March 2025

Stage 1: Appropriate Assessment - Screening and Stage 2: Natura Impact Statement

Proposed Solar PV Farm & Battery Storage at Mullycagh, Co. Wicklow

On behalf of

Wicklow Renewables Ltd

MALONE O'REGAN ENVIRONMENTAL

Form ES - 04

MALONE O'REGAN ENVIRONMENTAL

Ground Floor – Unit 3
Bracken Business Park
Bracken Road, Sandyford
Dublin 18, D18 V32Y
Tel: +353- 1- 567 76 55
Email: enviro@mores.ie

Title: Stage 1: Appropriate Assessment - Screening and Stage 2: Natura Impact Statement, Proposed Solar PV Farm & Battery Storage at Mullycagh, Co. Wicklow, Wicklow Renewables Ltd

Job Number: E2091

Prepared By: Sophie Keating **Signed:** Sophie Keating

Checked By: Amelia Keane **Signed:** Amelia Keane

Approved By: Kathryn Broderick **Signed:** K. Broderick.

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
01	25/03/25	NIS Report	Final	SK	AK	KB

Stage 1: Appropriate Assessment - Screening and Stage 2: Natura Impact Statement

Proposed Solar PV Farm & Battery Storage at Mullycagh, Co. Wicklow

Wicklow Renewables Ltd

Contents

FIGURES

TABLES

APPENDICES

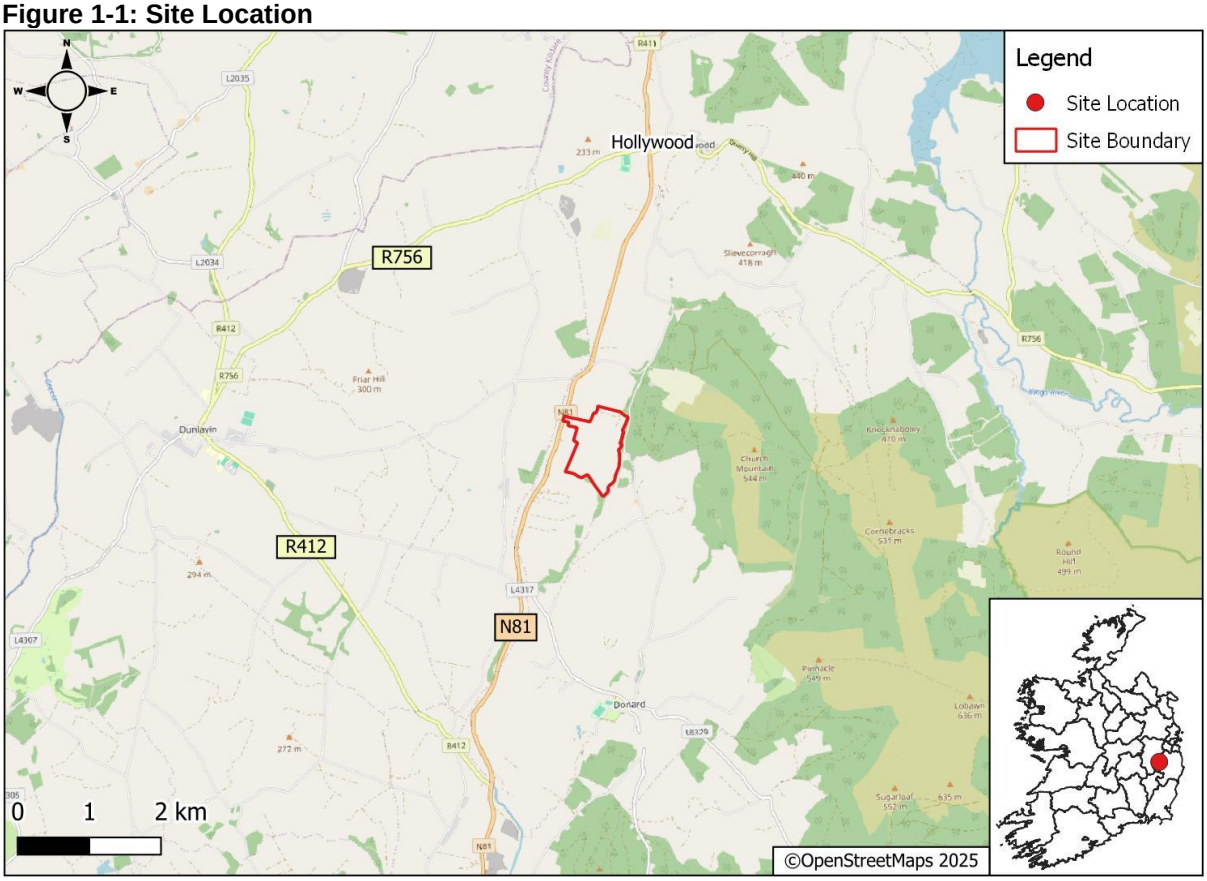
1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') have been commissioned by Wicklow Renewables Ltd. ('the Applicant') to undertake an Appropriate Assessment to assess the likely significant effects, if any, with respect to the construction and operational phase of a proposed solar photovoltaic ('PV') farm, Battery Energy Storage System ('BESS'), an onsite 38kV substation along with all associated works ('the Proposed Development') on nearby sites with European conservation designations (i.e., Natura 2000 sites).

The Proposed Development will be located on a site that is circa ('ca.') 65.4 hectares ('ha') in size and is located within the townland of Mullycagh Upper, Co. Wicklow (OS Reference ITM 692668 701336), ca. 13.5km southwest of Blessington.

For the purposes of this report, the area of the Proposed Development will be referred to as the 'Site' with the location shown in shown in Figure 1-1.

Figure 1-1: Site Location



This report has been prepared to inform the Planning Authority with regard to Stage 1 (Screening) and Stage 2 (Appropriate Assessment) of the Proposed Development through the research and interpretation of best scientific, geographic and engineering knowledge and in view of the conservation objectives of the surrounding European sites. This report seeks to determine whether the Proposed Development will, on its own or in combination with other plans / projects have a significant effect on European sites within a defined zone of influence of the Site.

On completion of the Appropriate Assessment Screening Report, it was found necessary to progress to a Stage 2 of the Appropriate Assessment process and prepare a Natura Impact Statement ('NIS') to assess the effects on the integrity of European sites.

1.1 Statement of Authority

This report was reviewed and approved by Ms. Kathryn Broderick, Principal Consultant - Ecologist. Kathryn has over 8 years of experience working in the ecological consultancy sector. As part of her role, Kathryn is required to undertake habitat surveys and appraisals as well as specialist-protected species surveys in support of Ecological Impact Assessments and Appropriate Assessments. Kathryn has also completed a diploma in Environmental Law and Planning, which had a focus on Environmental Impact Assessments ('EIA') and Appropriate Assessments ('AA') which has provided her with a comprehensive understanding of the legal context and requirements of these types of assessments.

1.2 Regulatory Context

The following guidance documents were adhered to for the preparation of this NIS report:

- Office of Public Relations ('OPR') Practice Note PN01, Appropriate Assessment for Screening for Development Management, The Office of the Planning Regulator [1];
- 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, European Commission [2];
- Guidelines for Ecological Impact Assessment in the UK and Ireland, Chartered Institute of Ecology and Environmental Management [3];
- Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC [4];
- Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities, DoEGLH [5]; and,
- Appropriate Assessment under Article 6 of the Habitats Directive; Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10, DoEGLH [6].

This NIS was prepared in accordance with and in compliance with the following legislation:

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna better known as "The Habitats Directive". This provides the framework for the legal protection of habitats and species of European importance. Articles 3 to 9 provide the legislative means to protect habitats and species of community interest through the establishment and conservation of an EU-wide network of sites known as Natura 2000. The Habitats Directive was transposed into Irish law by the Planning and Development Act 2000 (as amended) and the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 / 2011) (as amended) [7].

For completeness, the Planning and Development Act 2000 (as amended) states "European site" means:

a. A candidate site of Community Importance ('cSCI');
b. A site of Community Importance ('SCI');
c. A Special Area of Conservation ('SAC');
d. A candidate Special Area of Conservation ('cSAC'); or,
e. A Special Protection Area ('SPA').

These are Special Areas of Conservation ('SACs') designated under the Habitats Directive and Special Protection Areas ('SPAs') designated under the Conservation of Wild Birds Directive (79/409/EEC as amended 2009/149/EC) (better known as "The Birds Directive"). The Birds Directive was also transposed into Irish law through the Planning and Development Act 2000 (as amended) and S.I 477 / 2011 [7].

Articles 6(3) and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect European sites (Annex 1.1). Article 6(3) establishes the requirement for Appropriate Assessment.

> *"Any plan or project not directly connected with or necessary to the management of the [Natura 2000] site but likely to have a significant effect thereon, either individually or in combination with other plans and projects, shall be subjected to appropriate assessment of its implications for the site in view of the site's conservation objectives. In light of the conclusions of the assessment of the implication for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public"*

The Habitats Directive promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the project should aim to avoid any negative impacts on European sites by identifying possible impacts early in the planning stage and designing the project in order to avoid such impacts. Second, mitigation measures should be applied, if necessary, during the Appropriate Assessment (AA) process to the point, where no adverse impacts on the site(s) remain. If the project is still likely to result in adverse effects and no further practicable mitigation is possible, it is rejected. If no alternative solutions are identified and the project is required for imperative reasons of overriding public interest ('IROPI' test) under Article 6 (4) of the Habitats Directive, then compensation measures are required for any remaining adverse effect.

1.3 Stages of Appropriate Assessment

There are four distinct stages to undertaking an AA as outlined in current European Union ('EU') and Department of Environment, Heritage and Local Government ('DoEHLG') guidance:

Stage 1: Screening

This process identifies the potential impacts of a plan or project on a Natura site, either alone or in combination with other plans and projects and considers whether these impacts are likely to be significant. If potentially significant impacts are identified, the plan or project cannot be screened out and must proceed to Stage 2.

Stage 2: Appropriate Assessment

Where potentially significant impacts are identified, an assessment of the potential mitigation of those impacts is required; this stage considers the appropriateness of those mitigation measures in the context of maintaining the integrity of the Natura 2000 sites. If potential significant impacts cannot be eliminated with appropriate mitigation measures, the assessment must proceed to Stage 3.

Stage 3: Assessment of Alternatives Solutions

This process examines alternative ways to achieve the objectives of the plan or project that avoid adverse impacts on the integrity of the Natura 2000 site if mitigation measures are deemed insufficient.

Stage 4: Imperative Reasons of Overriding Public Interest ('IROPI')

Assessment where no alternative solution exists for a plan or project and where adverse impacts remain. This includes an assessment of compensatory measures, which in the case of projects or plans, can be considered necessary for IROPI.

2 METHODOLOGY

2.1 Determining Zone of Influence

The starting point for this assessment was to determine the Zone of Influence. The Zone of Influence comprises the area in which the Proposed Development may potentially affect the conservation objectives (or qualifying interests) of a European site.

Guidance in Appropriate Assessment of plans and projects in Ireland notes that a distance of 15km is recommended for the identification of relevant European sites [5]. However, guidance from the National Park and Wildlife Services ('NPWS') recommends that the distance should 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 (cumulative) [6]. For some projects, the distance could be greater than 15km and in some cases, less than 100m.

The definition of the zone of influence for the proposed works includes evaluating the following:

- Identification of the European sites that are situated within, in close vicinity or downstream within the zone of influence of the Proposed Development;
- Identification of the designated habitats and species and Conservation Objectives for the identified European sites;
- Identification of the environmental conditions that stabilise and increase the qualifying interests of the European sites towards favourable conservation status;
- Identification of the threats / impacts – actual or potential that could negatively impact the conservation objectives for the European sites;
- Identifying the activities of the proposed works that could give rise to significant adverse impacts; and,
- Identification of other plans or projects for which in-combination impacts would likely have significant adverse effects.

2.1.1 Source-Pathway-Receptor Model

European sites are only at risk from significant effects where a source-pathway-receptor link exists between a Proposed Development and a European site. This can take the form of a direct impact (e.g., where the Proposed Development is located within / in close vicinity to the boundary of a European site) or an indirect impact where impacts outside of the European site but affect ecological receptors within (e.g., impacts to water quality which can affect estuarine habitats at a distance from the impact source).

The likely effects of the Proposed Development on any European site have been assessed using a source-pathway-receptor model. A source-pathway-receptor model is a standard tool used in environmental assessment [8] [9]. The model comprises of:

- A source: any potential impacts from the Proposed Development, e.g., the runoff of sediment / construction pollution;
- A pathway: the means or route by which a source can affect the ecological receptor; and,
- A receptor: the qualifying interests and / or special conservation interests of the European sites.

In order to establish the Zone of Influence of the Proposed Development works, the likely key environmental impacts / changes associated with the Proposed Development were determined having regard to the project characteristics set out in Section 3.3 of this report. Zone of Influence for various potential impact pathways are discussed in Section 4.1.

2.2 Desk Based Review

A desk-based review of information sources was completed, which included the following sources of information:

- Review of aerial maps of the Site and surrounding area;
- The National Parks and Wildlife Service ('NPWS') website was consulted with regard to the most up to date detail on conservation objectives for the European sites relevant to this assessment [10];
- The Wicklow County Council ('WCC') Planning Portal to obtain details about existing / proposed developments in the vicinity of the Site [11];
- The Department of Housing, Local Government and Heritage's planning portal – the National Planning Application Database to obtain details about existing / proposed developments in the vicinity of the Site [12];
- BirdWatch Ireland – The Irish Wetland Bird Survey ('I-WeBS') data, which is coordinated by BirdWatch Ireland and under contract to the NPWS, was reviewed with regard to wintering waterbird population within the vicinity of the Site [13];
- The National Biodiversity Data Centre ('NBDC') website was consulted with regard to species distributions [14]; and,
- The Environmental Protection Agency ('EPA') Maps website was consulted to obtain details about watercourses in the vicinity of the Site [15].

