and	Dangan , Kilmacow , Co Kilkenny	21/08/2019
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 h	Millbanks , New Ross , Co Kilkenny	12/08/2025
Kilkenny County Council	17315	for development at this site which will consist of construction of 12 No. 2 storey, 2 bedroom semi-detached dwellings, access road, car parking, closure of existing entrance onto public road (N25) and all associated site works	Belmount , Ferrybank , Co. Kilkenny	23/02/2018
Kilkenny County Council	17658	for demolition of 3 No. existing out buildings and the proposed erection of 11 No. dwellings consisting of 3 No. two storey 3 bed end terraced dwellings, 4 No. two storey 2 bed mid-terraced dwellings, 2 No-two storey 3 bed semi-detached dwellings, 1 No t	Lower Kilmacow , Kilmacow , Co. Kilkenny	14/11/2018

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	20413	for the erection of 6 no. 2 storey semi-detached dwellings as an extension to existing partially completed housing development, all associated site development works including storm attenuation tank and alterations to the existing site entrance from that	Castlehyde Park , Millbanks , New Ross	21/10/2022
Kilkenny County Council	2360323	for the proposed erection of 4 number fully serviced 2 storey detached dwellings, 4 number detached single storey garages, 2 number proposed vehicular and pedestrian entrances, boundary treatments to include removal of existing stone wall to front of sit	Milepost , Slieverue , Co. Kilkenny	13/05/2024
Wexford County Council	20220880	Permission for the construction of 48 No. dwellings, comprising	Hewitsland, New Ross Rural	11/01/2023
Wexford County Council	20230644	Permission is sought for the construction of 42 no residential dwellings	Healysland, New Ross Rural	18/12/2023
Kilkenny County Council	21574	to carry out the site development works for five residential sites (namely Chesnut Cresent_Phase 1), together with installation of all necessary services, including connection to and from existing services on The Beeches housing site (planning Ref 05/217	The Beeches , Mount Sion , Ballyrobin Ferrybank	30/12/2021
Kilkenny County Council	23117	for the construction of 35 no. residential units comprising the following: 1 no. 2 storey detached Duplex unit, comprising of 2 no. 1 bed units Type E2 & 2 no. 2 bed units Type E1 on ground floor and 2 no. 1 bed units Type F2 & 2 no. 2 bed units Type F	Rockshire Road , Ballyrobin , Ferrybank	23/12/2024
Wexford County Council	20230672	Permission to construct 2 no. one-bedroomed apartments, 6 no. two-bedroomed	New Ross, New Ross Urban	25/10/2023
Kilkenny County Council	ACP Ref. 318813	8 duplex and 27 houses with associated site works.	Rockshire Road, Ballyrobin, Ferrybank, Co. Kilkenny	23/12/2024
Kilkenny County Council	2460364 (ACP Ref. 321555)	Construction of 15 houses with all associated site works.	Dangan, Kilmacow, Co. Kilkenny	Undecided
Wexford County Council	20250169	Permission to demolish existing warehouse (Block B) which adjoins existing dwelling (Block A) to Priory Street elevation and existing 2 storey over basement extension to rear of existing dwelling (Block A), and for the demolition of (Block C) existing warehouse/factory building to rear of property (accessed from Priory Lane). The following is further proposed; i) To construct a one storey over basement level extension to rear of existing dwelling (Block A). ii) For the modifications of existing windows and the addition of 4 no. patio doors with balconies to the rear of existing dwelling (Block A). iii) To construct (Block B) - (on the site of the former warehouse which adjoins the existing Block A dwelling) a new 4 storey over basement apartment building consisting of 1 no. Duplex 2 bedroom apartment on basement and ground floor level, with rear balcony, 1 no. one bedroom apartment with rear balcony and 3 no. two bedroom apartments, with rear balconies, and a communal bin store at ground floor level also. iv) To further construct (Block C - a three storey building) (on the site of the former warehouse/factory building to the rear of the property) which will comprise of 4 no. 1 bedroom apartments at ground floor level, 4 no. 2 bedroom duplex town houses over first and second floor, with 1 no. adjoining two storey 3 bedroom townhouse. An external communal bin store area and bicycle storage/parking facility is proposed to the rear of the property (to the front of Block C). v) 2 no. public open spaces (green areas) are also proposed to the rear of the property to provide for required amenity space, and bin truck and fire truck access turning point. All development and construction shall incorporate all necessary and associated site works	New Ross, New Ross Urban	04/04/2025
Kilkenny County Council	2560050	to refurbish and extend our dwelling. Works will include to construct a single storey extension to the front, a single storey extension to the rear, Elevation changes and to connect the dwelling to the public sewer, along with all associated site development works	Gorteens , Slieverue , Co. Kilkenny	06/05/2025
Kilkenny County Council	2534	to erect a dwelling house	Kilmurry , Slieverue , Co Kilkenny	25/07/2025
Kilkenny County Council	2560368	to construct a single storey dwelling with detached domestic garage, on-site sewerage treatment, new entrance onto the public road and all associated works	Ballynamorahan , Kilmacow , Co.Kilkenny	15/09/2025
Kilkenny County Council	2560370	to construct a dwelling house, sewage treatment system and percolation area, including all necessary site works	Scart , Mullinavat , Co. Kilkenny	15/10/2025
Kilkenny County Council	2560372	to construct a single storey dwelling with attached domestic garage, on-site sewerage treatment, entrance onto the public road and all associated works	Scart , Mullinavat , Co.Kilkenny	17/09/2025
Kilkenny County Council	2560409	for the construction of a single storey dwelling, detached domestic garage, proprietary treatment system and all ancillary site works	Cloone , Mullinabro , Kilkenny	Live Case
Kilkenny County Council	2591	to erect a dwelling house, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	Live Case
Kilkenny County Council	ACP Ref. 301975	Demolition of 3 existing out buildings and erection of 11 dwellings	Lower Kilmacow, Kilmacow, Co. Kilkenny	14/11/2018
Kilkenny County Council	ACP Ref. 303622	Demolition and reconstruction of existing house	Ballinagoth Quay, Rathsnagadan, Inistioge, Co. Kilkenny	24/06/2019
Kilkenny County Council	Acp Ref. 304920	A new dwelling and domestic wastewater treatment system and percolation area including refurbishment works to an existing protected structure and all associated site works.	Granny, Kilmacow, Co Kilkenny.	10/01/2020
Kilkenny County Council	Acp Ref. 306289	Housing Development of 25 houses	Dangan, Kilmacow, Co. Kilkenny	08/12/2020
Wexford County Council	Acp Ref. 307326	Construction of house	Poulmaloe, Whitechurch, New Ross, Co. Wexford.	Case is due to be decided by 08/12/2020
Wexford County Council	Acp Ref. 309555	Permission for the demolition of an existing single storey garage to side of an existing dwelling, erection of a two storey extension to the rear of an existing dwelling, raising of the ridge level on existing dwelling and all associated site works	The Hollow, Camblin, New Ross, Co. Wexford	04/06/2021
Kilkenny County Council	Acp Ref. 309918	Construction of 6 dwellings as an extension to partially completed housing development.	Castlehyde Park , Millbanks , New Ross, Co Kilkenny	21/10/2022

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	Acp Ref. 318813	8 duplex and 27 houses with associated site works.	Rockshire Road, Ballyrobin, Ferrybank, Co. Kilkenny	23/12/2024
Kilkenny County Council	Acp Ref. 322838	Construction of house	Killeen , Inistioge , Co Kilkenny	29/09/2025
Kilkenny County Council	Acp Ref. 247440	Retain and complete a domestic garage.	Ashbourne', Kilmurry, Slieverue, Co.Kilkenny.	01/02/2017
Other				
Wexford County Council	LAC1902	Proposed construction of a new fire station.	Hewitsland, New Ross, Co. Wexford	08/04/2019
Wexford County Council	LAC1905	The development of a public realm area in The High Hill in New Ross.	The High Hill, New Ross, Co Wexford	08/07/2019
Wexford County Council	20191332	Permission for the construction of seven ground floor mixed use commercial units.	Verosland, New Ross Urban, Wexford	15/11/2019
Kilkenny County Council	2215	for the proposed demolition of existing single storey commercial building and the proposed erection of a fully serviced 2 storey end terrace 2 bedroom townhouse, boundary treatments, together with all associated site development works, all	Main Street , Mullinavat , Co Kilkenny	08/04/2022
Kilkenny County Council	18110	for development of silage base with walls, concrete apron, loose cattle shed and associated site works at	Clogga , Mooncoin , Co. Kilkenny	14/05/2018
Kilkenny County Council	18501	to erect silage base and all associated works at	Ballyhimmin , Mullinavat , Co. Kilkenny	12/10/2018
Kilkenny County Council	1718	to erect spectator stand, first floor room to existing machinery shed for use as a gymnasium and all associated works	Ballynaraha , Glenmore , Co. Kilkenny	12/04/2017
Kilkenny County Council	17284	is sought for the construction of a 4 bay, mono-pitch carport of area 53.65Sq.m, the partial realignment of the existing driveway (entrance unaffected), replacement of existing timber fence with rendered blockwork wall, the removal of existing porch roof	Arderra , Mooncoin , Co. Kilkenny	28/08/2017
Kilkenny County Council	2360109	a four-lane vehicle testing facility and associated offices , together with all associated site land landscaping works	Deerpark , Mullinavat , Co Kilkenny	02/04/2024
Kilkenny County Council	2460111	for the construction of an indoor arena and associated site works	Lennaght , The Rower , Co Kilkenny	20/12/2024
Wexford County Council	20150563	PERMISSION FOR THE PROPOSED FILLING OF SITE WITH CLEAN STONE, SUBSOIL AND TOPSO	PORTERSLAND, NEW ROSS RURAL	31/08/2015
Wexford County Council	20210095	Permission for to fill 4047 sq.m. (part of the existing site) with a clean stone	Marshmeadows & Camlin, New Ross Rural	30/06/2021
Wexford County Council	20231410	Permission for the retention of a pay-to-use portable waste compactor	Knockavilla, New Ross Rural	28/02/2024
Kilkenny County Council	19246	to retain indefinitely silage base, hard surfaced yard and all associated works	Arderra , Mooncoin , Co Kilkenny	26/05/2020
Kilkenny County Council	2360371	TO CONSTRUCT AN AGRICULTURAL SILAGE SLAB & ALL ASSOCIATED SITE WORKS	BALLYFACEY UPPER , GLENMORE , CO. KILKEN	11/01/2024
Kilkenny County Council	2479	for the construction of a silage pit with ancillary underground seepage tank and all associated site works	Milltown , Piltown , Co. Kilkenny	16/09/2024
Wexford County Council	20240030	Permission for 9 no. additional silos at existing cement bagging facility	Stokestown, Oldcourt	20/12/2024
Kilkenny County Council	ACP Ref. 317082-23	Flood Relief Scheme to protect the Village from flooding up to the 1% AEP flood event. Scheme consists of hard defences in addition to a range of interventions along the watercourse reach to provide additional capacity and environmental improvements.	Ballyhale, County Kilkenny	01/05/2023
Kilkenny County Council	15381	Permission for Continuance of Use for existing 24m telecommunications structure, carrying associated antennae and link dishes, associated equipment cabinets, and associated works.	Garraunbaun , Drumdowney Upper Td , Co. Kilke	14/08/2015
Kilkenny County Council	17482	Permission to retain an existing 27.3m high telecommunications structure carrying antennas, communications dishes together with associated ground-mounted equipment with a 2.4 metre palisade fenced compound.	Ballydaw , Co. Kilkenny	08/09/2017
Kilkenny County Council	17489	Retention Permission to retain an existing 16.7m high telecommunications structure carrying antennas, communications dishes together with associated ground-mounted equipment within a 2.4metre palisade fenced compound.	Glendonnel , Mullinavat , Co. Kilkenny	12/09/2017
Kilkenny County Council	17529	Retention permission to retain An Existing 26.4M High Telecommunications Structure Carrying Antennas, Communications Dishes Together with Associated Ground-Mounted Equipment with A 2.4 Metre Palisade fenced Compound.	Castlebanny , Ballyhale , Co. Kilkenny	02/10/2017
Kilkenny County Council	21207	Permission for a 21.3m high monopole telecommunications structure together with antennas, dishes and associated equipment all enclosed in security fencing.	Mullennahone TD , Glenmore , Co Kilkenny	09/08/2021
Kilkenny County Council	2288	The development consists of an existing 25 metre high telecommunications support structure (total height including antennas 26.4 metres) carrying telecommunications equipment, together with existing equipment container.	Drumdowney Upper Townland , Murtaghstown ,	26/01/2023
Kilkenny County Council	16129	Retention Permission to retain an existing 30 metre high Lattice telecommunications support structure carrying antennas and RT link dishes.	Kilmurry , Slieverue , Co. Kilkenny	27/04/2016
Kilkenny County Council	20233	Permission to replace an existing 27.3 metre monopole telecommunications support structure with a new 30 metre multi-user lattice telecommunications support structure, carrying antenna and dishes and to extend the compound enclosed by a 2.4 metre high palisade fence.	Ballydaw , Co. Kilkenny	13/07/2020
Kilkenny County Council	21209	Permission to replace an existing 27m metre monopole telecommunications support structure with a new 33 metre multi-user lattice telecommunications support structure, carrying antenna and dishes and to extend the compound enclosed by 2.4 metre high palisade fence.	Castlebanny , Ballyhale , Co. Kilkenny	18/11/2021
Kilkenny County Council	1565	Permission for Continuance of Use for existing 36m telecommunications structure, carrying associated antennea and link dishes, associated equipment cabinets (as per previous Planning Ref P10-21) and Permission for additional telecommunications equipment.	BallykennaTd , Tullogher , Co. Kilkenny	31/03/2015