2.2.1 I-WeBS Data Request

As mentioned above, I-WeBS data was reviewed in order to understand the potential assemblages of wintering bird populations that tend to occur within the vicinity of the Site.

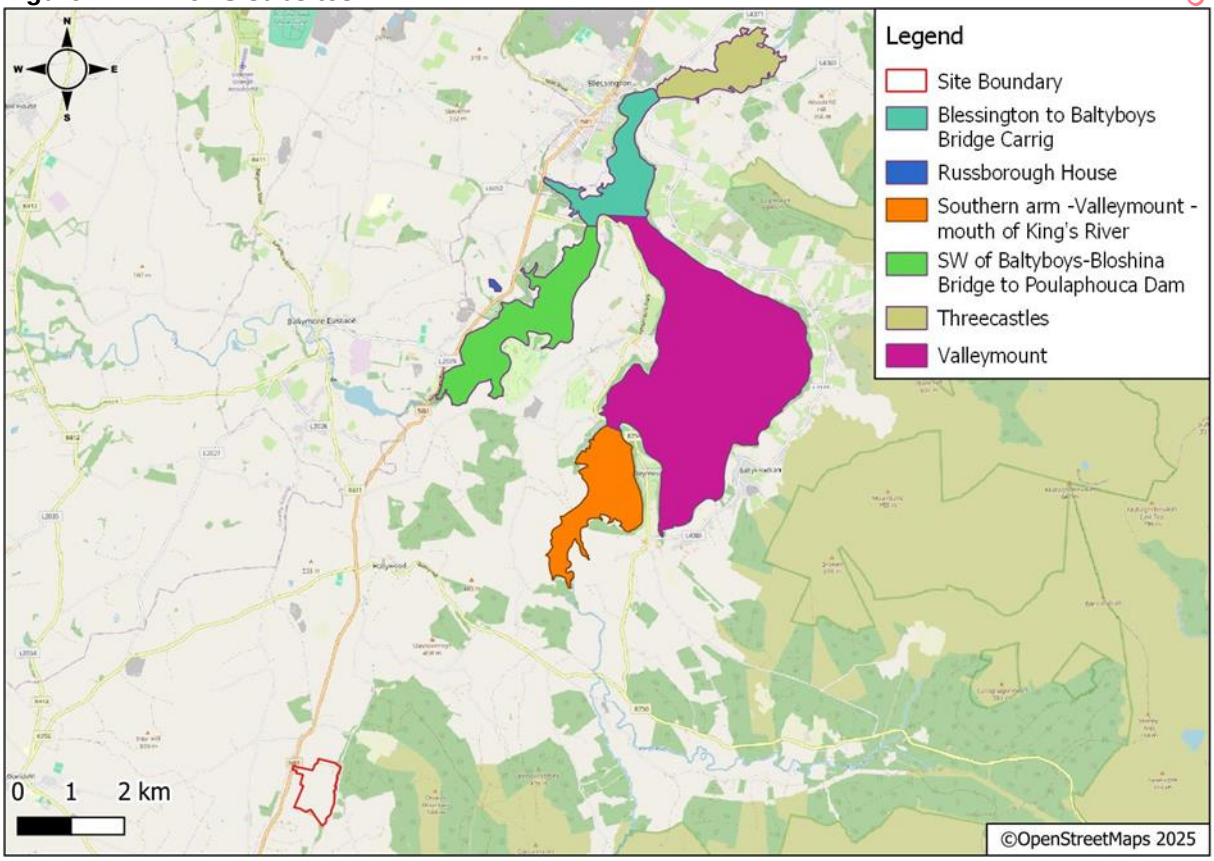
As part of this review, a data request was submitted to the I-WeBS on the 15th July 2024. The data request was for all available data from the I-WeBS sites within close proximity to the Proposed Development. This included seven subsites within the Poulaphouca Reservoir (Site Code 0T198), as listed in Table 2-1 below. See Figure 2-1 for the location of the subsites in relation to the Site.

Table 2-1: I-WeBS Data Request

Site Name	Site Code	Distance (km) from the Site	Direction from the Site
I-WeBS Sites			
Poulaphouca Reservoir	0T198	5.4km	NE
I-WeBS Sub Sites			
Southern arm -Valleymount - mouth of King's Rive	0T192	5.4km	NE
Valleymount	0T196	7.6km	NE
SW of Baltyboys-Bloshina Bridge to Poulaphouca Dam	0T193	7.1km	NE
Russborough House	0T198	9.5km	NE
Blessington to Baltyboys Bridge Carrig	0T191	11.2km	NE
Threecastles	0T197	13.9km	NE

Site Name	Site Code	Distance (km) from the Site	Direction from the Site
Area NE of Blessington Bridge	0T190	Location not provided on IWeBS website.	Location not provided on IWeBS website.

Figure 2-1: I-WeBS subsites



2.3 Field Based Studies

2.3.1 Habitat Survey

An initial Site walkover was undertaken on the 20th April 2023 by a suitably qualified and experienced MOR Environmental ecologist. This survey aimed to assess the extent and quality of habitats present on the Site and to identify any potential ecological receptors. An updated walkover was undertaken on the 21st November 2024.

The habitat survey was undertaken for the Site utilising the Heritage Council's – '*A Guide to Habitats in Ireland'* [16].This is the standard habitat classification system used in Ireland and includes both a desk-based and field-based assessment. The surveys were also undertaken utilising the Irish Ramsar Wetlands Committee's *'Irish Wetland Types - an identification guide and field survey manual'* [17].

The assessments were extended to also identify the potential for these habitats to support other features of nature conservation importance, such as species afforded legal protection under either Irish or European legislation.

2.3.2 Otter Survey

The survey aimed to identify and examine areas where otter might occur by noting any evidence of otter observed. Evidence of otter searched for included:

- Holts (features log piles, caves and cavities);
- Slides (flattened areas of mud or vegetation);
- Paw prints;
- Evidence of foraging (usually in the form of feeding remains such as fish scales and shellfish); and,
- Spraints (isolated otter droppings).

The field survey of the Site was conducted in line with the following relevant guidance for otter:

- Scottish Natural Heritage ('SNH'), 'Technical Advice Note #2: Otter Surveys' [18];
- DoAHG, 'National Otter Survey of Ireland 2010 / 12' [19]; and,
- National Road Authority ('NRA'), now Transport Infrastructure Ireland ('TII'), 'Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes,' [20].

2.3.3 Bird Survey

The Site was assessed for its potential to support important assemblages of birds of rare or notable species, as well as designated bird species. Surveys aimed to identify and examine the suitability of the Site for potential wintering and breeding birds. Any bird activity onsite and potential nesting habitats were noted.

2.3.3.1 Breeding Bird Surveys

Breeding bird surveys were undertaken at the Site in order to determine whether or not the Site is utilised by breeding bird species. Furthermore, the Site was assessed for its potential to provide suitable nesting habitat for breeding birds or to support important assemblages of birds of rare or notable species.

Breeding bird surveys were undertaken during the 2023 breeding bird seasons. These surveys were conducted on 27th July and 24th August 2023. The breeding bird surveys were conducted in line with the methodology described in:

- British Trust for Ornithology ('BTO') - *A Field Guide to Monitoring Nests* [21]; and,
- Common Bird Census in Bird Monitoring Methods [22].

In order to establish whether any breeding bird species were utilising the Site, particularly the hedgerows and trees located within the Site, transects were walked along all of the field boundaries located within the Site (Figure 2-2). All birds within the survey areas were recorded.

All birds were recorded through sight and sound. Optical equipment was used, including binoculars, in order to minimise disturbance to potentially breeding birds. The trees and woodland habitats onsite were examined for the presence of nests. During the survey, the behavioural activity of the recorded birds was noted using the BTO breeding status codes [23]. Birds that displayed non-territorial behaviours were recorded as well (i.e., birds that were flying over the Site, birds that were foraging and not calling, birds that were loafing).

Therefore, birds were classified as non-breeding, possibly breeding and confirmed breeding based on the behaviours exhibited. The criteria for each classification are described below:

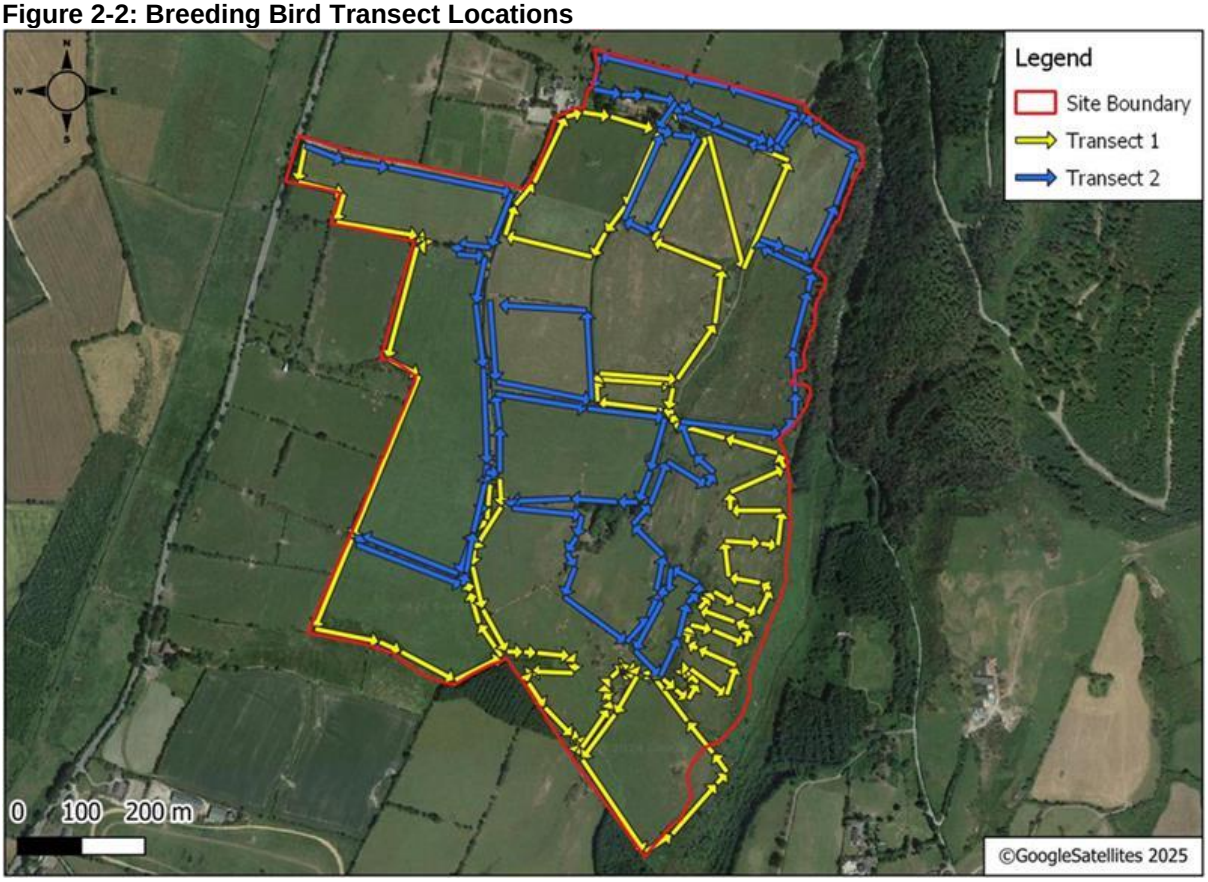
- Non-breeding – Birds that were flying over the Site, birds that were foraging and not calling, birds that were loafing;
- Possible Breeding – Birds observed in suitable nesting habitat and displaying either territorial and / or courtship behaviours, nest building behaviours or observed visiting a possible nest; and,
- Confirmed Breeding – Birds observed either on nest or carrying faecal sac or food, sighting of a nest with eggs / chicks, used nests, eggshells or recently fledged young.

The survey dates, times and weather conditions for both dates are described in Table 2-2.

Table 2-2: Bird Survey Dates, Times and Weather Conditions

Visit No.	Date	Time	Weather Conditions
Visit 1	27/07/2023	08:30-14:00	Cloud cover 100%, temperature 17ºC -21ºC, light breeze, infrequent scattered light showers.
Visit 2	24/08/2023	07:45-12:15	Cloud cover 0-33%, temperature 10ºC - 17ºC, wind light breeze, no rain.

Figure 2-2: Breeding Bird Transect Locations



2.3.3.2 Wintering Bird Surveys

Given the fact that the Site is located ca. 5.5km from the Poulaphouca SPA, it was deemed necessary to undertake winter bird surveys in order to determine whether or not the Site is suitable for designated wintering bird species.

The winter bird surveys were undertaken at the Site during the 2023/2024 winter season. Three wintering bird surveys were undertaken during the 2024 winter bird seasons. The surveys were conducted on the 5th of January 2024, 7th of February 2024 and 5th of March 2024. Surveys were carried out by two suitably qualified and experienced MOR Environmental Ecologists. The date, time and weather conditions of each survey is described in Table 2-3.

Pre-determined vantage points were selected that had sufficient views of habitats that were considered to potentially provide suitable habitat for waterbirds, see Figure 2-3. All species observed utilising the Site were recorded, and their location were marked on the maps.

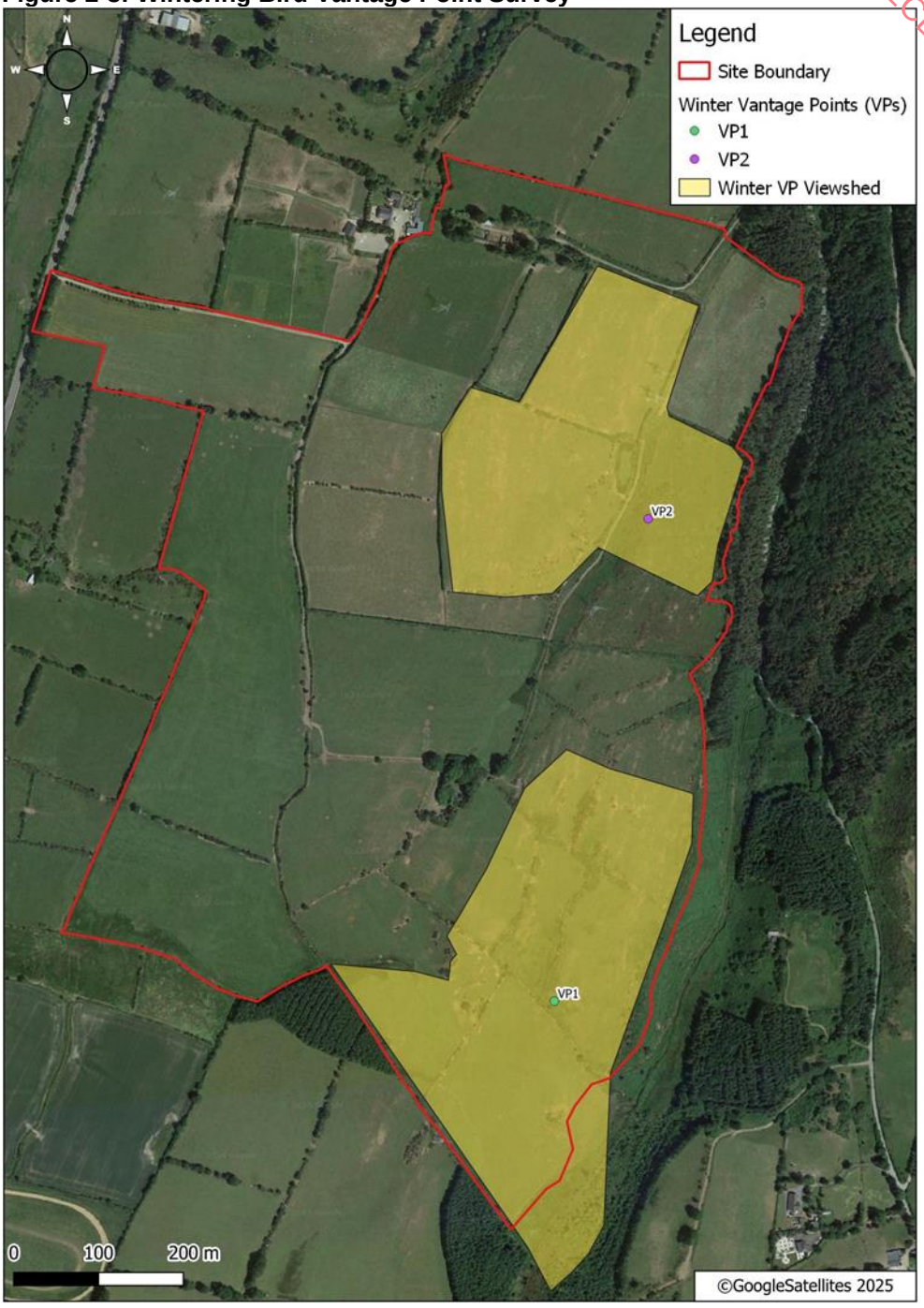
The surveys were undertaken using the Irish Wetland Bird Survey ('I-WeBS') Core Counts methodology. This methodology employs a well-established technique of counting the numbers of waterbirds using the so-called 'look-see' method, whereby the observer surveys the whole of a predefined area [24]. The surveyors monitored the area for three hours in total using optical equipment, binoculars and telescopes. Range finders were also used to identify the height bands at which birds were observed flying over the Site.

All birds within the survey areas were recorded using a standard BTO code. The behaviours and activities of the birds were recorded to identify whether the birds were roosting or feeding within the Site. Any roosts identified within the Site were recorded.

Table 2-3: Bird Survey Dates, Times and Weather Conditions

Visit No.	Date	Time	Weather Conditions
Visit 1	05/01/2024	8:45–11:45	No rain, temperature 2˚C to 4˚C, cloud cover 0-33%, gentle breeze, good visibility.
Visit 2	07/02/2024	8:15-11:15	No rain, temperature 1˚C to 3˚C, cloud cover 33-66%, light breeze, good visibility.
Visit 3	05/03/2024	9:15-12:15	Scattered light showers, temperature 4˚C to 6˚C, cloud cover 0-33%, moderate to gentle breeze, good visibility.

Figure 2-3: Wintering Bird Vantage Point Survey



2.3.4 Invasive Species

The Site was visually assessed for the presence of any noxious / invasive species that are regulated under Regulations 49 and 50 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) [25] such as Japanese knotweed (*Reynoutria japonica*) and Himalayan balsam (*Impatiens glandulifera*). The Site was also assessed for the presence of non-regulated invasive species that have the potential to impact local biodiversity.

2.3.5 Other Species

In addition, as part of the overall ecological assessment for the Site, an assessment was carried out for the potential of the Site to support any other species considered to be of value for biodiversity, including those that were identified as occurring locally by the desktop study.

This information was used as part of the NIS to inform the assessment of potential adverse effects on both Annex I species and habitats identified as part of the study.

2.4 Survey Conditions and Limitations

No survey limitations were encountered.

2.5 GIS Mapping

Geographical Information System ('GIS') is a computer-based information system designed to store, process, and manipulate geographical data. GIS can be used to analyse data and produce habitat mapping. GIS has been used in this report to prepare a baseline habitat map based on the field survey information.

All habitats within the Site have been mapped according to 2023 and 2024 field survey recordings, with their locations and extent uploaded and stored in the GIS as two-dimensional shapes (polygons) or linear shapes habitats like hedgerows or stonewalls. Furthermore, target notes were uploaded to indicate the location of protected / notable species evidence.

2.6 Consultation

In preparation of this planning application, a pre-planning meeting was requested on 17th January 2024 with Wicklow County Council. It was determined that a pre-planning meeting was not required, and pre-planning advice was received from the Council via email on the 25th March 2024 (PP24_02).

Separate consultation was also undertaken with Mr. Patrick Byrne, District Engineer for the Baltinglass Municipal District in April 2024 in terms of the initial layout and access and egress options. All comments raised by the Council were considered in detail and taken into account in the preparation of this application.

3 DESCRIPTION OF THE PROJECT

3.1 Site Context

The Site is located within a predominately rural landscape. The Site is currently accessed via an existing entrance along the N81 national road. This access is currently utilised to access residential properties and farmyard areas.

The Site is predominantly comprised of agricultural grassland, with sections of hedgerows / treelines creating field boundaries within and around the perimeter of the Site. The Site is bordered to the north and south by agricultural grassland and to the west by the N81 followed by agricultural grassland. Hollywood Glen borders the eastern boundary of the Site, followed by agricultural grassland.

Scattered residential properties are located within the vicinity of the Site, with the closest properties located directly adjacent to the northwestern corner.

Figure 3-1: Site Context and Overview

3.2 Watercourses within the Vicinity of the Site

The Site is situated within the Slaney & Wexford Harbour Water Framework Directive ('WFD') Catchment [Catchment_ID: 12] and the Slaney_SC_010 subcatchment [Subcatchment_ID: 12_12] [15].

As per the Environmental Protection Agency ('EPA') maps there are three hydrological features of note within the vicinity of the Site, Kilbaylet Upper Stream, Lower Mullycagh River, Carriglower Stream and Athgreany Stream.

- Kilbaylet_Upper Stream ('Kilbaylet Upper Stream')

The Kilbaylet Upper Stream is located ca. 35m east of the Site. This stream flows in a southeasterly direction and is a tributary of the Lower Mullycagh River. This stream drains into the Lower Mullycagh River ca. 365m downstream of the Site.

- Lower Mullycagh River

The Lower Mullycagh River is located ca. 365m south of the Site and flows in a southeasterly direction. The river is a tributary of the Carrigower River and drains into the Carrigower River ca. 1.7km downstream of the Site. The Carrigower River forms part of the Slaney River Valley Special Area of Conservation ('SAC').

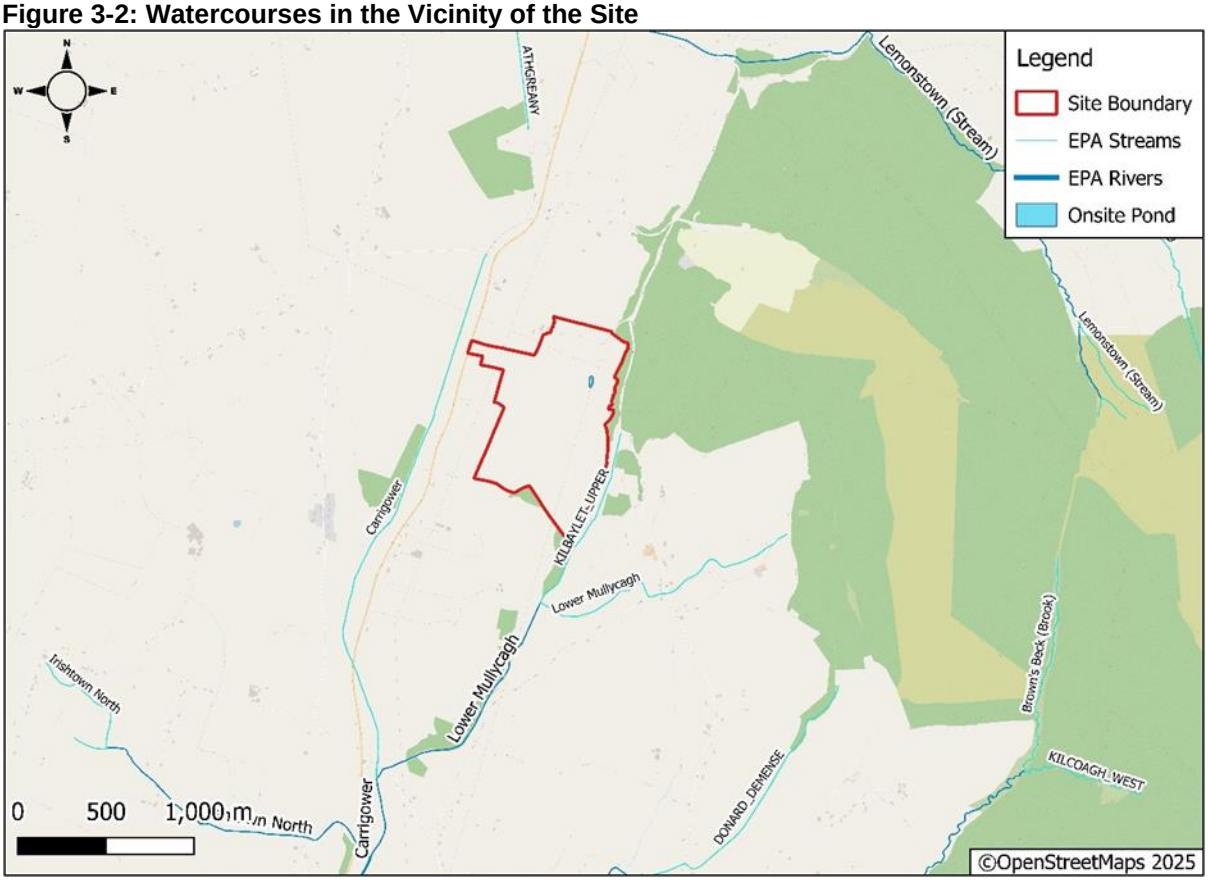
- Carrigower Stream

The Carrigower Stream is located ca. 85m to the west of the Site, at its closest point. This stream flows in a southerly direction and drains into the Carrigower River, ca. 1.7km downstream of the Site.

Under the WFD 2000/60/EC, as amended, the EPA classifies the status and the risk of not achieving good water quality status for all waterbodies in Ireland [26]. According to the WFD 2016-2021 monitoring events, the most up-to-date data at the time of writing this report, the water quality within the waterbodies are considered to be '*good,'* and the status of the waterbodies are considered *'not at risk'* [15].

The location of the key surface water features in the vicinity of the Site is illustrated in Figure 3-2 below.

Figure 3-2: Watercourses in the Vicinity of the Site



Following the Site visit, one artificial pond was located onsite. This artificial pond was not recorded on EPA Maps. However, the pond is known as the Mullycagh Upper Pond according to the '*Wetland Surveys Ireland 2023'* [25]. There is no direct hydrological connection from the pond to any other hydrological features in the area. Please refer to Figure 3-2.

3.2.1 OPW Flood Maps

The Office of Public Works ('OPW') Flood Maps identifies Drainage Districts, Arterial Drainage Schemes and Benefited Areas. Arterial Drainage Schemes were works that were carried out under the Arterial Drainage Act, 1945 to improve land for agriculture and to mitigate flooding. The Benefited land identifies land that was drained as part of the Drainage District with the aim to improve land for agriculture and to mitigate flooding.