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Wexford County Council	20180931	Retention permission of an existing 15 metre high telecommunications support structure (total height including antennas 16.78 metres) carrying telecommunications equipment, together with existing equipment container and associated equipment within a fenced compound as previously granted under local authority reference 20120304.	Ballylane West, Oldcourt	30/08/2018
Kilkenny County Council	16529	retention permission for development of a 36 metre high tower with associated equipment attached including an 3 metre high anticlimbing cage at ground level all within an existing RTE chain-link fenced compound using existing access. This application is	Corbally Wood , Corbally (Td) , Co. Kilkenny	01/11/2016
Kilkenny County Council	17201	retention permission for a freestanding 30 metre high telecommunications mast with existing antennae, aerials, dishes, single storey equipment building, 2.5 metre high perimeter fencing with a vehicular access gate along with all associated development w	Corbally Woods , Co. Kilkenny	23/06/2017
Kilkenny County Council	1927	for replacement and relocation of the existing 15 metre high freestanding wooden pole communication structure and its associated antennae communication dishes and ground equipment, with a 20metre high free standing monopole communication structure, carry	Rosbercon , Co. Kilkenny	17/04/2019
Kilkenny County Council	2460555	for the erection of a 24m lattice telecommunications support structure on a 1.2 metre high raised foundation (providing an overall height of 25.2 metres) together with associated antennas and dishes and to remove the existing 15 metre lattice telecommuni	Crowbally , Mullinavat , County Kilkenny	10/11/2025
Kilkenny County Council	2318	for development. The development will consist of a new 27 metres telecommunications support structure with headframe, carrying antennas, dishes, associated equipment, ground-based equipment cabinets, fencing and all associated site development works for	Ballyrobin , Ferrybank , Co Kilkenny	07/03/2024
Kilkenny County Council	1330	Permission for continuance of use of an existing 25 metres high monopole support structure carrying radio antennas (total height including antennas 26.4m), palisade perimeter fencing and equipment container.	Drumdowner Upper Townland , Murtaghstown ,	17/06/2013
Kilkenny County Council	ACP Ref. 315856	The development consists of an existing 25 metre high telecommunications support structure and associated works as previously granted under local authority reference 13/30.	Drumdowney Upper Townland , Murtaghstown ,	26/03/2024
Kilkenny County Council	2460237 (ACP Ref. 321484)	Construction of a cattle shed, manure pit and associated works.	Coolmeen, Ballyhale, Co. Kilkenny	30/04/2025
Wexford County Council	20250033	Permission for development which will consist of modifications to service station forecourt to include a high-power electric vehicle charging hub, consisting of the following; (i) installation of 4no. electric vehicle charging bays with 2no. charging points, (ii) new modular ESB substation, CT metering cabinet and mini pillar, (iii) the relocation of existing laundrette kiosk to northern boundary, and the provision of 4no. new car parking spaces along eastern boundary, and (iv) all other associated site development, landscaping and drainage infrastructure works	New Ross, New Ross Urban	07/03/2025
Kilkenny County Council	2560195	sought for the infill and raising of existing ground levels with the importation of 17,250 Tonnes of recovered inert soil and stone under permit and as a by-product under article 27, together with all associated suite development works. This application is accompanied by a Natura Impact Statement (NIS)	Annaghs , Rosbercon New Ross , Co. Wexford	Undecided
Kilkenny County Council	2560212	sought for the demolition and removal of an existing shed and 2No. silos, and the construction of a new warehouse storage building, together with all associated site development works	Raheen , Rosbercon New Ross , Co. Kilkenny	13/10/2025
Kilkenny County Council	2560263	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: 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 along the site perimeter to include access points for mammals; 7.Environmental monitoring of noise, dust, surface water and groundwater for the duration of the restoration works and for a short period thereafter; and 8.All ancillary site works, landscaping and perimeter fencing. 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)	Catsrock Quarry , Catsrock and Rathaglish , Cour	Undecided

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2560264	for the construction of a fully serviced building comprising of a Viewing Stand, Community Meeting Room, Shop, Gym, Dressing Rooms, Storeroom and associated works situated	Kilmurry , Slieveroe , Co. Kilkenny	04/11/2025

Granted and Undecided Applications Within 200m of the Grid Connection Route Option 1 - 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Residential				
Kilkenny County Council	20422	to construct a new vehicular entrance, a single storey dwelling, a garage, a wastewater treatment system with all associated site works	Glenpipe , Tullogher , Co. Kilkenny	11/12/2020
Other				
Kilkenny County Council	17168	for development of a cattle shed, concrete apron and associated site works	Cappagh , Thomastown , Co. Kilkenny	13/06/2017
Kilkenny County Council	17664	for the construction of a new entrance from public roadway onto forestry lands to comprise the provision of	Bishopmountain , Mullinavat , Co. Kilkenn	11/01/2018
Kilkenny County Council	1895	for development at a site. The development will consist of the widening of an existing entrance connecting t	Ballymartin , Mullinavat , Co Kilkenny	10/05/2018
Kilkenny County Council	21184	for bovine slatted unit and cubicle shed, consisting of a slatted tank for slurry storage, concrete yard, holding	Mullennakill , Tullogher , Mullinavat	10/01/2022

Granted and Undecided Applications Within 200m of the Grid Connection Route Option 2 - 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Electrical and Water Services				
Kilkenny County Council	18573	for develop at existing Grt Isl-Kk 110kV Overhead Line, approx 49kms long.Approx 46.4km of existing circuit located within functional area of CoKk with approx 2.6km located within CoWex.The uprate works within CoKk will be undertaken betwn structure INT16 in townland of Drumdowney Upr,near admin border betwn Co's Wx&Kk and structure EM258 in twnland of Scart(ED Dunbell),east of KkCity.Within Co Kk existing circuit extends across twnlands of Drumdowney Upr,Murtaghstown,Luffany, Rathpatrick,Treanaree,Carriganurra,Nicholastown,Atateemore orBlackneys,Ballincrea, Fahy,Rathnasmolagh,Knockbrack,Ballinlammy,Haggard, BallyfasyLwr&Upr, Ballywairy, Darbystown,Ballallog,Listerlin,Brabstown,Ballyconnaught,Ballykenna,Garrandarragh, Ballyvool,Firgrove,Bohilla,Ballycocksoost,Coolsillagh,Kilmacshane,Kilcullen,Ruppa, Mungmacody,Cloghscregg,Castlegarden,Kilmanaheen,Dungarvan(EDBennettsbridge), Dungarvan Glebe,Cloghala(EDBennettsbridge),Ballynaboley,Smithstown(EDDunbell), Clashwilliam Td(EDDunbell),Blanchvillestown,Grove(EDDunbell),Roughfield,Rathcash, Rathgarvan orClifden,Maddockstown,Ballynamona,Highrath &Scart(EDDunbell). Uprate of existing circuit within CoWx will be undertaken within twnland of Grt Isl, between structure EM1 at Grt Isl Substn&structure INT15 near admin border between Co's Wx&Kk. Developm will consist of uprate of Grt Isl-Kk 110kv Overhead Line which will primarily include:re-stringing conductor withhigher capacity conductor,replacement of large proportion of existing structures,breaking out & reconstruction of concrete foundation & shear blocks of metal masts, painting of mast structures, replacement of insulators, crossarms, stays and/or fittings on existing structures &fitting/replacement of bird flight diverters.No additional structures proposed along existing circuit.Any replacement structures will be constructed at,or immediately adjacent to existing structures they will replace&will be of generally similar height & appearance. Assoc temp sitedevelop works to gain access to existing structures incl clearance of vegetation, disassembly & reassembly of stone walls&gate posts&removal & reinstatement of exist fencing.The prop dev includes all other temp assoc&ancillary site dev works reqd for uprate of exist circuit,incl install of silt traps,silt fences, stone rds, bogmats & clearspan bridges.No additional struct, no alteration to nature,extent, alignment, character or voltage of exist elect infrastruct is proposed.A NIS forms part of this application	Great Island to , Kilkenny Overhead Line	08/03/2019