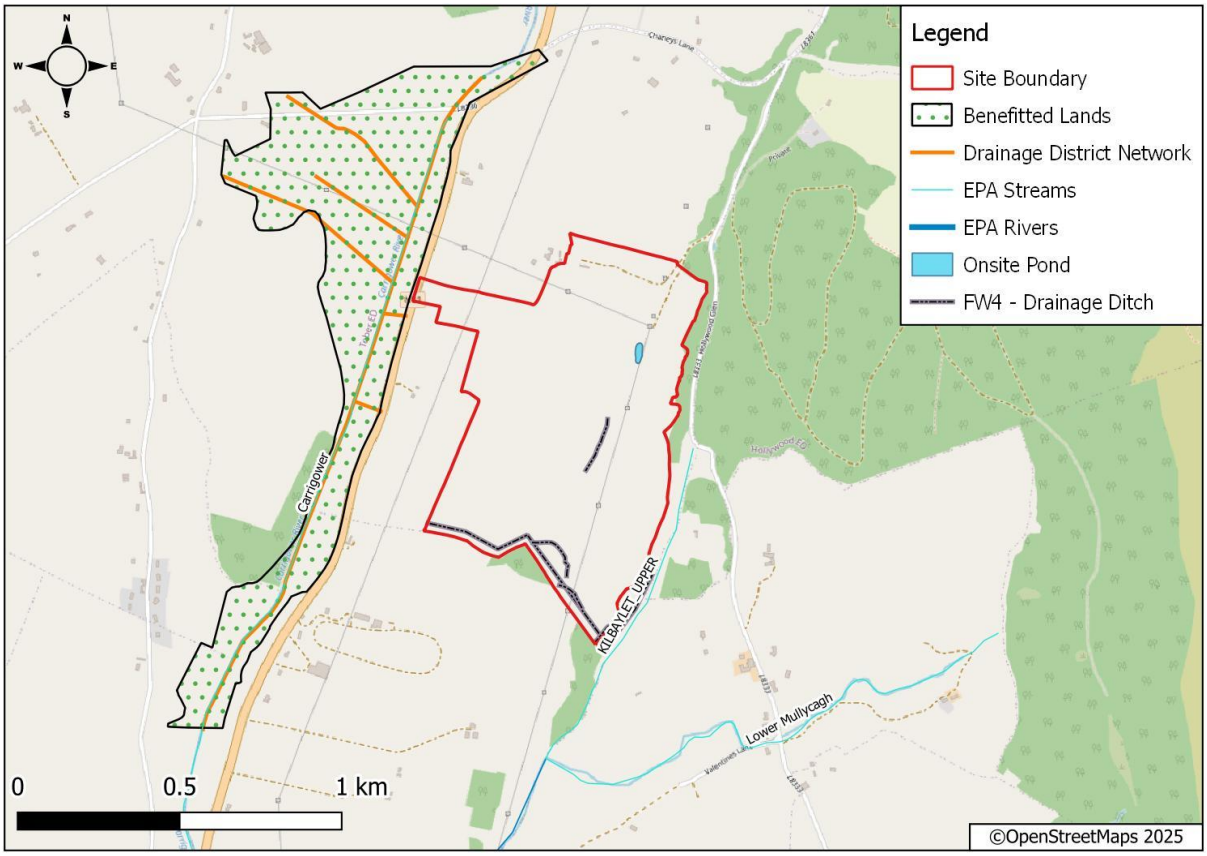
The Site does not form part of the Benefitted Lands Scheme. However, a section of land to the west and north of the Site forms part of the Benefitted Lands Scheme. Additionally, a drainage ditch channel was also identified, under the Carrigower Drainage Ditch Scheme. See Figure 3-3.

3.2.2 Drainage Ditch Network

There are a number of drainage ditches were noted within the Site. These drainage ditches are common as part of agricultural drainage schemes. These ditches were hydrologically connected to the Kilbaylet Upper Stream.

Such drainage regimes are typical features of agricultural lands as they facilitate drainage from the fields during periods of heavy rainfall to reduce flooding. Please refer to Figure 3-3.

Figure 3-3: Drainage Districts



3.3 Description of the Proposed Development

The Proposed Development will involve the construction of associated ancillary development, including:

- Solar PV panels laid out in arrays across the Site;
- A 38kV substation building ((13.8 (l) and 7.4 (w)) and associated compound area, a transformer unit (ca. 5.8m x ca. 8.45m) and associated bund;

- 192 number Battery Energy Storage System units comprising 22 modules (ca. 3.1m x ca.3.1m);
- 6 MV Skid/Power Hubs (ca. 9.45m x ca.2.1m);
- 24 number inverter units (ca. 3m x ca.2.6m);
- Upgrade of 1 No. existing Site entrance;
- 1 No. temporary construction compound;
- Electrical and communications cabling;
- Pole-mounted security cameras;
- Perimeter security fencing (2m high) and security gates;
- Internal access tracks; and,
- All associated ancillary development, landscaping and reinstatement works.

The Applicant is seeking flexibility in terms of the design and siting of various elements of the project (e.g. location of inverters, transformers, internal access tracks and CCTV, etc.), which will be dependent on the detailed design process and commercial / technical considerations at the time of procurement. The Applicant requests that should a grant of permission be forthcoming, a similar condition requiring the finalised design of the solar panels, configuration of the solar array and BESS manufacturer to be confirmed with the Planning Authority prior to the commencement of development be included.

The quantity and location of inverters may vary depending on the number of solar arrays serviced. As flexibility is required for the detailed design process, the Applicant would request a condition, upon grant of permission, requiring the submission of the finalised number, format, dimensions and precise location for the proposed electrical system to the Planning Authority prior to the commencement of development.

The onsite CCTV would be remotely monitored via a 24/7 operational team that would alert all relevant personnel in the event of a break-in or vandalism at the Site. The cameras will only be focused along the fence line and will not be focused on any neighbouring dwellings.

The perimeter fence will be installed to provide security, restrict access and will be deer-proof. The fence will, however, be fitted with small mammal gates, 300mm x 150mm, at approximate points to enable access for wildlife such as rabbits, badgers, and foxes to move freely throughout the landscape. Emergency lighting will only occur as part of the Proposed Development associated with the substation and BESS infrastructure. The proposed Site Layout is illustrated in Appendix A.

3.3.1 Solar PV Panels

The solar panels will be on ground-mounted frames, fixed in place using the pile-driven steel frames. There will be no moving parts.

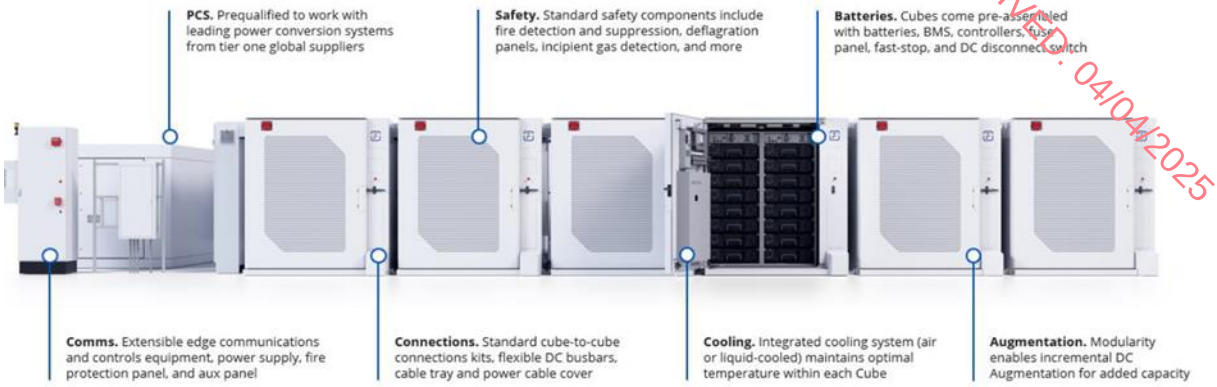
3.3.2 38kV Substation

A 38kV substation is proposed onsite which will be located adjacent to the BESS units.

3.3.3 Battery Storage Energy System

The Proposed Development is to install BESS offered by Fluence Cube. The building block of the Fluence is that the cube contains the battery racks and modules, the cooling system, leaf controls and advanced safety measures. Fluence cube building blocks are arranged into nodes and cores (a collection of nodes behind a single inverter). These cores consist of complete BESS hardware and Edge-to-Cloud controls.

Figure 3-4: Battery Storage Energy System



3.3.4 Battery Chemistry

3.3.4.1 Safety Features

Fluence Gridstack comes equipped with comprehensive safety features throughout the integrated technology stack. The factory-built design brings consistent quality control to your storage system for the highest level of safety. Fast stop, fire detection and suppression system (solid aerosol, optional), gas detection (carbon monoxide), deflagration panels, lockable disconnect switch, open door sensor, gas spring damper and a sliding door lock are incorporated into the cube design.

3.3.4.2 Total System Safety

3.3.4.3 Integrated Safety from Cell to System

The energy storage solutions operate as a single integrated system with safety embedded in every layer of controls and hardware. All systems are built with 24/7 remote monitoring and control capabilities. The Fluence Cube is equipped with comprehensive safety features, including fire detection, fast-stop, deflagration panels, and more.

Fluence systems are designed to meet UL and IEC standards at the cell, module, rack, container, and system levels, including UL1973, UL9540a, IEC62619, IEC61508, NFPA 855 and more.

Ground Fault Detection

Electrical insulation monitoring devices are present on each DC battery bus to detect faults and disconnect the system before a serious problem occurs.

Fast Stop

Fast-stop functionality is automatically triggered by Cube safety features in response to incipient gas or smoke detection and sudden changes in battery operating parameters (via Fluence OS). Manual fast stop can also be performed by operators or first responders.

Fire Alarm System

The fire alarm system includes smoke and temperature detectors (which trigger external horn, strobe light, and F-stop), an external horn and strobe light, and an optional aerosol cannister.

Deflagration Panels

Deflagration panels, compliant with NFPA 68, are designed to direct the force of an explosion upwards in the event of high pressure build up inside the Cube.

Additional Safety Features

Lockable disconnect switch, open door sensor, gas spring damper, and sliding door lock features ensure the Cube can be safely operated by personnel.

3.3.4.4 Fire Suppression System

A fire water suppression system will not be required for an outdoor installation of the BESS units if the units are not installed inside a building, room, areas within buildings or walk-in units.

Although not required by the codes for outdoor BESS installations, each BESS unit will be equipped with a fire suppression system consisting of an aerosol fire extinguisher composed primarily of ultrafine particles of potassium salt and inert has. The BESS unit will be constructed of high-strength steel with a 1hr fire rating, providing additional protection to adjacent equipment and personnel.

The fire suppression system will consist of a smoke detector, a temperature detector, and an aerosol fire extinguishing agent designed for total flood extinguishing. The aerosol agent used will be composed primarily of ultrafine particles of potassium salt and inert gas. Potassium salt is one of the most effective fire-extinguishing agents. It extinguishes fire by impeding the complex chemical chain reaction of combustion or explosion. The combustion chain reaction requires the participation of OH, H and O radicals. The ultrafine potassium salt particles can quickly consume these free radicals, preventing the combustion chain reaction from proceeding.

The fire detection system will work as follows: When either the smoke or the heat detector is activated, a first-stage alarm will be triggered. When both detectors are activated, a second-stage alarm will be triggered. The aerosol generator will be thermally activated, and when the control system detects its feedback, a second-stage alarm will also be triggered, which will immediately send a signal to shut down the respective AC block to allow safe deployment of the emergency services in accordance with the site's emergency plan.

The aerosol will remain inside the battery cabinet. After the fire is extinguished, only a powder of the aerosol will remain in the cabinet.

3.3.5 Security Fencing / Hoarding Fencing

The Site will be secured by palisade fencing and gates. New double gates will be installed at the site entrance that will be kept locked and secured to prevent any unauthorised site access.

3.3.6 Drainage

Surface Water Drainage

The majority of the Proposed Development will not require any alterations to the existing onsite drainage network and no changes will occur to the current drainage or surface water regime. All existing open drains provide effective drainage capacity to the Proposed Development and will be maintained during the project life, with appropriate drain management practices being implemented. The ground conditions within the Proposed Development will be, for the most part, unchanged from their existing condition. The solar photovoltaic panels will be mounted on steel supports driven into the subsoil, with no proposed alterations to the existing drainage patterns within the extension site. Rainwater will continue to percolate naturally into the ground.

The upgraded site entrance which will have an SMA surface finish, all surface water runoff will be collected by two gullies and drainage pipes. These will discharge into a proposed soakaway pit, allowing infiltration into the ground and effectively manage surface water runoff. For detailed information regarding the layout and location of the proposed drainage please refer to drawing W23028/P818_P submitted as part of the overall planning application.

The total area of hardstanding within the Proposed Development will be 2,135m2, comprising of the 38kV substation building (103m2), inverter units (187m2) and the BESS units (1,845m2). The internal access tracks will comprise of permeable hardcore.

The proposed Substation roof surface water will be collected by a proposed soakway, refer to Malone O'Regan drawings W23028/P825_P – Proposed Substation Building details for full detail regarding layout and location of proposed soakway.

It is proposed that the small volume of runoff from the 24 inverters will percolate into the adjacent ground. As the inverter units will be relatively small and free-standing units, it is considered that the small volume of runoff from each inverter will percolate into the adjacent ground of either grass or crushed stone. Therefore, no specific drainage infrastructure will be required for the invertors.

The BESS units will be situated on a hardcore area, allowing rainfall within the BESS area to infiltrate into the ground, thus mimicking a soakaway scenario. There will be no resulting alterations to the existing drainage patterns within the site as a result of the development. All rainfall water will percolate into the ground as is currently the case.

As only small areas of the Site will comprise of hardstanding, it is not considered that any alteration to the existing drainage at the Site will be required. The proposed access track and temporary contractors' compounds will simply be surfaced with a layer of hardcore. This free-draining material will allow rainfall to permeate into the ground. Assuming a very basic infiltration rate through the compound stone, it can be concluded that the existing greenfield condition will be maintained. Therefore, no specific drainage infrastructure will be required for the Proposed Development.

The proposed maximum surface water discharge rate from the Site will not increase as a result of the Proposed Development. It is considered that the Proposed Development will not increase surface water flood risk at or downstream of the Site.

Foul Water

There will be no foul drainage required. During the Construction Phase, portable toilets will be provided at the temporary Contractors Compound for the duration of the Construction Phase only. All waste from the portable toilets will be removed and disposed of off-site by an approved contractor.

During the Operational Phase, the substation building will contain a sink and toilet. As the welfare facilities onsite will be infrequently used, it is proposed that foul water will be diverted into a holding tank. All wastes collected in this holding tank will be removed by a suitably licensed waste contractor as required.

No specific drainage infrastructure will be required for the Proposed Development.

3.3.7 Earthworks

Only minimal earthworks and localised levelling works will be required for the overall development of the Site. These will include the following:

- Topsoil will need to be removed specifically from the locations of the substation and BESS units. However, it will be expected to comprise of a concrete foundation for the substation building, with the rest of the area filled with crushed rock;
- Underground cable trenches and cabling connecting the solar arrays to inverter stations and subsequently to the proposed onsite 38kV substation; and,
- Associated ground works with all inverter stations and access tracks.