Granted and Undecided Applications Within 200m of the Turbine Delivery Route 2013 to November 2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Renewable Energy Developments				
Kilkenny County Council	ACP Ref. 309306	The construction of 21 wind turbines and ancillary works at Castlebanny, Co. Kilkenny	Castlebanny, Co. Kilkenny	26/09/2022
Kilkenny County Council	2560391	a 10 Year Planning Permission for a solar farm with a total area of circa 189 hectares in the townlands of Atateemore or Blackneys, Ballyhobuck, Ballyrahan, Carriganurra, Charlestown, Davidstown, Drumdowney Lower, Drumdowney Upper, Gorteens, Grogan, Kilmurry, Nicholastown, Rathpatrick, Scartnamoe, Tinvaucoosh and Treanaree in County Kilkenny. The solar farm will consist of solar panels on ground mounted frames, 27 no. single storey electrical inverter/transformer stations, 5 no. single storey spare parts containers, 3 no. Ring Main Units, 5 no. weather stations, underground electrical ducting and cabling within the development site, private lands and within the L3429, L7523, L7563, L7469, L3407, L3414, L34144, L7466, L3406, L7483, L3415, N25 and N29 public roads to connect solar farm field parcels, security fencing, CCTV, access tracks, 7 no. watercourse/drain deck crossings and 4 no. horizontal directional drill crossings (under the N25 and N29 public roads and the Luffany River), temporary construction compounds, landscaping and all associated ancillary development and drainage works. Construction and operational access will be via 7 no. existing entrances from the L3429, L7469, L7466, L4783 and L34142 which will be subject to entrance upgrade works. Separate construction phase access options are proposed for Parcel 4 via Port of Waterford and the L4783. The operational lifespan of the solar farm will be 40 years and planning permission is requested for this duration. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application	In the townlands of Atateemore or Blackn	Live Case
Electrical and Water Services				
Kilkenny County Council	16129	Retention Permission to retain an existing 30 metre high Lattice telecommunications suppurt structure carrying antennas and RT link dishes together with associated equipment cabinets and security fence	Kilmurry , Slieverue , Co. Kilkenny	30/05/2016
Kilkenny County Council	17489	Retention Permission to retain an existing 16.7m high telecommunications structure carrying antennas, communications dishes together with associated ground-mounted equipment within a 2.4metre palisade fenced compound as previously granted under File No. 1230	Glendonnel , Mullinavat , Co. Kilkenny	13/10/2017
Kilkenny County Council	18647	for a temporary on-site waste water treatment system, including percolation area, and all associated works, to serve the motorway service area development permitted under planning permission ref: P17/456, as an amendment to permission P17/456; at R704	Garrandarragh , Mullinavat , County Kilke	28/12/2018
Kilkenny County Council	20346	for water supply and foul drainage works including all pipes, valves, chambers, connections, a foul waste water pumping station and associated site works	Gorteens , Belview Port , Slieverue	20/11/2020
Kilkenny County Council	20738	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)	Belview Port , Gorteens , Co Kilkenny	05/02/2021
Kilkenny County Council	2460437	permission to retain existing wastewater treatment system and all associated site works	Skeard , Kilmacow , Co Kilkenny	16/05/2025
Kilkenny County Council	2560074	for the construction of a new wastewater treatment system and a proposed change to the site boundary situated	Rathpatrick , Slieverue , Co. Kilkenny	23/06/2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2560233	constructing 2 no. industrial warehouse blocks for bulk storage, with Block A housing 4 no. single storey storage units (floor area - 3,488.4m2) and Block B housing 4 no. single storey units (floor area - 8446.2m2), new weighbridge and cabin, new internal access roads, retaining walls and boundary fencing and all ancillary works	Belview Port , Gorteens , Co. Kilkenny	25/07/2025
Industrial				
Kilkenny County Council	ACP Ref. 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.	Gorteens, Slieverue, Co. Kilkenny	25/02/2025
Kilkenny County Council	1646	for the proposed erection of an Industrial Warehouse Building for the storage and bagging of fertiliser products (this Planning Application will supersede a previous Application for a similar building on this site which was Granted Permission under Planning Reg No.15/263) together with alterations to site boundaries including new boundary wall and fencing and all associated site works and ancillary services	Gorteens , Slieverue , Co. Kilkenny	08/07/2016
Kilkenny County Council	ACP Ref. 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	IDA Science & Technology Park, Gorteens	22/01/2024
Kilkenny County Council	ACP Ref. 306126	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.	IDA Ireland, Belview Science and Technol	09/12/2019
Kilkenny County Council	17763	for development which will consist of the construction of an extension (198.3m2) to an existing warehouse (Unit 7); the installation in the extension of a conditioning plant, aqueous waste storage tank and bagging unit for Air Pollution Control Residues (APCR); the acceptance of 38,000 tonnes of APCR and 2600 tonnes of aqueous waste annually, which will be in addition to the 95000 tonnes of waste currently authorised; the operation of the conditioning plant and bagging unit in the extension; the storage of the conditioned and bagged APCR in Unit 7 (1455.7m2), and the deletion of Condition 3 c) of planning permission P13/585. The APCR will be classified as hazardous waste. The development will require a review of the Industrial Emissions Licence granted by the Environmental Protection Agency. An Environmental Impact Assesment Report (EIAR) will be submitted	Belview Port , Gorteens , Co. Kilkenny	27/06/2018
Kilkenny County Council	181	retention permission for extension to existing dwelling, conservatory as built and detached garage	Garrandarragh , Mullinavat , Co. Kilkenny	28/03/2018
Kilkenny County Council	19302	to erect a steel storage extension to existing industrial workshop and all ancillary works	Airmount , Kilmurry , Slieverue	14/02/2020
Kilkenny County Council	19328	for a change of use at Units 3 and 4 Belview Port. It is intended to change its current warehousing use to allow for the acceptance and processing of non-hazardous waste into Solid Recovered Fuel (SRF) and for the composting of organic fines. The application will allow for acceptance and processing of up to 98,500 tonnes per annum at the facility. The application is accompanied by An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS)	Belview Port , Gorteens , Co. Kilkenny	11/12/2019
Kilkenny County Council	19302	to erect a steel storage extension to existing industrial workshop and all ancillary works	Airmount , Kilmurry , Slieverue	14/02/2020
Kilkenny County Council	19328	for a change of use at Units 3 and 4 Belview Port. It is intended to change its current warehousing use to allow for the acceptance and processing of non-hazardous waste into Solid Recovered Fuel (SRF) and for the composting of organic fines. The application will allow for acceptance and processing of up to 98,500 tonnes per annum at the facility. The application is accompanied by An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS)	Belview Port , Gorteens , Co. Kilkenny	11/12/2019
Kilkenny County Council	22318	for a laydown area for equipment and break bulk materials. The works will include earthworks, drainage, concrete paving, retaining walls and landscaping works. A Natura Impact Statement will accompany this application	Gorteens , Slieverue , Co. Kilkenny	19/06/2023
Kilkenny County Council	22480	for a Maintenance Building, roof mounted solar panels and associate site works at Belivew Port, the building is to provide storage for port vehicles, workshops for the maintenance and storage of port machinery and equipment, ancillary office accommodation and welfare facilities at	Gorteens , Slieverue , Co. Kilkenny	21/02/2023

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2460152	for development, at Unit 2, 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).	Unit 2 Belview Port , in the townland of Go	24/06/2024
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)	Unit 1 Belview Port , in the townland of Go	26/03/2025
Residential				
Kilkenny County Council	16119	to erect dwellinghouse and all associated works	Scart , Mullinavat , County Kilkenny	27/05/2016
Kilkenny County Council	16372	to erect a dwelling house, domestic garage and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	10/10/2016
Kilkenny County Council	16550	for change of house design from a bungalow as granted under planning application 10/420 to a storey and a half type dormer dwelling, with detached domestic garage, on site sewerage treatment system, new entrance onto public road and all associated works	Granny , Kilmacow , Co. Kilkenny	12/05/2017
Kilkenny County Council	16779	to retain extension to existing dwelling as built	No 11 Airmount , Slieverue , Co. Kilkenny	21/02/2017
Kilkenny County Council	17516	permission for the demolition of the existing semi detached 2 no, two storey dwellings. To construct 2no new two storey semi detached dwelling house. Provision of a new treatment plant and percolation area. All associated site development works	Rossinan , Mullinavat	23/10/2017
Kilkenny County Council	1776	to erect dwelling house and all associated works	Scart , Mullinavat , Co. Kilkenny	28/06/2017
Kilkenny County Council	18332	for existing extension to the side of the dwelling and Planning Permission to construct a new single storey extension to the side of the existing single storey dwelling and all associated works at	Ballykillaboy , Kilmacow , Co. Kilkenny	15/08/2018
Kilkenny County Council	18336	for development at this site. The development will consist of construction of a family house, garage, wastewater treatment system, percolation area, site entrance together with all ancillary site works	Scart , Mullinavat , Co Kilkenny	17/08/2018
Kilkenny County Council	1840	for a two storey (with attic accommodation) fully serviced detached dwelling together with all associated site works to include new vehicular access/driveway, landscaping, boundary treatments, well, foul water treatment system with percolation area, detached single storey garage, and all other associated site works at	Ballykillaboy , Kilmacow , Co. Kilkenny	26/06/2018
Kilkenny County Council	18563	for the indefinite retention of existing single storey garage/store to side/front and conservatory to rear of existing bungalow, together with permission for indefinite retention of assorted single storey outbuildings/'non-commercial' storage shed to rear of house (solely for the personal/incidental use of the dwelling)	Gorteens , Slieverue , Co. Kilkenny	09/11/2018
Kilkenny County Council	18668 Acp Ref. 304	the construction of a new dwelling with a new domestic wastewater treatment system and percolation area including refurbishment works to an existing protected structure and all associated site works	Granny , Kilmacow , Co Kilkenny	10/01/2020
Kilkenny County Council	18750	to construct a single storey dwelling, on site sewerage treatment, new entrance onto public road and all associated works	Scart , Mullinavat , Co. Kilkenny	13/02/2019
Kilkenny County Council	18810	to construct a dwelling house together with entrance onto the public road, wastewater treatment system and associated site development works at	Kilmurry , Slieverue , Co Kilkenny	27/09/2019
Kilkenny County Council	18866	is being sought to convert and extend existing derelict dwelling house to new dwelling house with new garage to rear of house and install new wastewater treatment plant with percolation beds. Form new joint Right of Way vehicular entrance to site and remove in its entirety high level grass verge in road East of proposed site entrance to a length of90 meters to achieve required sightlines, all with associated site works	Rathpatrick , Slieverue , Co Kilkenny	29/03/2019
Kilkenny County Council	19133	to retain indefinitely and spread on site imported topsoil and permission to erect dwelling house and all associated works	Dunkitt , Kilmacow , Co. Kilkenny	26/08/2019

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	19173	1. Planning permission for development to demolish existing single storey extension and construction of replacement dormer extension to the rear of existing dwelling house. 2. Planning permission for erection of advertising sign for "Slieverue Sports Injury Clinic" at front gate of dwelling house. 3. Retention of single storey log cabin for use in physical therapy practice in rear garden. 4. Retention of alterations to window features to front facade	10 Airmount , Slieverue , Co. Kilkenny	12/06/2019
Kilkenny County Council	192	to erect a dwelling house & all ancillary works	Deerpark , Mullinavat , Co Kilkenny	17/05/2019
Kilkenny County Council	19267	The development will consist of the demolition of an existing two storey extension, the construction of a two storey extension to the rear of the property, new front porch, proposed connection to the public sewer and all associated site works	Gorteens , Slieverue , Co Kilkenny	10/07/2019
Kilkenny County Council	19468	for the proposed construction of a bungalow style dwelling, garage, driveway, vehicular entrance, borewell, waste water treatment system with percolation and all associated site works	Deerpark , Mullinavat , Co. Kilkenny	20/11/2019
Kilkenny County Council	20169	to construct a single storey dwelling house with domestic garage and with new proprietary sewage treatment system and percolation area, and private borewell water supply and vehicular access from public roadway. Permission also sough for construction of stables for horses and various ancillary buildings relevant to same and including all associated and ancillary site development works	Deerpark , Mullinavat , Kilkenny	28/10/2020
Kilkenny County Council	20264	for a proposed new bungalow, proposed new vehicular entrance, driveway, bore well, wastewater system with percolation, storm water soakways and all associated site works	Rossinan , Mullinavat , Co. Kilkenny	24/11/2020
Kilkenny County Council	20545	for the development at this site. The development will consist of the demolition of existing front porch, side extension and chimneys, new roof finish to existing dwelling, construction of a storey and a half extension to the rear of the property, the construction of a waste water treatment system and all associated site works	2 Cloone Road , Ferrybank , Co Kilkenny	18/01/2021
Kilkenny County Council	2060	to erect a dwelling house, detached garage, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	21/07/2020
Kilkenny County Council	20818	for the proposed erection of a fully serviced 2 storey detached dwelling, detached single storey garage, proposed vehicular and pedestrian entrance, boundary treatments, landscaping, together with all associated site development works to include new foul water treatment system and percolation area	Killaspy , Slieverue , Co. Kilkenny	16/06/2021
Kilkenny County Council	2111	is being sought to form new vehicular site entrance and construct four bedroom dormer dwelling house and connect foul drainage to wastewater treatment system and percolation beds with all associated site works to my site	Rathpatrick , Slieverue , Co Kilkenny	16/08/2021
Kilkenny County Council	21167	for the following development: Erect dwelling house and all associated works	Scart , Mullinavat , County Kilkenny	27/08/2021
Kilkenny County Council	21331	to erect a dwelling house, detached garage, sewage treatment system & all ancillary works	Ballykillaboy , Kilmacow , Co Kilkenny	08/10/2021
Kilkenny County Council	21441	for the proposed erection of a fully serviced part single, part two storey detached dwelling, detached garage, proposed vehicular and pedestrian entrance, boundary treatments, landscaping, together with all associated site development works to include new foul water treatment system and percolation area, all	Dunkitt , Kilmacow , Co Kilkenny	11/10/2021
Kilkenny County Council	21450	to erect a dwelling house, detached garage, sewage treatment system and all ancillary works	Killaspy , Slieverue , Co. Kilkenny	06/10/2021
Kilkenny County Council	22270	to erect a dwelling house, detached garage, sewage treatment system & all ancillary works	Kilmurry , Slieverue , Co Kilkenny	07/11/2022
Kilkenny County Council	2260	to form new vehicular site entrance, construct two storey dwelling house with wastewater treatment system and percolation beds and install new water supply borewell with all associated site works	Kilmurry , Slieverue , Co. Kilkenny	26/07/2022
Kilkenny County Council	2287	to erect a dwelling house, detached garage, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	04/05/2022
Kilkenny County Council	2360205	for the construction of a 2 storey dwelling house with carport and domestic garage attached, domestic waste water treatment system, site entrance, and all associated site works	Kiln Road , Kilmurry , Slieverue Co Kilkenr	15/08/2023
Kilkenny County Council	2360385	permission to construct a 1.5 storey dwelling, a detached garage of 60 sq mts, a new entrance to the public road along with all associated site development works	Grannagh , Kilmacow , Co. Kilkenny	08/01/2024
Kilkenny County Council	24110	to erect a dwelling house, sewage treatment system and all ancillary works	Ballykeoghan , Kilmacow , Co. Kilkenny	14/02/2025
Kilkenny County Council	2534	to erect a dwelling house	Kilmurry , Slieverue , Co Kilkenny	25/07/2025
Kilkenny County Council	2560370	to construct a dwelling house, sewage treatment system and percolation area, including all necessary site works	Scart , Mullinavat , Co. Kilkenny	15/10/2025