3.3.8 Soil Disposal

There will be no requirement for any offsite disposal of surplus materials as the design has specifically minimised the need for any earthworks. Any surplus excavated materials that will be minimal in volume will be re-used onsite for berm construction.

3.3.9 Site Access

Construction Phase Access

All Construction Phase traffic access will be via the existing site entrance on the N81. The All Construction Phase traffic access will be via the existing site entrance on the N81. The existing entrance along the N81 will be upgraded to allow for HGV access during the construction and operational phase of the Proposed Development. A drawing of the entrance arrangement was prepared (refer to Appendix A, drawing P818) and illustrates the following:

- Layout of upgrading works to the existing site entrance;
- Layout of proposed widened road surface, with the entire area to be upgraded with stone mastic asphalt ('SMA') finish. S.M.A finish;
- A new 1m high timber post and rail fence;
- Associated gullies and drainage details; and,
- New security double entrance gates.

Construction Phase Egress

All egress will be via the existing site entrance on the N81, as outlined above.

A **left-turn-only policy** will be implemented for all HGV's exiting the Site onto the N81. The left-turn-only restriction negates the need for any HGVs to cross any lanes of traffic. This measure is designed to enhance both safety and traffic efficiency, aligning with best practices in road design and traffic management.

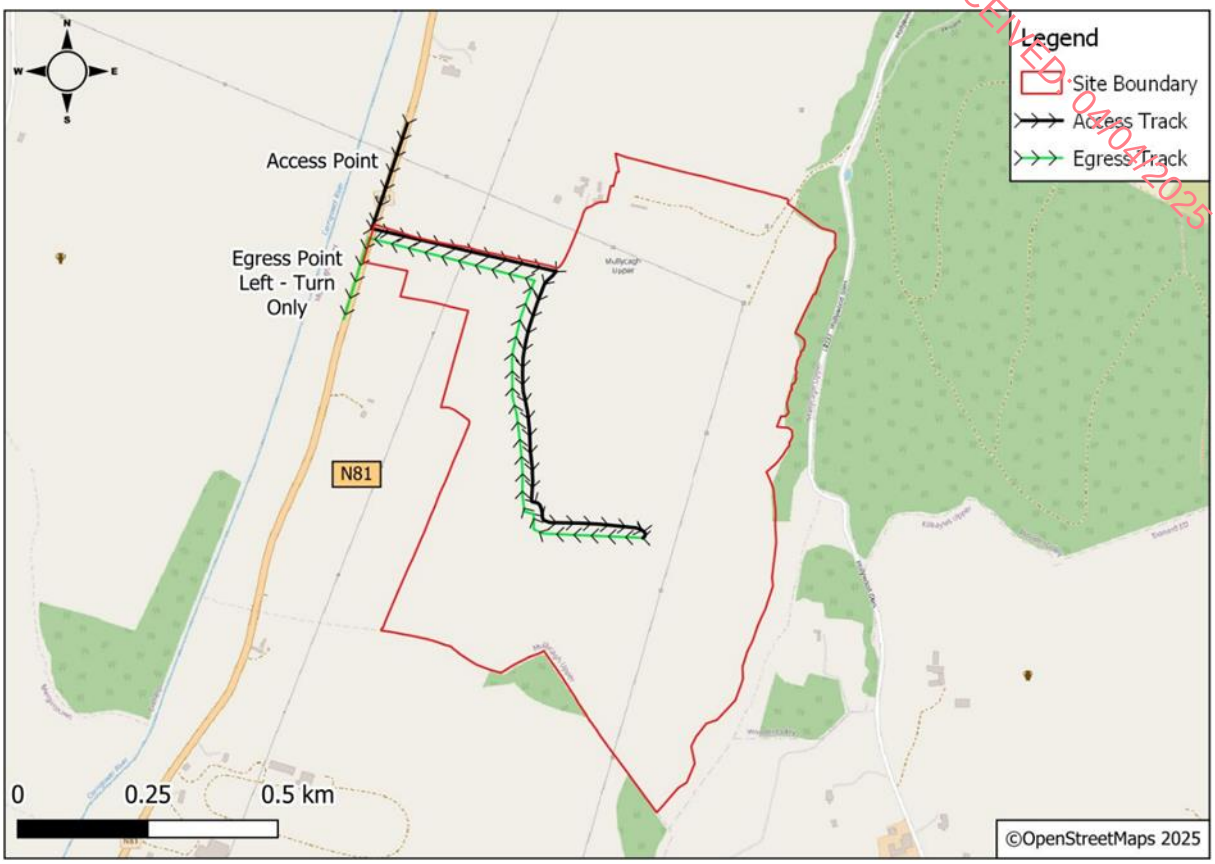
Internal Access

The Site will be accessed from the secure temporary compound via a network of proposed and pre-existing hardcore tracks extending to all areas of the Site and will be the principal means of all internal access.

Operational Phase Access and Egress

All operational phase access and egress will follow the same one-way system as the Construction Phase of the Proposed Development. Please refer to Figure 3-5.

Figure 3-5: Site Access and Egress



3.3.9.1 Sightlines

All site access and egress sightlines are in accordance with all sightline visibility requirements, as set out by the TII Rural Road Link Design DN-GEO-03031 May 2023.

In order to facilitate unobstructed sightlines along the N81, 5 trees and ca. 65m of hedgerow will be removed along with ca. 75m of existing hedgerow to be trimmed and maintained. A Letter of consent has been obtained by adjacent landowners who have committed to cutting back / removing the vegetation sufficiently to provide the required sightlines.

The existing site entrance will be upgraded to achieve the required sightlines. A 3m setback for sightlines from the existing road with 215m sightlines will be achieved. For vehicles entering and leaving the Site, the forward visibility in both directions will be in excess of 215m.

The proposed access arrangement, sightlines and the boundary removal required are presented on drawing number P818 and P819, which have been submitted as part of the overall development.

The N81 provides adequate stopping site distance and satisfy current standards; therefore, the Proposed Development will not contribute to an increased risk to road users.

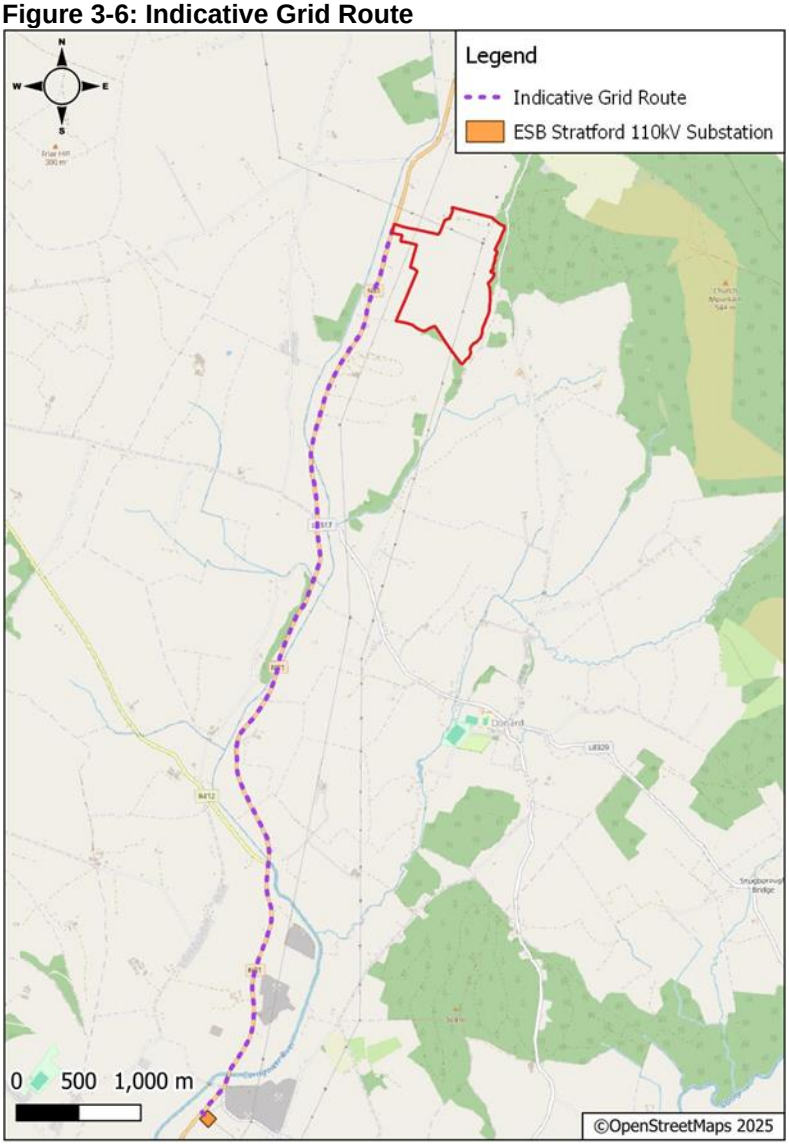
3.3.10 Grid Connection

The Applicant currently anticipates that the Proposed Development will be connected to the national grid via an onsite substation and connected to the existing Stratford 110kV Substation ca. 7.6km south of the Site.

The grid connection will involve the construction of an underground cable route that will consist entirely of underground cables. The cables will be along existing road infrastructure. Please note at this juncture the route option is still indicative and, as such, does not form. part of this

planning application. Once design is confirmed the grid connection will require to obtain a separate statutory consent. For completeness, the grid connection will be assessed as part 'in-combination effects'.

Figure 3-6: Indicative Grid Route



3.4 Sensitive Design

Specialist ecological input was a key element of the design of the Proposed Development. This ensured that the design was extremely sensitive to valued ecological features that occur or may occur within the Site and the surrounding landscape. The key measures relevant to this Proposed Development are detailed below:

- The construction of the Proposed Development will use an established existing access to the Site;
- Buffers will be implemented and maintained throughout the lifecycle of the Proposed Development, including:
    - A >100m buffer between all works and BESS infrastructure and any designated European site;
    - A >50m buffer between all works and BESS infrastructure and any EPA-designated watercourse;

  - A ca. 6m buffer between all works, solar farm infrastructure and existing hedgerows / treelines;
  - A ca. 5m setback from the perimeter fence and all infrastructure; and,
  - A minimum ca. 200m buffer between likely solar farm acoustic emission infrastructure and sensitive residential dwellings.
- A comprehensive Biodiversity Management Plan ('BMP') will be implemented following the completion of the proposed works in order to conserve and, where possible, enhance the areas of retained and created habitat. This includes a biodiversity Enhancement Area within the Site along with additional habitats that will be created to enhance ecological diversity within the overall Site Boundary (see Appendix B of the Environmental Report submitted as part of the overall planning application);
- A Landscape Plan will be implemented following the completion of the proposed works, with ca. 1447m of additional hedgerow / treeline planting as screening management, resulting in an overall net gain (Type 2). Additional Type 1 hedgerow will take place as necessary for bolstering and gap filling across the Site, ca. 4547m. Furthermore, low-canopy woodland planting mix will be planted, ca. 0.11ha (see Appendix C of the Environmental Report submitted as part of the overall planning application); and,
- The type of solar panels to be used in the Proposed Development are 'grid-formed' panels. Grid-formed panels are surrounded by white borders and divided by white grids. They contain anti-reflective films that ensure that the reflection of polarized light will be fragmented, significantly reducing reflection occurring from the panels. These types of panels have been found to be less attractive to insects as the white grid partitioning reduces the reflection of polarised light and were found to be less attractive to egg-laying insects [28]. The use of grid-formed panels is the same principle as grids applied to windows in order to reduce collision risk.

3.5 Landscaping

As part of the Proposed Development works, a Landscape Plan has been prepared. This plan includes the main areas of landscaping works and includes details on the following:

- Retention, maintenance and strengthening of existing hedge / treeline along the boundary of the Site;
- Planting of additional hedge / treeline as screening management;
- Planting of low-canopy woodland planting mix;
- Creation of Recolonizing Grassland habitat;
- Retention of field boundaries and utilisation of existing contours, maintaining the existing character of the area.

A height of 3-4m will be established along all hedge / treelines after 2-3 years (3-4 growing seasons) and will form an effective screen. All planting will commence at the first available planting season following the commencement of construction.

Mitigation through planting has also considered the periods where hedgerow do not provide leave cover expected in Summer. As part of the landscaping, 15% of the mix included is evergreen holly, which is quite a high proportion for a native hedgerow mix. Furthermore, the new hedgerow planting mix consists of triple staggered rows of planting to form a thicket type of hedgerow that will have a dense branch structure during winter months in addition to the

evergreen Holly. Equally, bolstering of existing hedgerows is also intended to add thickness and tight branch structure for winter months.

The Landscape Plan has been developed not only to ensure that any visual impacts from the Proposed Development will be mitigated but also to enhance the biodiversity value of the Site. It has been developed through consultation with the project ecologist to ensure that the biodiversity value of the Site will be enhanced where practically possible.

3.6 Construction Procedure

During the Construction Phase of the Proposed Development, potential environmental effects will be short-term and localised. Nonetheless, all works will comply with the relevant legislation, construction industry guidelines and best practices to reduce potential environmental adverse effects.

A Construction Environmental Management Plan ('CEMP') will be prepared and submitted to the planning authority by the appointed contractor in advance of works commencing at the Site. The following guidance will be referred to and will be followed during the construction phase of the project to prevent environmental pollution that may occur:

- C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors [27];
- C811 - Environmental Good Practice on Site (5th edition) [28]; C741 - Environmental Good Practice on Site (4th edition) [29];
- C648 - Control of Water Pollution from Linear Construction Projects: Technical Guidance [30];
- Guidance for the Treatment of Otters Prior to the Construction of National Road Schemes [31];
- All works will be undertaken in accordance with the Inland Fisheries Ireland (IFI) 'Requirements for the Protection of Fisheries Habitat during Construction and Development' [32];
- NRA, 'Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes' [33]; and,
- NRA, 'Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads' [34].