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	2560368	to construct a single storey dwelling with detached domestic garage, on-site sewerage treatment, new entrance onto the public road and all associated works	Ballynamorahan , Kilmacow , Co.Kilkenny	15/09/2025
Kilkenny County Council	2560372	to construct a single storey dwelling with attached domestic garage, on-site sewerage treatment, entrance onto the public road and all associated works	Scart , Mullinavat , Co.Kilkenny	17/09/2025
Kilkenny County Council	2560409	for the construction of a single storey dwelling, detached domestic garage, proprietary treatment system and all ancillary site works	Cloone , Mullinabro , Kilkenny	Live Case
Kilkenny County Council	2591	to erect a dwelling house, sewage treatment system and all ancillary works	Kilmurry , Slieverue , Co. Kilkenny	Live Case
Other				
Kilkenny County Council	16305	retention permission and permission. Permission to retain indefinitely extension to slatted cubicle shed and permission to erect further extensions to slatted cubicle shed, roof existing open feed areas and all associated works	Ballykillaboy , Kilmacow , Co. Kilkenny	08/08/2016
Kilkenny County Council	16316	for a new forestry access road to service the existing forestry lands and all associated works	Ballynooney , Mullinavat , Co. Kilkenny	13/02/2017
Kilkenny County Council	16566	for four additional storage silos and a maintenance building at	Mima Packaging Plant , Gorteens , Belview	18/11/2016
Kilkenny County Council	1681	to construct a farm/forestry roadway exiting onto the R704 road and all associated site works	Ballynooney West , Mullinavat , Co. Kilker	13/05/2016
Kilkenny County Council	17370	to construct 1.A new cubicle shed to house dairy cows along with underground slatted slurry storage and 2. A new Straw/Machinery Shed and all associated site works	Kilmurray , Slieverue , Co. Kilkenny	28/08/2017
Kilkenny County Council	17456	Permission for the development of a 24 hour opening Motorway Service Area to include: 1. Vehicle fuelling station with 12 no. bays and a 2 bay HGV fuelling station with canopy; 2. A single storey services building with canopy including: convenience store (incorporation full off sales for the sale of alcohol) (100m2); food court with cafe and restaurant uses, including take away facilities; indoor play area; offices and reception with tourist information; public toilet changing and shower facilities; plant room; storage and associated services; 3. A single storey roofed enclosure attached to the rear of the services building and associated yard for storage and services; and 4. External facilities and works include picnic, play, amenity and rest areas; bicycle parking; car and HGV parking spaces, electrical vehicle charging points; upgrading of existing vehicular entrance from the R704, signage, on site waste water treatment system, including percolation area and all associated site development works	At R704 , Garrandarragh , Mullinavat	15/12/2017
Kilkenny County Council	17492	Retention Permission to retain indefinitely garage/store as erected, retain indefinitely as built and complete twinned access and all associated works	Scart , Mullinavat , Co. Kilkenny	16/10/2017
Kilkenny County Council	17664	for the construction of a new entrance from public roadway onto forestry lands to comprise the provision of splayed access, clear visibility sightlines, associated setting back of adjacent roadside boundaries, provision of associated surface water drainage, fences, finished hardcored structure to access area, and all associated siteworks	Bishopmountain , Mullinavat , Co. Kilkenn	11/01/2018
Kilkenny County Council	1779	for (a) the proposed change of ground levels on site, (b) the erection of a retaining wall and (c) the erection of a boundary fence, together with all associated site works on site	Gorteens , Slieverue , Co. Kilkenny	10/05/2017
Kilkenny County Council	17820	for a 7 year permission for Bulk Stores and associated site works. The Stores will be used to store part related products such as bulk break, bulk and unitized products. The site works will include two weighbridges, weighbridge office, a new entrance for trucks, entrance gates, earthworks, fencing, relocation of an existing water tank, retaining walls, drainage, paving works and landscaping.	Gorteens , Slieverue , Co. kilkenny	14/05/2018
Kilkenny County Council	18184	to demolish nine agricultural buildings and associated site works at	Garrendarragh , Mullinavat , Co. Kilkenny	30/05/2018
Kilkenny County Council	18370	to amend previously granted extension to slatted cubicle shed ref no P16305 & full planning permission to erect a further 2 span extension to slatted cubicle shed & all associated site works	Ballykillaboy , Kilmacow , Co Kilkenny	27/08/2018
Kilkenny County Council	18431	for a laydown area for equipment and break bulk materials. The works will include earthworks, drainage, concrete and hardcore paving, retaining walls and landscaping works at	Gorteen , Slieverue , Co. Kilkenny	21/09/2018
Kilkenny County Council	18559	to erect slatted cubicle shed and all associated works at	Kilmurry , Slieverue , Co. Kilkenny	19/11/2018

Local Authority	Reg. Ref.	Proposal	Address	Grant Date
Kilkenny County Council	18581	to construct a slatted shed with straw lieback, manure pit and all associated site works at	Glendonnell , Mullinavat , Via New Ross	23/11/2018
Kilkenny County Council	18658	for development of calf shed, silage base, concrete aprons and associated site works at	Glendonnell , Mullinavat , Co. Kilkenny	21/06/2019
Kilkenny County Council	1895	for development at a site. The development will consist of the widening of an existing entrance connecting to the public road (to form a bellmouth entrance), to facilitate occasional access to an existing forestry plantation, and all ancillary site development works	Ballymartin , Mullinavat , Co Kilkenny	10/05/2018
Kilkenny County Council	19187	to construct a milking parlour, slatted tank and ancillary works	Ballynooney , Mullinavat , Co Kilkenny	17/06/2019
Kilkenny County Council	19259	for the demolition of an existing gate house/security office at the main entrance to Belview Port and its replacement with a new larger gate house/security office and all associated site works including the provision of temporary security offices and temporary weighbridge, relocation of one existing weighbridge, entrance alterations, drains and services. Also planning permission for the construction of a second security office, two number car parking spaces, barriers and associated site works to control access to the rear entrance to Belview Port	Gorteens , Slieverue , Co. Kilkenny	17/09/2019
Kilkenny County Council	19268	to retain indefinitely extension to workshop, external access stairs to first floor of original building and development of first floor to provide canteen, changing room, shower and storage elevations as constructed and all associated works	Fogarty Motors , Milltown , Kilmacow	12/07/2019
Kilkenny County Council	20102	permission for development of a loose cattle shed, concrete apron, walled silage base, concrete apron and associated site works	Glendonnell , Mullinavat , Co. Kilkenny	26/06/2020
Kilkenny County Council	20155	to erect a milking parlour, milk silo, drafting and handling area, holding pens waiting yard with slatted tank and all associated site works	Ballykillaboy , Kilmacow , Co. Kilkenny	17/11/2020
Kilkenny County Council	20355	for development of a loose cattle shed, concrete apron, walled silage base, concrete apron and associated site works	Glendonnell , Mullinavat , Co. Kilkenny	24/08/2020
Kilkenny County Council	20416	to temporary install a 10.9 x 7.3 meter single storey modular accommodation Masterkabin structure to provide playschool group and afterschool facilities and to connect foul drainage and surface water to combined public mains drainage located within the site boundary with all associated site works to the grounds of	Slieverue GAA Club , Kilmurry Airmount F	25/09/2020
Kilkenny County Council	20553	for the following works to the existing school, the conversion of an existing classroom to 2 no. new offices, the construction of a new single storey extension consisting of 1 no. new classroom, 2 no. new resource rooms, 1 no. assisted user wc and a new link corridor together with all ancillary and associated site works	Our Lady of Lourdes National School , Slie	13/11/2020

Appendix A-XIV FRESHWATER PEARL MUSSEL SURVEY REPORT

BALLYFASEY WIND FARM

Freshwater Pearl Mussel Survey



Version: 2nd of December 2025

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1. INTRODUCTION

Ecofact Environmental Consultants Ltd. was commissioned by Tobin to undertake a Stage 1 Freshwater Pearl Mussel Survey (*Margaritifera margaritifera*) of watercourses affected by the proposed Ballyfasey Wind Fram in Co. Kilkenny. The purpose of the survey was to establish if Freshwater Pearl Mussels (FPMs) were present in the likely zone of influence of the proposed wind farm development.

The survey was undertaken in September 2024 under optimal environmental conditions. FPM surveys were conducted on all watercourses draining the site. The location of the proposed Ballyfasy Wind Farm site in Co. Kilkenny is shown in Figure 1.

The Freshwater Pearl Mussel is acknowledged to be one of the most demanding species of high water quality and high river bed quality in the world (Atkinson *et al*, 2024). Whilst Ireland supports a significant proportion of the *Margaritifera* populations remaining in Europe, these populations have been in dramatic decline in recent years, with an estimated decline of between 12.6% - 32.7 % between the 2007-2012 and 2013 – 2018 monitoring periods (NPWS, 2019). The species is on the IUCN Red List of Threatened Species and throughout the island of Ireland it is rated as critically endangered (Atkinson *et al*, 2024).

The Freshwater Pearl Mussel is afforded legal protection under the Wildlife Acts (1976 - 2023) in Ireland. The species was added to the fifth schedule of the Act under Statutory Instrument No. 112 of 1990. Therefore, under Section 23, it is an offence to injure or wilfully interfere with or destroy the breeding place or resting place of *Margaritifera*. The Wildlife Act affords protection to all *Margaritifera* populations within Ireland, regardless of whether they occur within or outside of an SAC (Atkinson *et al*, 2024). At a European level, *Margaritifera* is protected under the Habitats Directive and is listed under Annex II and Annex V of the Directive. The Habitats Directive has been transposed into Irish law via the European Communities Birds and Natural Habitats Regulations 2011 (S. I. No. 477 of 2011).

The Nore Pearl Mussel (*M. durrovensis*) is now considered to be an ecotype of the Freshwater Pearl Mussel (*M. margaritifera*) rather than a separate species (Geist *et al*, 2018). In this report the name Freshwater Pearl Mussel (*M. margaritifera*) is used to cover both *M. margaritifera* and the *M. durrovensis*. The National Parks and Wildlife Service (NPWS) Qualifying Interest list of the River Barrow and River Nore Special Area of Conservation (SAC) no longer includes *M. durrovensis*. The Qualifying Interest (QI) is now *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029].

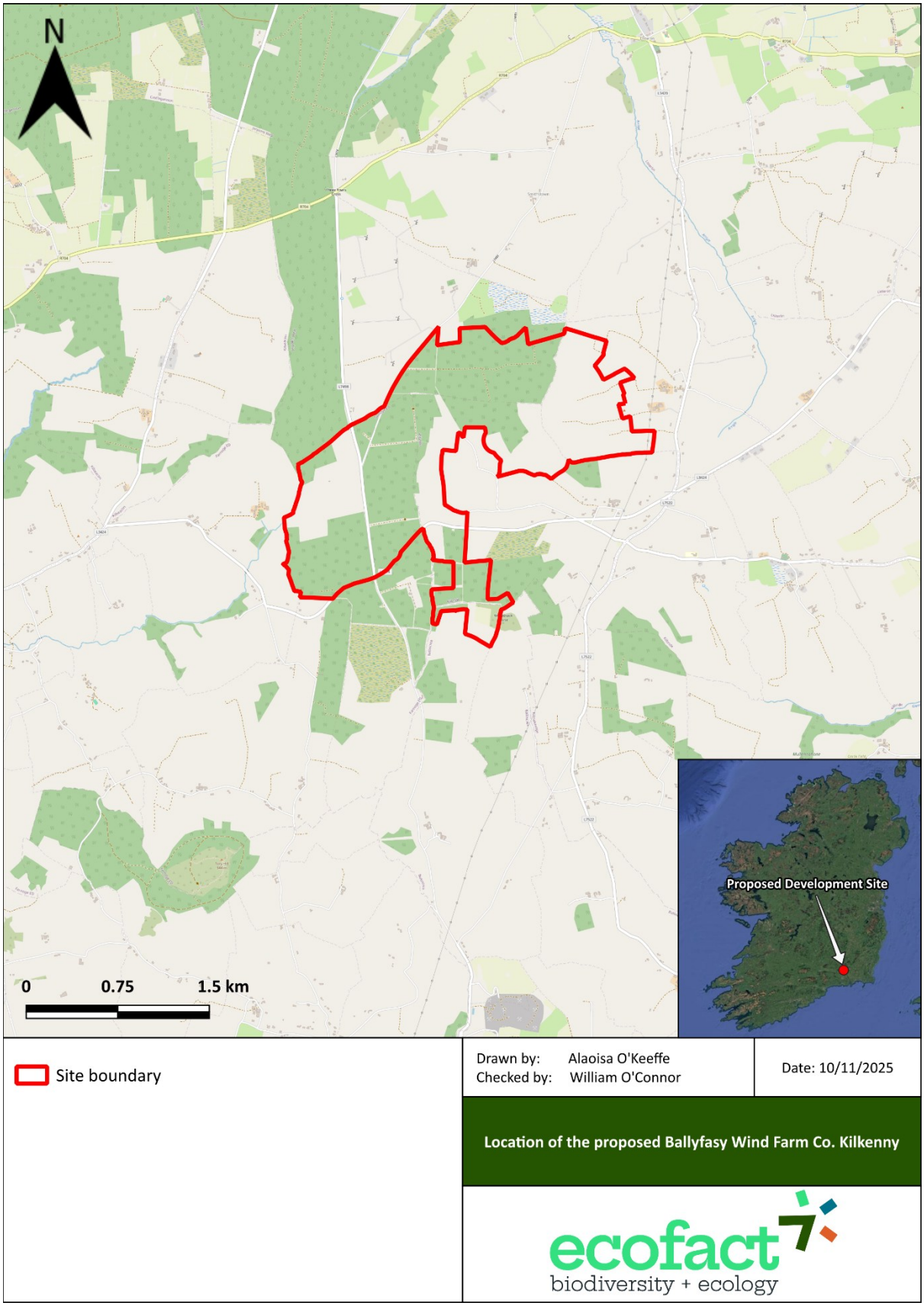


Figure 1 Location of the proposed Ballyfasy Wind Farm site in Co. Kilkenny.

2. METHODOLOGY

2.1 Desk study

A desk-study was undertaken to identify existing records for the Freshwater Pearl Mussel from within the affected river catchments, and to identify the potential for this species to occur within the study area. A desk study review of the National Parks and Wildlife Service (NPWS) designations for this species relating to the affected rivers and the relevant legislation in place for the protection of this species was also undertaken.

2.2 Field surveys

Surveys of *Margaritifera* within a watercourse carry an inherent risk of damage to mussel beds and mussel habitats, and therefore a licence is required under Sections 9, 23 and 34 of the Wildlife Act to undertake surveys of the species.

Therefore, the current survey was carried out under license (NPWS Licence No. C131/2024). The methodology employed followed the NPWS guidance '*Margaritifera margaritifera* Stage 1 and Stage 2 survey guidelines' (Anon, 2004). The surveys undertaken were to establish whether FPMs were present in the subject river channels, employing a wading / bathyscope survey. The objective of a Stage 1 FPM survey is to establish whether adult *Margaritifera margaritifera* are present or not in a river.

All watercourses were surveyed in detail to 1km downstream of the proposed wind farm site boundary. This area is shown in Figure 2. Only small 1st order watercourses are present in this area. They were all surveyed visually and no snorkelling was required. This was the survey area for the contract and all channels in this area were fully evaluated. A further general overview survey was then undertaken to 5km downstream of the proposed wind farm site (See Figure 3). The surveys in this area were general overview surveys as per the contract. Detailed assessments were also carried out at 14 selected sites (also shown in Figure 3).

2.2.1 FPM habitat assessment

Habitat has a key influence on the presence/absence and density of mussels in a river. The habitat requirements for Freshwater Pearl Mussels are outlined in Skinner *et al*. (2003). These mussels require pristine freshwater ecosystems to survive and reproduce. They inhabit medium-to-large streams or rivers with moderate to steep gradients, where fast-flowing, well-oxygenated water supports clean substrates of sand, gravel, and cobble. In Ireland, Freshwater Pearl Mussels are found in a variety of rivers, ranging from the main channels of large watercourses to small streams.

Freshwater Pearl Mussels are typically found in medium-to-large rivers and streams, particularly those classified as stream orders 2, 3, and 4 (Moorkens, 2000). These streams provide the appropriate size and flow conditions needed to support mussel populations. Gradients in these watercourses are moderate to steep, promoting fast-flowing water that ensures high levels of oxygenation. The riverbed substrata are critical, with mussels favouring small sand patches stabilized among larger stones or boulders. This type of substrate provides stability and minimizes the risk of smothering by fine sediments. Areas with significant sedimentation of silt are unsuitable, as such conditions can clog feeding structures and prevent successful juvenile recruitment. Mussel aggregations are often found in shaded areas, typically created by overhanging vegetation, which help moderate water temperatures. Substrate stability, governed by composition, flow extremes, and the gradient of the watercourse, is another crucial factor for suitable habitat. Bankside vegetation also plays an important role in mussel habitats by providing shade, stabilizing riverbanks, and reducing sediment input from erosion. These

ecological interactions highlight the dependence of Freshwater Pearl Mussels on a healthy and interconnected aquatic ecosystem.

High water quality is essential for Freshwater Pearl Mussels to survive and reproduce. They require high dissolved oxygen levels, typically exceeding 9 mg/L, and low concentrations of nutrients such as nitrogen and phosphorus. A stable pH range, generally between 6.5 and 8, is also critical. Consistent water clarity and low levels of fine sediments are necessary to avoid suffocation and habitat degradation. Cool water temperatures, typically below 20°C, are ideal for their physiological functioning. The absence of pollutants, including heavy metals, pesticides, and organic contaminants, is vital for the survival of both adult mussels and juveniles. Although older mussels can sometimes persist in areas with reduced water quality, healthy populations are strongly associated with unpolluted waters.

The survival of Freshwater Pearl Mussels is closely linked to the presence of suitable host fish, such as juvenile salmonids (*Salmo salar* and *Salmo trutta*). These fish are essential for the glochidia, the larval stage of mussels, which attach to the gills of the fish to develop. In Ireland, the hosts for glochidia are young native salmonids, typically within their first three years of life. A healthy population of juvenile salmonids is crucial, as the chances of glochidia attaching successfully are very low; most glochidia are swept downstream and die.

A general assessment of the habitat suitability and condition of the receiving watercourses was carried out at 14 selected sites. These sites are shown in Figure 3 and listed in Table 1. These sites were selected during the general survey of the wider area. These were locations which were considered to have suitable potential habitats. The habitat assessments were based on the known requirements of this species as outlined above. The surveys at these sites also had regard to the environmental parameters set out in the Fourth Schedule of the EC Environmental Objectives (Freshwater Pearl Mussel) Regulations (S.I. 296 of 2009).

2.2.2 Personnel and limitations

The surveys were completed by licenced surveyor Dr. William O'Connor, with assistance from Grace Walsh M.Sc. and Eoin McMahon. The surveys were completed during ideal conditions (dry, bright and normal water levels) during September 2024. Strict biosecurity measures were implemented between sites, including disinfecting all equipment using Virkon Aquatic. No significant limitations to the survey were identified.

Table 1 Location of the 14 sites selected for general habitat suitability and condition assessments.

Site Number	River	Segment Code	EPA Code	X	Y
A1	Arrigle	15_1470	15A02	662282	626764
A2	Arrigle	15_276	15A02	662509	629084
A3	Arrigle	15_502	15A02	662119	630104
A4	Arrigle	15_503	15A02	660647	632248
A5	Arrigle	15_90	15A02	660176	633190
A6	Arrigle	15_92	15A02	660375	635079
A7	Arrigle	15_93	15A02	660743	638230
G1	Glenmore River	16_1485	16B73	659678	624618
S1	Smartscastle (Stream)	16_1485	16B73	658011	624044
S2	Smartscastle (Stream)	16_3475	16S07	661214	621904
S3	Smartscastle (Stream)	16_3475	16S07	661255	620250
S4	Smartscastle (Stream)	16_3475	16S07	660984	619670
B1	Ballyknockbeg	16_3342	16S07	660451	617774
B2	Ballyknockbeg	15_2039	NA	665647	623522

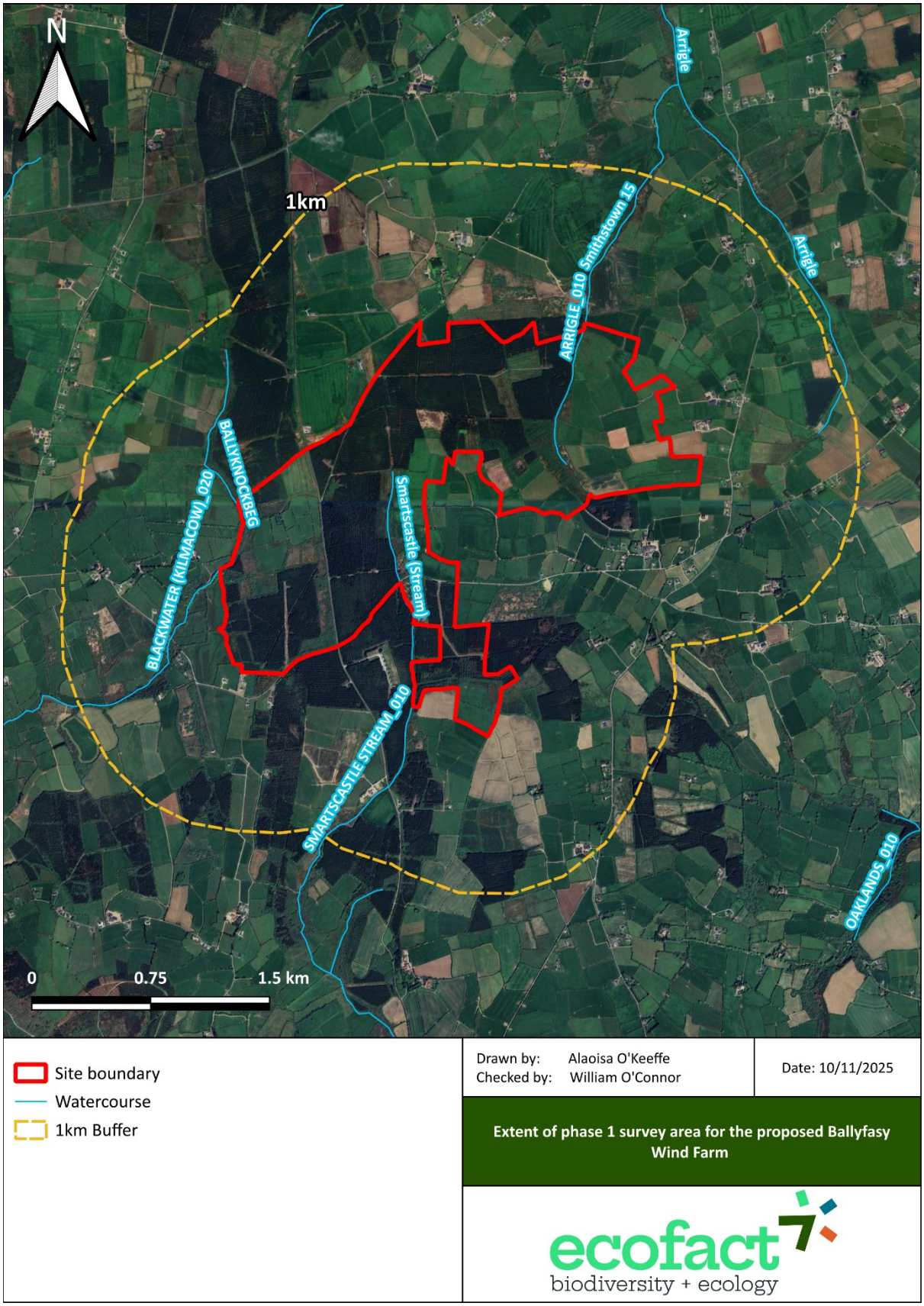


Figure 2 Extent of the Phase 1 survey of watercourses affected by the proposed Ballyfasy Wind Farm site in Co. Kilkenny.