A final CEMP will be prepared by the appointed main contractor and will be submitted to the planning authority in advance of works commencing, as detailed in Section 5.3. The following measures will be incorporated and adhered to in order to ensure that the proposed works do not result in any contravention of wildlife legislation:

- All activities will comply with all relevant legislation and best practices to reduce any potential environmental impacts. The measures detailed within this report will be fully adhered to;
- In advance of works, all Site personnel will receive an induction, which will include reference to measures in relation to protected species and measures to prevent the spread of invasive species;
- Should construction works be required outside of daylight hours, the appointed project Ecological Clerk of Works ('ECoW') will be consulted as required; and,
- If protected or notable species are encountered during operations at the Proposed Development, the ECoW will be contacted for advice.

<u>Hours of Work</u>

Working hours will generally be restricted to between 08:00 until 18:00 hours Monday to Friday inclusive and between 08:00 and 13:00 hours on Saturdays. Construction work will not be permitted on Sundays, public holidays or at night-time except where safety concerns necessitate it or if agreed in advance with the Planning Authority.

3.6.1 Temporary Construction Compound

A temporary construction compound will serve the Proposed Development. Sewage will be chemically treated and removed offsite by a licensed contractor and taken to a licensed disposal facility. A site layout plan of the construction site compound was prepared and includes the following:

- Site access / egress details;
- Car parking arrangement for workers during the construction phase of the Proposed Development; and,
- Location of welfare facilities (including fresh water supply) required for the construction workers.

The source of drinking water for the temporary construction compound will be self-contained in ca. 20Lt bottle dispenser, which will be replenished / replaced as required. No connection to the water mains will be required.

3.6.2 Waste Management – Construction

- All excavated materials will be reused onsite, where possible;
- Waste materials will be collected and stored in suitable receptacles before they are taken offsite;
- Waste materials will not be allowed to accumulate because of the fire/vermin risk; and,
- All wastes will be appropriately segregated with the objective to maximise the level of recycling.

To ensure the efficient management of the construction works, a Temporary Construction Compound will be set up for the duration of the construction works. Sewage will be chemically treated and removed offsite by a licensed contractor to a licensed disposal facility.

3.6.3 Monitoring Works

An ECoW will inspect the Site in advance of works commencing and will undertake Site inspections as required during the works to ensure that they are completed in line with the measures detailed within this NIS along with the Environmental Report ('ER') and CEMP, and all wildlife legislation.

The ECoW will also either deliver or provide the resident engineer with sufficient environmental information to deliver a Site induction to all personnel working onsite.

3.7 EMF

Electromagnetic fields ('EMF') are created around all electrical and mobile telecommunications equipment. Guideline EMF exposure limits have been set up by the International Commission on Non-Ionizing Radiation Protection ('ICNIRP') and have been subsequently adopted by the EU in Directive 2013/35/EU. The Irish Government adopted these limits in the form of SI 337/2016, Safety, Health and Welfare at Work (Electromagnetic Fields) Regulations.

It can be concluded that all of the generated EMF fields, as a result of the Proposed Development, will comply with the requirements of Irish and EU law.

3.8 Operational Procedures

3.8.1 Operational Procedures – Solar PV

Once operational, significant maintenance works will not be required. The Proposed Development will be an unmanned facility, which will be remotely monitored by way of CCTV. Any fault flagged on the control system will be inspected by maintenance personnel or dealt with remotely if possible. All systems onsite will be automated, with remote access provided to the control building.

The Proposed Development will require approximately 2-4 maintenance visits per month to undertake routine, non-intrusive maintenance tasks such as site inspection, cable and power plant checks and servicing, hedgerow maintenance, etc. This will equate to approximately 24-48 maintenance visits per year. Only small vans / jeeps will be used to access the Proposed Development.

The transformer units will contain oil that will be bunded. Under normal operation, this oil is maintained within the system and no emissions will occur. To prevent unforeseen impacts on the environment, the transformer and step-up transformer units will be regularly monitored and maintained.

There will be a washroom in the 38kV substation. Therefore, there will be a foul wastewater holding tank, which will be emptied periodically and disposed of to a suitably licensed facility.

The decommissioning plan prepared as part of the overall planning application addresses all aspects of waste management post the operational phase.

3.8.2 Operational Procedures – Battery Storage

Once operational, the Proposed Development will be an unmanned facility. However, the facility will be monitored 24 hours a day remotely by the Operator's operation system and the Engineer Procurement and Construction provider.

The BESS will be monitored and controlled by a Supervisory Control and Data Acquisition ('SCADA') safety system as detailed below. Any fault flagged on the control system will be inspected by maintenance personnel or dealt with remotely if possible. All systems onsite will be automated, with remote access provided to the control room.

The proposed BESS will be self-contained, with battery arrays located within the locked units. Power connection from these units to the control room will be via underground trenching. There will be no requirement for any other natural resources for these units.

The Site will also be subject to routine inspections throughout the year, to undertake routine maintenance tasks, along with technician visits to review onsite systems. Significant maintenance works during the operational life of the facility are not envisaged.

3.8.3 Waste Management – Operational Phase

No welfare provisions (toilets, sinks, etc.) are proposed for the Proposed Development, once operational. There will be no operational waste associated with the Proposed Development. The decommissioning plan prepared as part of the overall planning application addresses all aspects of waste management post-Operational Phase.

3.9 Decommissioning

The design life of the facility will be approximately forty years, as determined by the grant of planning.

The decommissioning tasks and removal of all solar farm components from the leased land will be completed within eleven months of the cessation of electricity generation by the solar farm, and the Site shall be reinstated to its former use.

At the end of the Proposed Development's lifetime, with the exception of the ESB / EirGrid substation, the Proposed Development will be completely dismantled (including underground electrical interconnection and distribution cables), and the Site will be restored to its preconstruction state.

As part of the decommissioning works required, removal of the BESS from the Site will require the use of a fixed crane and articulated Heavy Goods Vehicles ('HGVs'). These units contain precious components, and removal will enable recycling of these units on the open market, or the option of repositioning to an alternative site. The work will therefore require similar processes as the construction phase, with a timeframe comparable with the construction programme.

The decommissioning plan addresses all aspects of waste management post-Operational Phase. The Applicant will reuse or recycle as many components as reasonably practicable. All residual waste will be removed by a licenced contractor and transported to a licenced waste facility.

Given the nature of the Proposed Development and the small amount of infrastructure required, it is considered highly unlikely that any adverse effects would occur as a result of decommissioning works. However, decommissioning works will have to be carried out in accordance with best practices and any legislation applicable at the time of decommissioning.

This decommissioning fund will seek to make good the lands that are under solar panels and will allow the removal of all structures relating to the solar farm that have been put in place. Thus, returning the site to its condition post-construction.

Full details of the decommissioning works are included within the 'Decommissioning Plan' submitted as part of the planning application.

4 IDENTIFICATION OF EUROPEAN SITES

In accordance with the European Commission Methodological Guidance [4] a list of European sites that can be potentially affected by the Proposed Development has been compiled. Guidance for Planning Authorities prepared by the Department of Environment Heritage and Local Government [5] states that defining the likely zone of impact for the screening and the approach used will depend on the nature, size, location and the likely significant effects of the project. The key variables determining whether or not a particular European site is likely to be significantly affected by a project are:

- The physical distance from the project to the European site;
- The presence of impact pathways;
- The sensitivities of the ecological receptors; and,
- The potential for in-combination effects.

All SPAs and SACs within 15km have been considered to assess their ecological pathways and functional links. As acknowledged in the OPR guidelines [1], few projects have a zone of influence this large; however, the identification of European sites within 15km has become widely accepted as the starting point for the screening process. For this reason, all SPAs and SACs in 15km have been identified for consideration as part of the screening.

There are four European sites located within 15km of the Site - these are identified in Figure 4-1 and Table 4-1.

Figure 4-1: Site Location and European Sites within 15km

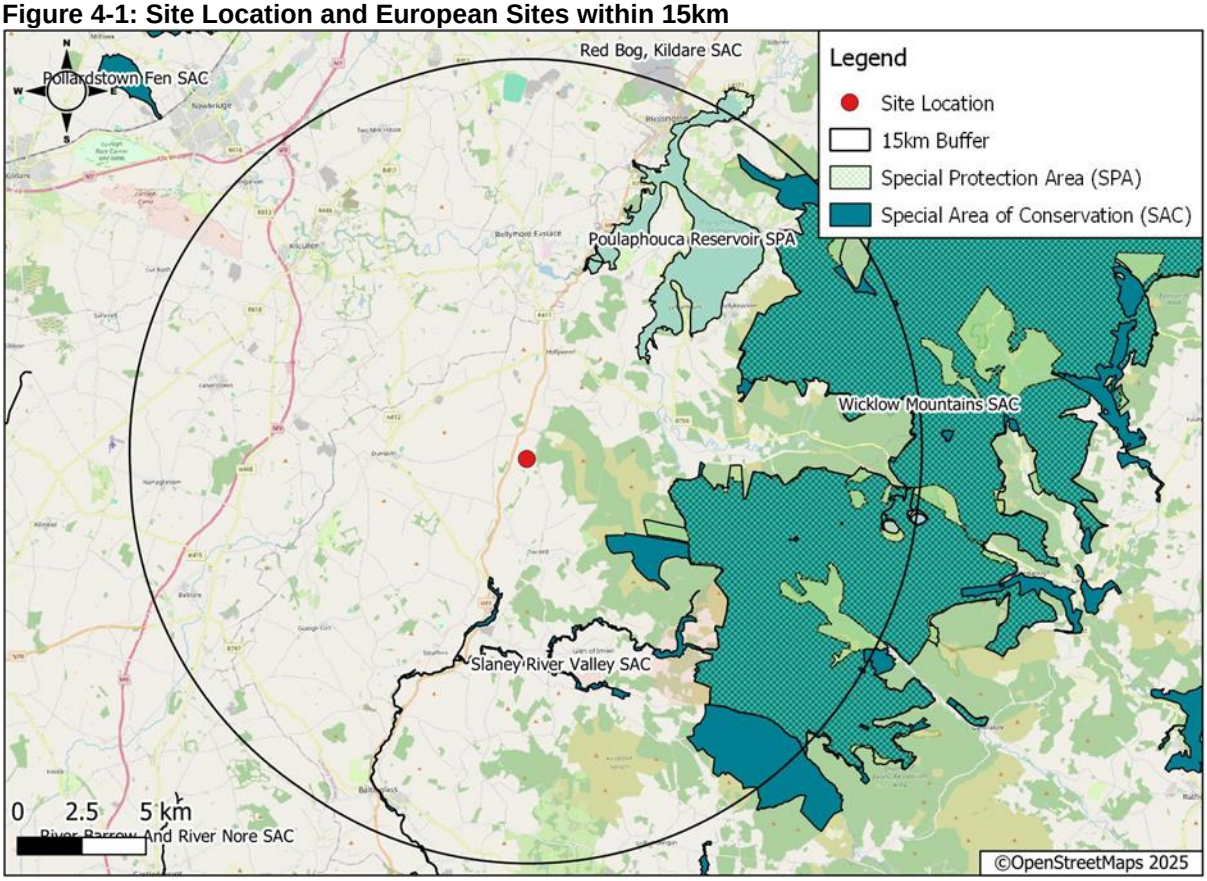


Table 4-1: European Designated Sites within 15km of the Site

Site Name	Code	Distance (km)	Direction from the Site
Special Areas of Conservation ('SAC')			
Wicklow Mountains SAC	002122	3.5km	SE
Slaney River Valley SAC	000781	4.0km	S
Special Protection Area ('SPA')			
Wicklow Mountains SPA	004040	4.5km	SE
Poulaphouca Reservoir SPA	004063	5.5km	NE

The Site is not located within or directly adjacent to any European Designated sites, however, the boundaries of four SACs / SPAs are located within 15km from the Site.

4.1 Identification of European Sites within ZoI

The Zone of Influence ('ZoI') comprises the area in which the Proposed Development may potentially affect the conservation objectives (or qualifying interests) of a European site. The definition of ZoI for the proposed works evaluated multiple factors as outlined in Section 2.1 and discussed below. Please note that the extent of ZoI differs for different environmental aspects, e.g. air, water, etc.

4.1.1 Habitat Loss / Degradation

The Site is not located in or directly adjacent to any European sites. The Site is located within an area comprised predominately of agricultural land with sections of wet grassland onsite. No designated habitats were identified within the Site.

No impacts associated with direct designated habitat loss / degradation as a result of the Proposed Development given the distance separating the Site from the European Designated sites.

4.1.2 Water Quality Impairment

Potential water quality impacts would typically be associated with the release of sediment and other pollutants to surface water during the construction phase of the Proposed Development, therefore the ZoI would be considered to include the receiving waterbodies adjacent to and downstream of the Site during the construction and operational phase.

No hydrological connection was identified between the Wicklow Mountains SAC, Poulaphouca Reservoir SPA or Wicklow Mountains SPA. Therefore, no impacts associated with water quality impairment as a result of the Proposed Development will occur on these European sites given the lack of impact pathways.

However, as outlined in Section 3.2, a hydrological connection was identified between the Site and the Slaney River Valley SAC via the onsite drainage ditches and Kilbaylet Upper Stream. Kilbaylet Upper Stream is a tributary of the Lower Mullycagh River and the Carrigower River which forms part of the Slaney River Valley SAC. Please refer to Figure 4-2 and Table 4-2.