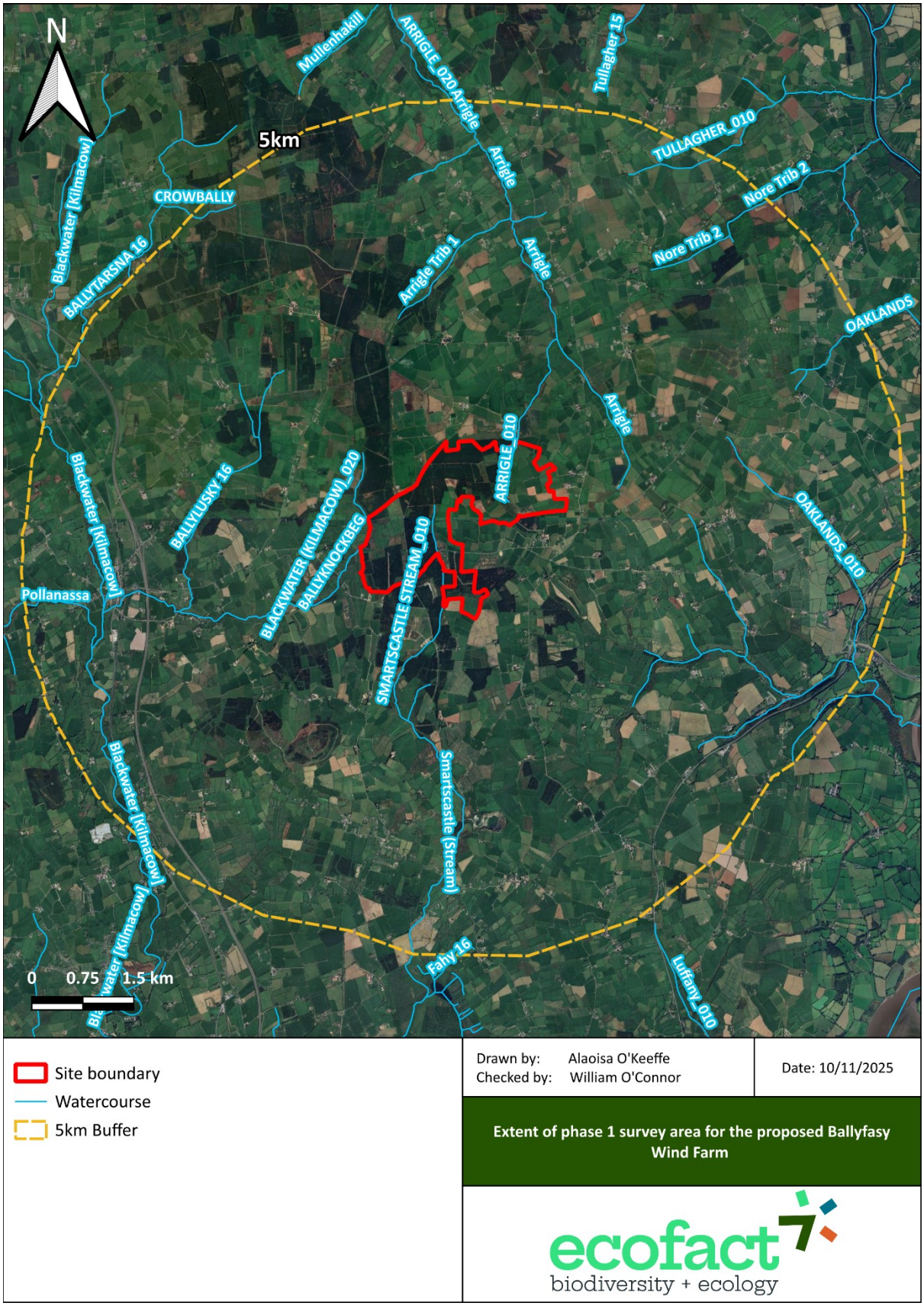


Figure 3 Extent of the general survey of watercourses affected by the proposed Ballyfasy Wind Farm site in Co. Kilkenny (5km radius).

3. RESULTS

3.1 Introduction

The location of Natura 2000 sites in relation to the proposed Ballyfasy Wind Farm site is shown in Figure 4. The proposed development is located upstream of the River Barrow and River Nore SAC (Site Code 002162) and the Lower River Suir SAC (Site Code 002137). Both of these Natura 2000 sites are designated for Freshwater Pearl Mussel [1029].

Three sub-catchments are affected by the proposed wind farm development; the Nore_SC_130 sub-catchment, the Nore_SC_140 sub-catchment, and the Blackwater[Kilmacow]_SC_010 sub-catchment. These catchments are indicated in Figure 5.

3.2 Nore_SC_130 sub-catchment

There is one watercourse within the boundary of the proposed wind farm site that is part of the Nore_SC_130 sub-catchment. This sub-catchment is shown in Figure 6. This is the Smithstown15 stream which is part of the headwaters of the River Arrigle. The Smithstown15 stream rises within the proposed development site and flows north to form the River Arrigle. The River Arrigle joins the River Nore upstream of Thomastown. The main channel of most of the River Arrigle is designated as part of the River barrow and River Nore Special Area of Conservation (SAC).

There is no suitable habitat for Freshwater Pearl Mussels in the Smithstown15 stream on the site. This watercourse is too small to support this species. The section of the River Arrigle from the Smithstown15 stream confluence downstream to the boundary of the SAC is also not considered to have any potential for Freshwater Pearl Mussels. The SAC boundary is at the R704 bridge and there is a lot of siltation at this point and there is no evidence of any mussels being present. Downstream of here the physical character of the river improves and from Ballyconnaught downstream the River Arrigle does have potential Freshwater Pearl Mussel habitats present. This area is >5km downstream of the proposed wind farm site.

The river was examined at four locations between the SAC boundary and the bridge at Ballyduff house just upstream from the River Nore. No evidence of mussels or dead shells were recorded during the spot checks completed at these locations.

There are no records of Freshwater Pearl Mussels in the River Arrigle. Moorkens *et al* (1992) reported that no live mussels were recorded in any tributaries of the River Nore. The River Arrigle was included in this survey and the survey extended over 4km of the river (which was estimated to be around 90% of the suitable habitat in the river).

This species has been confirmed absent in the areas surveyed within 1km of the wind farm site boundary. It is considered very unlikely that mussels are present in areas further downstream to the SAC boundary. No evidence of mussels or dead shells were recorded during the spot checks completed further downstream.

The River Nore main channel downstream of the River Arrigle confluence is not within the main known distribution of Freshwater Pearl Mussels in the River Nore.

The main mussel population is restricted to the section of main river channel from Poorman's Bridge to Lismaine Bridge, upstream of Ballyragget. However, the population has not successfully reproduced in the River Nore since 1970 and was considered to be on the edge of extinction in 2009 (NS 2, 2010).

The draft sub-basin management plan noted that the population in the River Nore was un-viable and on the verge of extinction (NS 2, 2010).

Water quality issues in the Nore catchment have hindered juvenile mussel recruitment, with heavy siltation and nutrient enrichment, and the timescale for such issues to be cleared is noted to be much longer than the lifespan of the last remaining mussels in the River Nore. Breeding programmes have been set up in the hope of creating self-sustaining populations that can be translocated to the Nore catchment (NS 2, 2010).

3.3 Nore_SC_140 sub-catchment

It can be seen from Figure 7 that this sub-catchment is only marginally within the red line boundary of the proposed wind farm development site. There does not seem to be any real likelihood that any drainage from the proposed development site will enter any watercourses in the catchment. There are no watercourses from the sub-catchment on or near the site. The nearest watercourse in this sub-catchment is the Parkstown Lower stream which flows into the Glenmore River. The Mullennahone stream is also located to the southeast of the red line boundary. This stream becomes the Glenmore River downstream of the Parkstown Lower stream catchment. The Glenmore River flows into the River Barrow estuary downstream of New Ross.

There are no records of Freshwater Pearl Mussels in the Nore_SC_140 sub-catchment. This species has been confirmed absent from the watercourses near the proposed wind farm site (Parkstown Lower and Mullennahone stream). The upper Glenmore River also has no potential for mussels. The Glenmore River was also inspected at Glenmore and this area was ruled out as a potential habitat for mussels. Freshwater Pearl Mussels would also not occur in the River Barrow estuary as the habitats here are unsuitable for this species.

Based on this current survey and absence of any records from this sub catchment the presence of Freshwater Pearl Mussels in the zone of influence of the proposed wind farm development is ruled out.

3.4 Blackwater [Kilmacow]_SC_010 sub-catchment

There are two watercourses within the boundary of the proposed wind farm site that are part of the Blackwater[Kilmacow]_SC_010 sub-catchment. This sub-catchment is shown in Figure 6. These are the Ballyknockbeg stream which runs along the western red line boundary of the proposed Ballyfasy Wind Farm site. This stream flows into the Ballylusky 16 stream, before joining the Blackwater [Kilmacow] River at Mullinvat. The other watercourse is the Smartcastle stream which rises on the site and flows directly south before eventually joining the tidal reaches of the Blackwater [Kilmacow] River just upstream of its confluence with the River Suir estuary.

There is no suitable habitat for Freshwater Pearl Mussels in either the Ballyknockbeg stream or Smartcastle stream on the site. These watercourses are too small, and do not have suitable gradient, to support this species. Both of these watercourses were surveyed up to 1km downstream of the proposed wind farm site boundary. It was again concluded that the habitats in these watercourses were unsuitable and no mussels were found during the survey. It is considered that these watercourses have no potential for this species within the Phase 1 survey area.

The Smartcastle stream was followed south to >5km downstream of the proposed wind farm site and again the presence of mussels was ruled out. This is a highly modified catchment that has been subjected to drainage works in the past. Water quality was also considered to be unsatisfactory with heavy siltation and growths or filamentous algae recorded. It is considered highly unlikely that mussels

are present in this watercourse. Similarly, the Ballyknockbeg stream was followed downstream as far as Mullinvat and was not considered to have any potential for mussels.

There are no Freshwater Pearl Mussel records from the Smartscastle (Stream) or Ballyknockbeg rivers. There is a single historical Freshwater Pearl Mussel record from the River Blackwater [Kilmacow] reported in Moorkens *et al* (1992). However, the species is now likely to be extinct in this catchment. Mussels have been confirmed absent in the areas surveyed within 1km of the wind farm site boundary. It was also considered very unlikely that mussels were present in areas further downstream. The general survey covered areas to >5km downstream and habitats were not considered to be suitable for this species. This is a highly modified catchment and extensive river engineering works have been undertaken in the past. Also, water quality is unsatisfactory.

The presence of Freshwater Pearl Mussels in the zone of influence of the proposed wind farm development is again ruled out.

Table 2 Evaluation of the watercourses affected by the proposed Ballyfasy Wind Farm site in relation to Freshwater Pearl Mussels.

Sub-catchment	River	Tributary	FPM Records	Suitable habitats within 1km	Suitable habitats within 5km	FPMs recorded
Nore_SC_130	Arrigle	Smithstown15	No	No	No	No
	Arrigle		No	No	No	No
Nore_SC_140	Glenmore River	Parkstown Lower*	No	No	No	No
	Glenmore River	Mullennahone	No	No	No	No
	Glenmore River		No	No	No	No
Blackwater[Kilmacow]_SC_010	Blackwater [Kilmacow]	Smartscastle (Stream)	No	No	No	No
		Ballyknockbeg	No	No	No	No

Table 3 Freshwater Pearl Mussel habitat assessments at the 14 selected sites.

Site Number	River	Description	Evaluation
A1	Arrigle	This site was located at a footbridge. The river at this location is highly modified as a result of forestry and agricultural activities. The river here is very low gradient, low flow, and is featureless. The substrate is heavily silted.	No potential mussel habitat present, presence of mussels is ruled out.
A2	Arrigle	The river at this site is larger than at Site A1 and has a rock/cobble substrate. This section has been drained and channelised in the past, with rock armouring present downstream of the bridge. Upstream of the bridge the banks are high with some bank erosion. There have been impacts as a result of encroachments by one-off house developments.	No potential mussel habitat present, presence of mussels is ruled out.
A3	Arrigle	This site was located at the R704 bridge. This section has been drained and channelised in the past. There was a lot of silt in the river at the time of the survey, and some of this appeared to	No potential mussel habitat present, presence of mussels is ruled out.

Site Number	River	Description	Evaluation
		have been recently deposited. The most likely source was considered to be nearby agricultural activities. Extensive macrophyte growth was also present.	
A4	Arrigle	The river is also modified in this area with evidence of historical flood works. The river was a similar size to Site A2 but the banks were lower. The river channel was impacted by agricultural pressures. The substrate was again comprised of rock/cobble substrate. However, it was rated as being unsuitable for mussels.	No potential mussel habitat present, presence of mussels is ruled out.
A5	Arrigle	This stretch of river was considered to have potentially suitable habitat for FPMs. The gradient was moderate, the substrate was dominated by cobbles, biological water quality was good, and the channel was unmodified with well development riparian woodland.	The areas around the bridge were checked and no mussels or dead shells were found. This was a rapid survey but this area was previously surveyed by Moorkens *et al* (1992) and no mussels were found.
A6	Arrigle	This stretch of river was accessed at a ford. This stretch had similar habitat to Site A5 and was considered to provide potential mussel habitat.	A 100m stretch at the ford was checked and no mussels or dead shells were found. This was a rapid survey but this area was previously surveyed by Moorkens *et al* (1992) and no mussels were found.
A7	Arrigle	This site was located at Ballyduff mill. This stetch of the river was again considered to be physically suitable for mussels. The river has a moderate gradient, stone/cobble substrate, and overhanging trees at this site. Water quality as considered to be satisfactory.	A 100m upstream form the bridge was checked with a rapid survey and no mussels or dead shells were found. This area was previously surveyed by Moorkens *et al* (1992) and no mussels were found.
G1	Glenmore River	This river was examined at Glenmore and upstream and is not considered to provide any potential habitat for Freshwater Pearl Mussels. Even at Glenmore this is a relatively small watercourse. The presence of mussel habitat upstream from here is ruled out.	No potential mussel habitat present, presence of mussels is ruled out. No real hydrological connectively also between the proposed wind farm site and this catchment.
S1	Smartscastle (Stream)	This site is too small and does not have any physically suitable mussel habitat present.	No potential mussel habitat present, presence of mussels is ruled out.
S2	Smartscastle (Stream)	This stream has some physically suitable FPM habitat and the gradient and substrates are somewhat suitable. However, there is evidence of historical river modification and the site was heavily silt with excessive algae growth. A 100m section of the river was checked here and	Presence of mussels is ruled out.