Figure 4-2: Hydrological Connection between the Site and the Slaney River Valley SAC

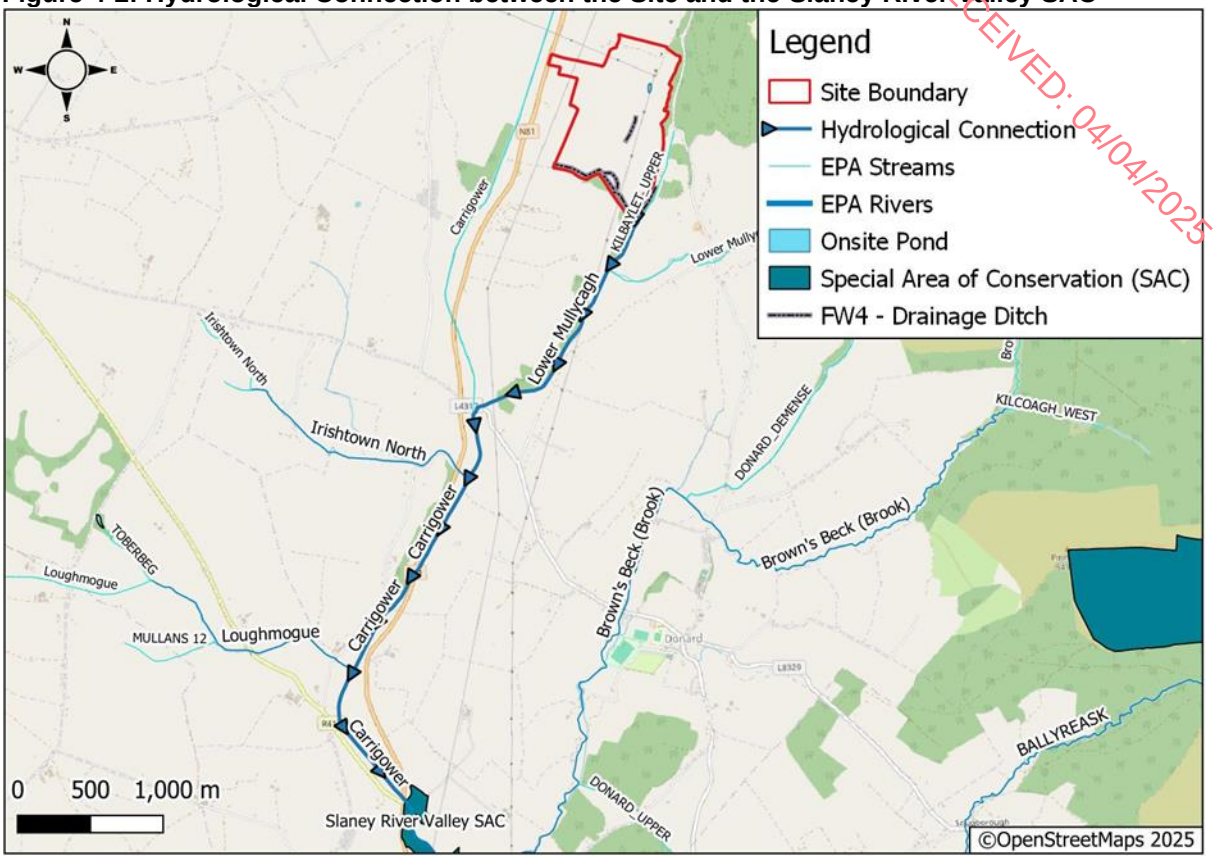


Table 4-2: European Designated Sites within 15km of the Site

Site Name	Hydrological Connection
Slaney River Valley SAC	Ca. 5km downstream of the Site
Wicklow Mountains SAC	No direct hydrological connection
Poulaphouca Reservoir SPA	No direct hydrological connection
Wicklow Mountains SPA	No direct hydrological connection

4.1.3 Air Quality Impairment

According to the Institute of Air Quality Management ('IAQM') Guidelines, the potential adverse effects from dust arising from construction to ecological receptors occur within 50m of a construction site [35]. This is a temporary nuisance impact only.

All European sites are located >2km from the Site and, therefore, do not require a detailed dust assessment. It is not considered that the Proposed Development will result in any significant effects on any European sites as a result of construction dust.

4.1.4 Noise / Disturbance

Noise from the construction activity has the potential to cause disturbance to resting, foraging and commuting qualifying species of the European sites. As there will be no piling or in-river works required for the Proposed Development, there is no potential for underwater noise impacts beyond the immediate vicinity of the Site.

Individual species will provoke different behavioural responses to disturbances at different distances from the source of disturbance:

- Transport Infrastructure Ireland (formally the National Roads Authority) has produced a series of best practice planning and construction guidelines for the treatment of certain protected mammal species (i.e. otter), which indicate that disturbance to terrestrial mammals would not extend beyond 150m [36]; and,
- Studies have noted that different types of disturbance stimuli are characterized by different avifaunal reactions, however, in general, a distance of 300m can be used to represent the maximum likely disturbance distance for waterfowl [37].

The ZoI for noise / disturbance is therefore established as the Site with a 300m buffer.

All European sites, as listed in Table 4-2, are located outside of this 300m buffer. However, the Kilbaylet Upper Stream is a tributary of the Lower Mullycagh River and the Carrigower River, which forms part of the Slaney River Valley SAC, which supports otter. Otter are predominantly found in aquatic habitats along rivers and estuaries and have the ability to disperse from water. Female otter territories can be up to ca. 7.5km in length and male otter territories can be up to ca. 13.2km in size [38]. Therefore, there is potential for this species to disperse outside of the SAC boundary and utilise the watercourses within proximity of the Site.

Furthermore, due to the proximity of the Site to the Wicklow Mountains SPA and the Poulaphouca Reservoir SPA and the mobile nature of bird species for which these sites are designated, further consideration will be given to these European sites to assess potential adverse effects resulting from the Proposed Development.

4.1.5 Invasive Species

No medium or high-impact invasive plant species (including those that are regulated under the European Union (Invasive Alien Species) Regulations 2024 (S.I. No. 374/2024) were recorded within the Site [39].

Therefore, no impacts associated with the spread of invasive species as a result of the Proposed Development are anticipated.

4.1.6 ZoI Conclusions

The Site is not located within or directly adjacent to any European sites, however, the boundaries of four are located within 15km from the Site.

Given the short-term, localised nature of the construction works, lack of impact pathways and the distance separating the Site from the Wicklow Mountains SAC, it is considered that the Proposed Development will not result in adverse effects on this European site, and it has therefore been screened out from further consideration.

However, the following European sites in Table 4-3 have been screened in for further consideration to assess potential adverse effects resulting from the Proposed Development

Table 4-3: European Designated Sites within ZoI

Site Name	Code	Distance at closest point and source-pathway-receptor link
Slaney River Valley SAC	000781	The Site is located 4km north of the Slaney River Valley SAC, see Figure 4-2. Given there is a hydrological connection between the Site and the SAC, potential impacts on water quality and potential noise and disturbance will be taken forward for further consideration.

Site Name	Code	Distance at closest point and source-pathway-receptor link
Wicklow Mountains SPA	004040	The Site is located 4.5km east of the of the Wicklow Mountains SPA, see Figure 4-2. Due to the proximity of SPA and the potential for impact to designated bird species, this Natura 2000 site will be taken forward for further consideration.
Poulaphouca Reservoir SPA	004063	The Site is located 5.5km southwest of the of the Poulaphouca Reservoir SPA, see Figure 4-2. Due to the proximity of Poulaphouca Reservoir SPA and the potential for impact to designated bird species, this Natura 2000 site will be taken forward for further consideration.

The screening assessment for individual designated habitats and species for each of the screened in European sites and the potential for them to be adversely affected by the Proposed Development are presented in Section 6 below. Further information on the screened in European sites is provided below.

4.2 Slaney River Valley SAC (Site Code: 00781)

This site comprises the freshwater stretches of the Slaney River as far as the Wicklow Mountains, a number of tributaries are included within the SAC, the larger of which include the Bann, Boro, Glasha, Clody, Derry, Derreen, Douglas and Carrigower Rivers and the estuary at Ferrycarrig and Wexford Harbour. The river flows through the counties of Wicklow, Wexford and Carlow. The SAC is selected for the qualifying habitats and species as set out in Tables 4-4 and 4-5 below.

Table 4-4: Qualifying Annex I Habitats for the Slaney River Valley SAC

Qualifying Habitats (*denotes Priority Habitat)	Code
Estuaries	1130
Mudflats and Sandflats not covered by seawater at low tide	1140
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	1330
Water courses of plain to montane levels with *the Ranunculion fluitantis* and *Callitricho - Batrachion* vegetation.	3260
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, Salicioncalbae*)*	91E0

Table 4-5: Qualifying Annex II Species for the Slaney River Valley SAC

Qualifying Species	Species Name	Code
Mammals listed on Annex II of the Habitats Directive	*Otter (Lutra lutra)*	1355
	Common *(Harbour)* Seal *(Phoca vitulina)*	1365
Molluscs listed on Annex II of the Habitats Directive	Freshwater pearl mussel (*Margaritifera margaritifera*)	1029
Fish listed on Annex II of the Habitats Directive	Sea Lamprey (*Petromyzon marinus*)	1095

Qualifying Species	Species Name	Code
	Brook Lamprey (*Lampetra planeri*)	1096
	River Lamprey (Lampetra fluviatilis)	1099
	Twaite Shad (Alosa fallax)	1103
	Salmon only in freshwater (Salmo salar)	1106

4.1 Wicklow Mountains SPA (Site Code: 004040)

The Wicklow Mountains SPA covers a substantial portion of the Wicklow Mountains, and a small portion of the SPA lies in Co. Dublin. Much of the SPA is over 600m, with the peak being Lugnaquillia at 925m. The site is comprised primarily of peat, with poor mineral soil occurring on the slopes and lower ground, as well as areas of exposed rock and scree. The dominant habitat types within the SPA are blanket bog, heaths and upland grasslands.

The site is a Special Protection Area ('SPA') under the E.U. Birds Directive of special conservation interest for the following species presented in Table 4-6.

Table 4-6: Qualifying Annex I Species of Birds for Poulaphouca Reservoir SPA

Species Name	Scientific Name	Code
Merlin	*Falco columbarius*	A098
Peregrine Falcon	*Falco peregrinus*	A103

Previous surveys undertaken at the SPA indicate up to nine breeding pairs of merlin in any one year and up to 20 pairs of peregrine falcon. Other birds of interest utilising the open peatland and scree slopes include ring ouzel and red grouse.

4.2 Poulaphouca Reservoir SPA (Site Code: 004063)

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 approximately 20 square kilometres and is the largest inland water body in the mid-east and south-east regions. The reservoir receives water from two main sources: the River Liffey at the northern end and the Kings River at the southern end. The exit is into the River Liffey gorge at the western end [40].

The site is a Special Protection Area ('SPA') under the E.U. Birds Directive of special conservation interest for the following species presented in Table 4-7.

Table 4-7: Qualifying Annex I Species of Birds for Poulaphouca Reservoir SPA

Species Name	Scientific Name	Code
Lesser Black-backed Gull	*Larus fuscus*	A183
Greylag Goose	*Anser anser*	A043

Poulaphouca Reservoir is of national importance for its greylag goose population, which is one of the largest in the country. The site provides the main roost for the birds, with feeding occurring mostly on improved grassland outside of the site. Other waterfowl species occur in relatively low numbers, including whooper swan, wigeon, teal, mallard, goldeneye, cormorant, great crested grebe, curlew, grey heron and mute swan. The reservoir attracts roosting gulls during winter, most notably a large population of lesser black-backed gull, which in Ireland is rare in winter away from the south coast. Black-headed gull and common gull also occur.

Breeding birds at the site include great crested grebe, which is localised in its distribution in eastern Ireland, as well as snipe and lapwing.

The principal interest of the site is the greylag goose population, which is of national importance. A range of other wildfowl species also occurs, including whooper swan, a species that is listed on Annex I of the E.U. Birds Directive. Part of Poulaphouca Reservoir SPA is a Wildfowl Sanctuary.

4.3 Conservation Objectives

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition. The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites.

According to the Habitats Directive, favourable conservation status of a habitat is achieved when:

- Its natural range, and the area it covers within that range, is stable or increasing;
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and,
- The conservation status of its typical species is favourable, as defined below.

The favourable conservation status of a species is achieved when:

- Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- The natural range of the species is neither being reduced or likely to be reduced for the foreseeable future; and,
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Conservation objectives for all identified Natura 2000 SAC Sites are as follows:

- *'To maintain or restore the favourable conservation condition of the Annex I habitat(s) and the Annex II species for which the SAC has been selected.'*

The full reports for the conservation objectives for the Slaney River Valley SAC[1], Wicklow Mountains SPA[2] and the Poulaphouca Reservoir SPA[3] can be found on the NPWS website [10].

[1] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000781.pdf
[2] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004040.pdf
[3] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004063.pdf

5 STUDY RESULTS

5.1 Desk-Based Study Results

5.1.1 NBDC Records

Following a review of the NBDC's website, grid squares (N90A, N90B N90F N90G N90K, N90L, S99E, S99J and S99P) no protected or otherwise notable species protected under the Slaney River Valley SAC, Wicklow Mountains SPA or Poulaphouca Reservoir SPA occur within 2km of the Site were recorded. The NBDC records were checked on 7th January 2025.

A parameter of 10 years was chosen to allow for habitat adaption and modification; it is considered that any records over 10 years old are not representative of the current distribution of species populations. In addition, the Chartered Institute of Ecology and Environmental Management's ('CIEEM's') guidelines recommend that consideration be given to the biodiversity conservation value of the species that occur within this zone of influence (as appropriate) [41].

5.1.2 I-WeBS Results

The I-WeBS data for nearby sites within the vicinity of the Site, Poulaphouca Reservoir sites, was provided by BirdWatch Ireland on the 16th July 2024. The records were reviewed in order to gain an understanding of the potential assemblage of bird populations that may utilise the areas within the vicinity of the Site.

The I-WeBS data received was for wintering seasons between 2013/2014 to 2022/2023 for the Poulaphouca Reservoir sites. However, the following limitations in the data were noted:

- No data was available for the last five years for the area northeast of Blessington Bridge Subsite; and,
- It is important to note that the data sets for these sites and subsites were not continuous and contained information gaps for different months and years.