Site Number	River	Description	Evaluation
		the presence of mussels was ruled out.	
S3	Smartscastle (Stream)	This site has been channelised and dredged in the past. This limits it suitability for mussels to be present. The site has some borderline physically suitable mussel habitat but there are no mussels here.	Not mussel habitat, previous drainage works and water quality issues, presence of mussels is ruled out.
S4	Smartscastle (Stream)	This section of the river has been subjected to drainage works in the past and the river bed was lowered with a rock cut. This was likely to have been done to drain the former Lough Cullin. Water quality was poor at this site with visible eutrophication.	No potential mussel habitat present, presence of mussels is ruled out.
B1	Ballyknockbeg	The Ballyknockbeg is a small stream and does not have any mussel potential.	No potential mussel habitat present, presence of mussels is ruled out.
B2	Ballyknockbeg	The Ballyknockbeg is a small stream and does not have any mussel potential.	No potential mussel habitat present, presence of mussels is ruled out.

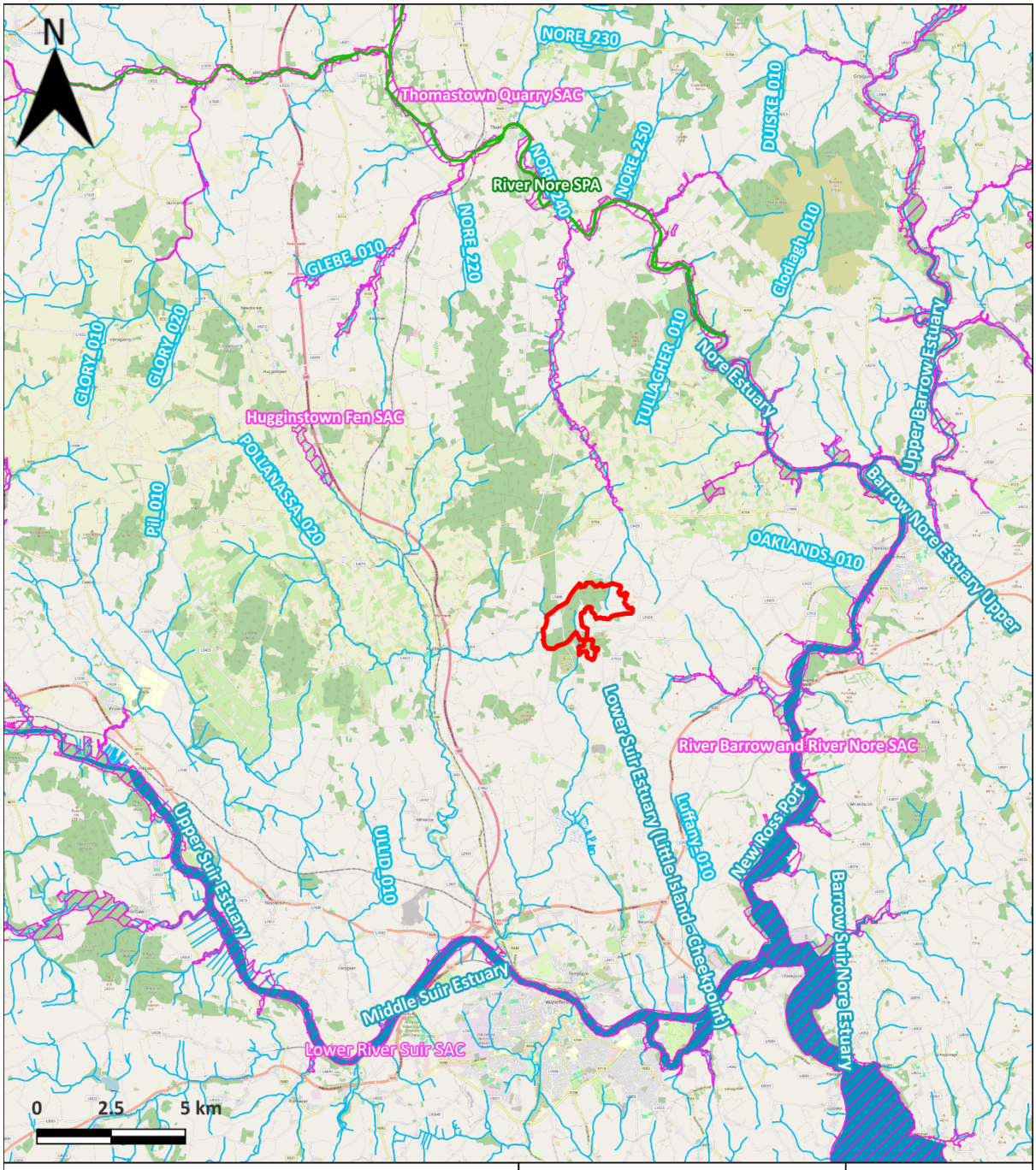


Figure 4 Location of Natura 2000 sites in relation to the proposed Ballyfasy Wind Farm site.

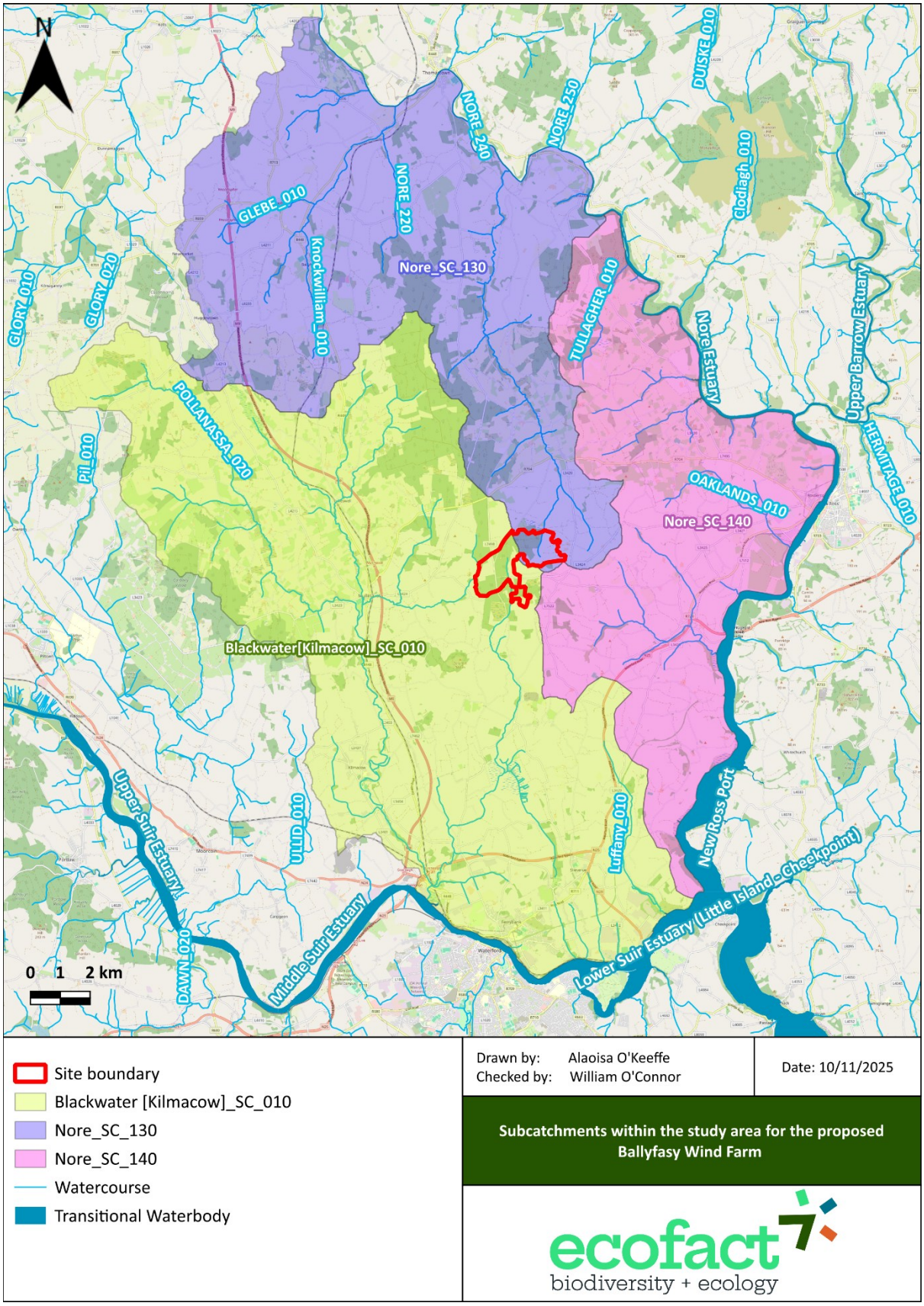


Figure 5 Sub-catchments affected by the proposed Ballyfasy Wind Farm site.

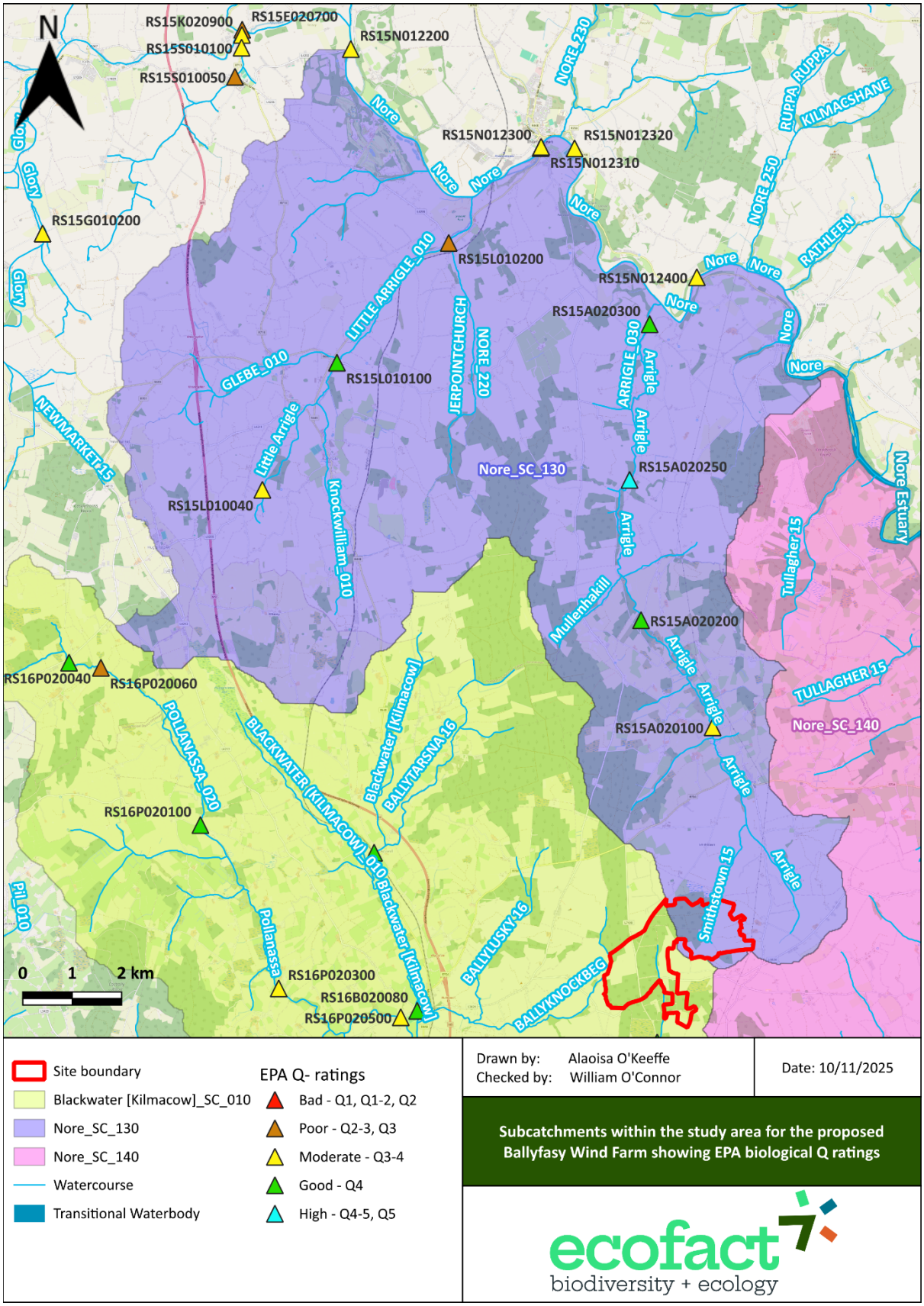


Figure 6 Location of the Nore_SC_130 sub-catchment in relation to the proposed Ballyfasy Wind Farm site.

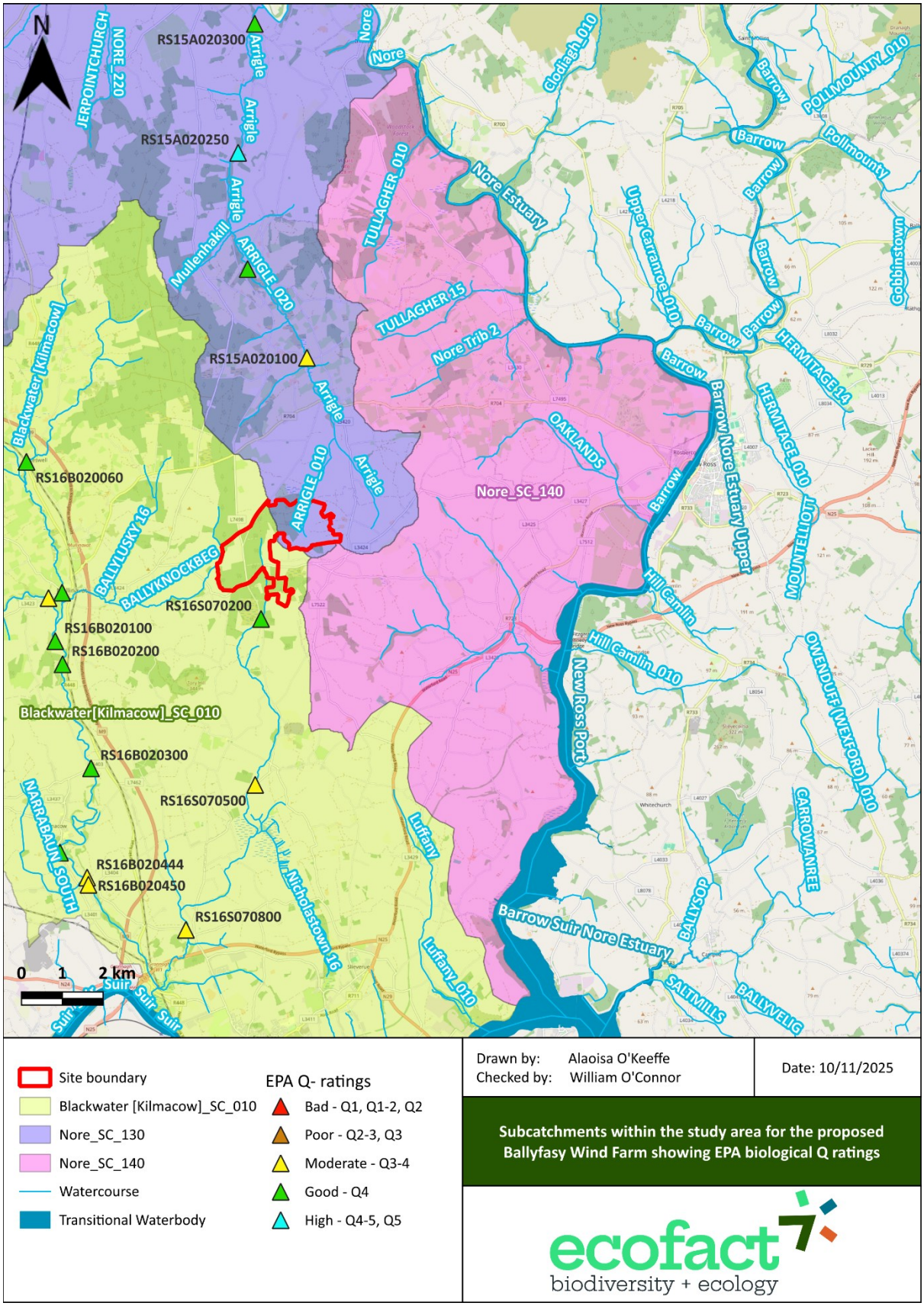


Figure 7 Location of the Nore_SC_140 sub-catchment in relation to the proposed Ballyfasy Wind Farm site.

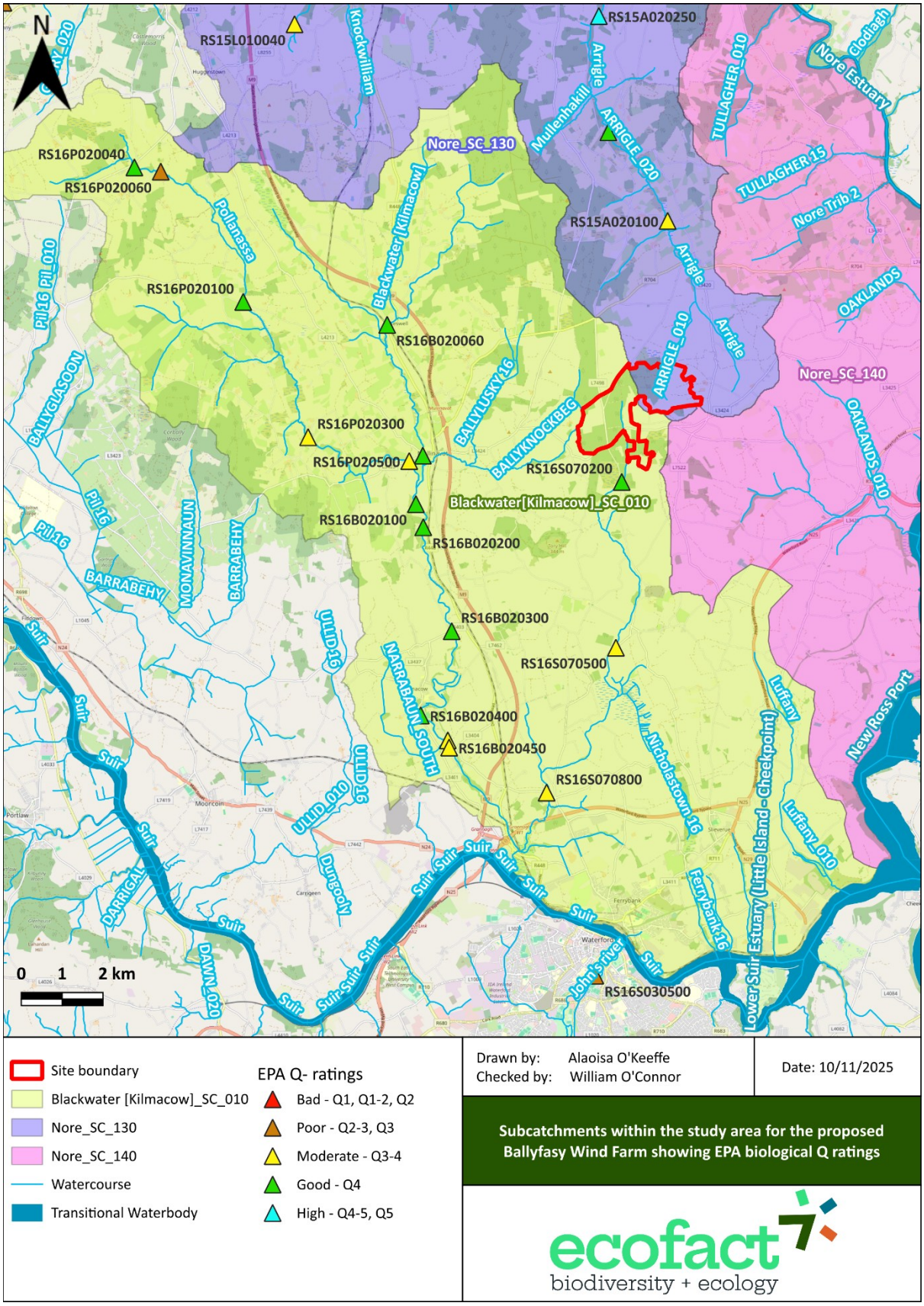


Figure 8 Location of the Blackwater [Kilmacow]_SC_010 sub-catchment in relation to the proposed Ballyfasy Wind Farm site.

4. SUMMARY AND CONCLUSIONS

The purpose of the survey was to determine whether Freshwater Pearl Mussels are present within the zone of influence of the proposed wind farm site. The current assessment included a detailed desk study followed by a field survey. The surveys were completed on all the watercourses on and draining from the proposed Ballyfasy wind farm site.

The desk study included a review of all existing records, NPWS designations, and relevant legislation pertaining to this protected species. A detailed assessment of watercourses on the site and to within 1km downstream of the site. A general survey was then completed on all the channels between a 1km and 5km radius of the proposed wind farm site. Further surveys were also completed at locations further downstream. The level of surveys completed was adequate to provide a full evaluation of Freshwater Pearl Mussels in the receiving waters of the proposed wind farm. The survey was conducted in September 2024 under optimal conditions.

The proposed wind farm is upstream of the River Barrow and River Nore SAC and Lower River Suir SAC which are both designated for Freshwater Pearl Mussel [1029]. Three sub-catchments were identified as relevant: Nore_SC_130, Nore_SC_140, and Blackwater[Kilmacow]_SC_010.

There are no records of Freshwater Pearl Mussels in the Nore_SC_130 sub-catchment, which includes the River Arrigle. Field surveys confirmed their absence within 1 km of the wind farm boundary, and no evidence such as dead shells was detected during spot checks further downstream. It was considered unlikely that mussels were present in the River Arrigle. No evidence of mussels or dead shells were recorded during the spot checks completed further downstream.

The River Nore main channel downstream of the River Arrigle confluence is not within the main known distribution of Freshwater Pearl Mussels in the River Nore.

In the Nore_SC_140 sub-catchment, the proposed development overlaps only marginally with this catchment area based on the GIS mapping completed for the current report. There are no existing records of Freshwater Pearl Mussels in this sub-catchment. Inspections of watercourses, including the Parkstown Lower and Mullennahone streams, and the Glenmore River, confirmed the unlikely presence of mussels. Furthermore, there is little likelihood that any drainage from the development site would impact watercourses in this area.

Within the Blackwater[Kilmacow]_SC_010 sub-catchment, two streams (Ballyknockbeg and Smartcastle) drain the proposed wind farm site. There are no existing records of Freshwater Pearl Mussels in this sub-catchment. Surveys conducted within 1 km of the site boundary confirmed their absence, and no evidence of mussels was found during downstream inspections.

It is concluded that Freshwater Pearl Mussels are likely to be absent from all three sub-catchments potentially affected by the proposed Ballyfasey Wind Farm. None of the watercourses draining the proposed wind farm site provide suitable habitat for the species, and their presence was ruled out in all areas surveyed. The River Nore channel downstream of the Arrigle confluence is not considered to be within the zone of influence of the proposed development, assuming effective water-quality protection and sediment-control mitigation measures are implemented. Mitigation required to protect Freshwater Pearl Mussels will need to comply with the Atkinson *et al*. (2024) guidelines.

PLATES



Plate 1 Coniferous plantation on the proposed wind farm site.



Plate 2 The upper reaches of the Smartcastle Stream within the proposed wind farm site.



Plate 3 The upper reaches of the Smartcastle Stream at Ballincrea upper.



Plate 4 The middle reaches of the Smartcastle Stream upstream of Gaulsmills.



Plate 5 The River Arrigle at the R704 bridge.



Plate 6 The middle reaches of the River Arrigle.

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