Nonetheless, all of this information was reviewed in order to gain an understanding of the potential bird assemblages in the wider area that may utilise the Site for foraging purposes.

A total of 34 species of birds were recorded within the I-WeBS sites and subsites from 2013/2014 to 2022/2023. However, during the most recent counts available for the 2022/2023 season, only 21 species were recorded.

Out of the 34 species identified within these I-WeBS sites and subsites, only one species has been recorded in numbers considered to be of national or international importance. Greylag goose were recorded in annual numbers of national importance during the winter seasons of 2013/2014, 2014/2015 and 2016/2017 at the Threecastle subsite.

5.2 Field Based Study Results

The following section provides details of the field-based assessments that were undertaken at the Site. The distribution of the habitats and target notes identifying the location of features of interest are shown in Figure 5-1.

5.2.1 Habitat Assessment

The following section provides details of the field-based assessment that was undertaken for the Site on the 20th April 2023. An updated walkover was undertaken on the 21st November 2024. A description of the habitats and features of ecological significance are outlined below and illustrated in Figure 5-1.

Improved Grassland (GA1)

Agricultural grassland fields were the predominant habitat of the Site. These fields were comprised primarily of commonly found agricultural grasses, including perennial ryegrass. The majority of these areas were being actively grazed by sheep and cattle and trampled in parts.

The dominant species of improved grassland that were recorded included perennial rye grass (*Lolium perenne*), false oat grass (*Arrhenatherum elatius*), timothy (*Phleum pratense*), Yorkshire fog (*Holcus lanatus*) and meadow grasses (*Poa spp.*).

Frequent herbaceous species recorded included clovers (*Trifolium spp*.), greater plantain (*Plantago major*), ribwort plantain (*Plantago lanceolata*), meadow buttercup *(Ranunculus acris)*, and hogweed *(Heracleum sphondylium)*. Coarse weeds occurred scattered throughout the fields included thistles (*Cirsium spp.),* docks (*Rumex spp*.), ragwort (*Senecio jacobea*) nettles (*Urtica dioica*) and small patches of soft rush (*Juncus effuses*) were located within the wetter sections of the fields and near the drainage ditches. Other species recorded within the Site included shield fern *(Polystichum setiferum*), harts-tongue fern (*Phyllitis scolopendrium)* and gorse (*Ulex spp.)*.

Sections of the grassland area were noted as having damp soil conditions, specifically adjacent to onsite drainage ditches. Some of these areas were characterised by the presence of sweet grass (*Glyceria fluitans),* soft rush and hard rush (*Juncus inflexus),* which are species associated with wetter ground conditions.

Wet Grassland (GS4)

Sections of wet grassland were identified onsite, specifically in the southern section of the Site. Species identified in these wet grasslands included soft rush, bulrush *(Typha latifolia),* horsetail *(Equisetum spp.),* cotton grass (*Eriophorum angustifolium),* compact rush *(Juncus conglomeratus),* glaucous sedge *(Carex flacca)* and common reed *(Phragmites australis).* Other species in the vicinity of the waterbodies included creeping bent, tufted hair grass *(Deschampsia cespitosa),* Yorkshire fog, dandelion, colt's foot *(Tussilago farfara),* yellow iris *(Iris pseudacorus)* and creeping buttercup *(R. repens).*

Hedgerows (WL1) / Treelines (WL2)

Hedgerows were a key feature of the Site and along with the treelines provide the primary field boundaries. The quality of the hedgerows varied from well-structured and diverse to patchy and sparse. Some of hedgerow / treelines were accompanied by drainage ditches.

The hedgerow / treelines located across the Site were mostly dominated by Sitka spruce (*Picea sitchensis*) along with other species including ash (*Fraxinus excelsior*), beech (*Fagus spp*.), sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*), blackthorn (Prunus spinosa). Other tree and shrub species represented included large sections of gorse (*Ulex spp.)* along with alder (Alnus glutinosa), elder (*Sambucus nigra*), and Yew (*Taxus baccata*).

A typical array of herbaceous species were recorded in the ground layer of the hedgerows, including ground ivy (*Glechoma hederacea),* nettles (*Urtica dioica*), bramble (*Rubus fructicosus*), cleavers (*Galium aparine)*, creeping thistle (*Cirsium arvense),* broad-leaved dock (*Rumex obtusifolius*), ragwort (*Taraxacum* agg.), wild privet (*Ligustrum vulgare)*, hemlock (*Conium maculatum)*, lesser burdock (*Arctium minus)*, redshank (*Persicaria maculosa)*, chickweed *(Stellaria media)* and cow parsley (*Anthriscus sylvatica).* Additional small plant species recorded within the hedgerow include shield fern, harts-tongue fern, bracken *(Pteridium spp.)* and herb Robert (*Geranium robertianum).*

Mixed Broadleaved Woodland (WD1)

Small sections of mixed broadleaved woodland were located onsite. These areas were dominated by species as outlined in Hedgerow / Treeline (WL1 / WL2) section above.

Drainage Ditch (FW4)

There were a number of drainage ditches within and adjacent to the Site. The majority of drainage ditches were dry channels, with some sections of wet ditches identified. A slow flow was noted with drainage ditches within the Site's southern section, which supported limited plant diversity and wetland vegetation.

The majority of the banksides adjacent to the drainage ditches were dominated by broadleaved herbs, grass, and tall ruderals, including sections of gorse, nettles, and brambles.

Scrub (WS1)

Areas of scrub were located intermittently around the Site, typically adjacent to boundary lines, with a large section of this habitat identified along the eastern section of the Site. The species present included both native and non-native species.

The dominant species in the area of scrub was gorse interspersed with species including, ling (*Calluna vulgaris*), bell heather (*Erica cinerea*) along with grasses such as creeping bent (*Agrostis stolonifera*), cock's foot (*Dactylis glomerata*) and soft rush. The understorey was dominated by common nettle, bramble, ivy, lords and ladies (*Arum maculatum)*, primrose (*Primula vulgaris)*, dog rose, bracken and harts-tongue fern.

WN5 (Riparian Woodland)

This habitat was located in the southern section of the Site and included wet woodlands that are subject to fluctuating water levels. This habitat was dominated by stands of willow (*Salix spp.)*, alder*,* sycamore (*Acer pseudoplatanus*), and ash.

The majority of the banksides were dominated by grass and tall ruderals, including patches of nettles and brambles. Species present included cleavers, hawkbit (*Leontodon spp*.), ragwort, broad-leaved dock, thistle (*Cirsium vulgare*) and greater plantain.

Reed and Large Sedge Swamps (FS1)

A large section of reed and large sedge swamps was identified within the southern section of the Site.

This habitat included species-poor stands of herbaceous vegetation and was dominated by reeds, large grasses and tussock-forming sedges, including common reed (*Phragmites australis*), reed sweet-grass (*Glyceria maxima*) and horsetail.

Buildings / Artificial Surfaces (BL3)

A derelict property was identified onsite. The property and immediate surrounding area was devoid of any notable species.

Existing access tracks characterised by loose gravel were noted across the Site and within the wider landholding.

Stone Walls and Other Stonework (BL1)

Sections of old stone wall were identified intermittently throughout the Site. These walls acted as field boundaries. No notable species were identified on these walls.

Earth Bank (BL2)

Multiple earth banks were identified onsite. The earth bank onsite had been planted with treelines and an understory comprised of bramble, gorse and hawthorn. A number of small mammal holes, utilised by rabbits, were interspersed along the banks.

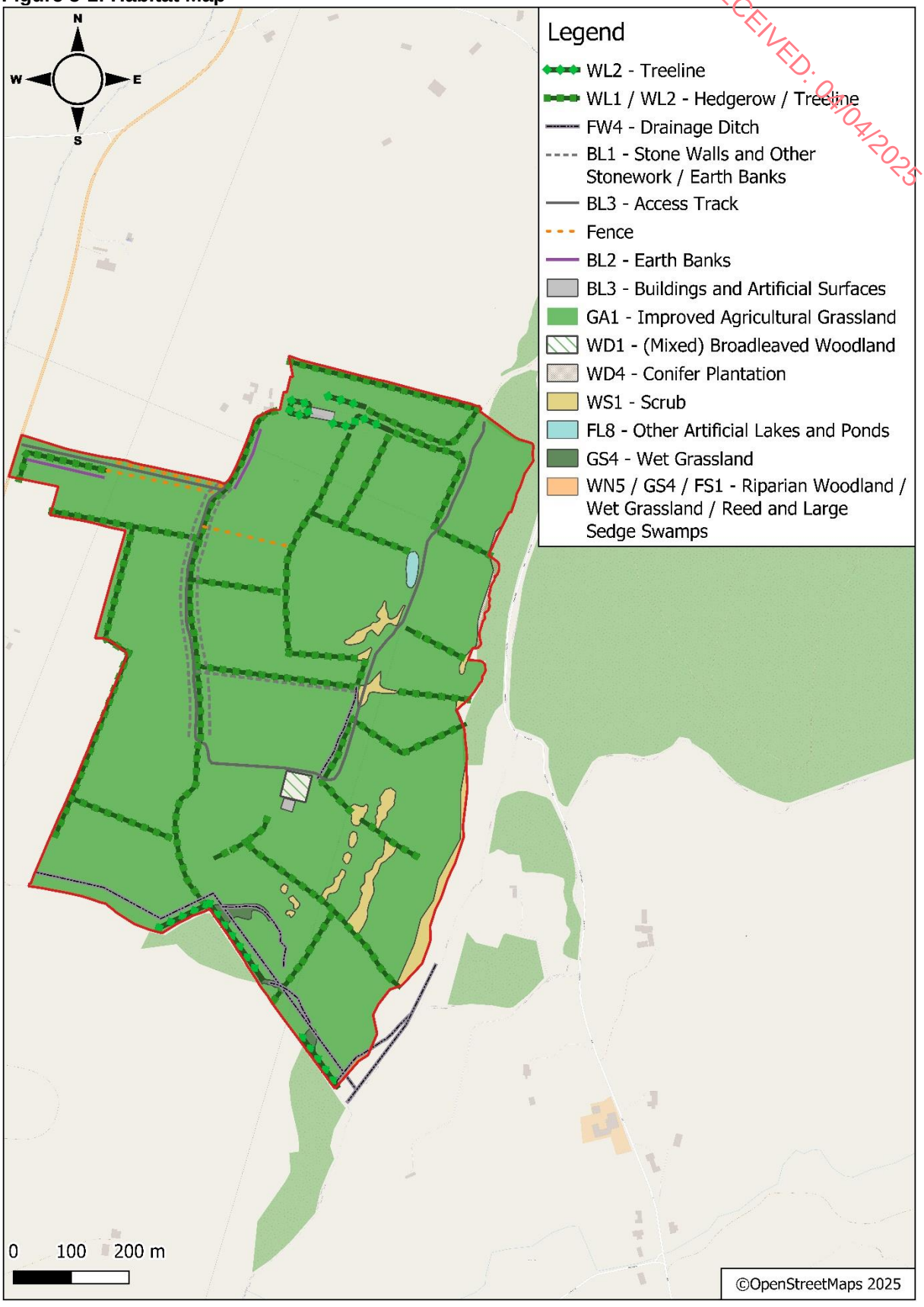
Other Artificial Lakes or Ponds (FL8)

The Mullycagh Upper Pond is located within the northeastern section of the Site. This pond was noted in the '*Wetland Surveys Ireland 2023'* [2]. According to the evaluation undertaken

by Wetland Surveys Ireland, the pond is an artificial pond that is considered to have an 'F Rating,' which is considered to be of unknown conservation value [2].

At the time of surveying, the pond was stagnant, and the water was predominantly covered by pondweed (*Potamogeton spp.*), with small areas of common reed present. The pond was surrounded by grasses and gorse. There was also evidence of cattle entering the pond and soil poaching around the edges of the pond.

Figure 5-1: Habitat Map



5.2.2 Species

5.2.2.1 Otter Survey

Specific evaluation was undertaken as part of this assessment on otters.

Otter Habitat Preference

Otters are predominantly found in aquatic habitats along rivers, estuaries, canals and in still water bodies such as lakes. An individual otter usually maintains multiple holts and couches within its territory, which can extend up to 15km. Holts are located underground and can take many forms; they use natural crevices associated with the roots of trees that grow along the river and lake banks or use burrows previously made from other animals. A holt will typically have multiple entrances, which will allow otters the opportunity to escape when disturbed. Couches are resting places above ground.

Otter can breed year-round but primarily give birth in the spring and summer months with broods consisting of 2-3 cubs.

Otters are nocturnal animals and can be described as crepuscular. At night and in dark / silty water, the otter relies on their highly sensitive whiskers to detect their prey. In clear waters, they utilise their strong eyesight to locate prey, usually along the bottom of the waterbodies. Otters are described as opportunistic predators with a broad varied diet, such as salmonids, eel, small fish species and invertebrates.

Otter Survey Results

No evidence of otter activity was identified within the Site or along the sections of any watercourse. Furthermore, no evidence of otter activity was noted along any sections of the drainage ditches.

Habitat Suitability

The NBDC does not hold any records for otter within 2km of the Site [14].

The survey did not identify any evidence of otters onsite, nor did the survey identify any suitable habitat for holt construction. Furthermore, the drainage ditches located onsite are considered suitable for commuting purposes only. The drainage ditches were considered suboptimal for foraging purposes as large sections were devoid of vegetation and suitable cover, and no suitable prey species were noted during the Site surveys.

However, the Kilbaylet Upper Stream adjacent to the Site boundary, is considered suitable for commuting and foraging otter based on the visible sections. This is based on the fact that the river appeared to have a good flow of water. However, the areas visually assessed had dense vegetation cover and may not provide suitable holting habitats.

Taking a precautionary approach, it is considered that otter may utilise the Kilbaylet Upper Stream for commuting and foraging purposes.

5.2.2.2 Breeding Bird Survey Results

A total of 28 species were recorded during the breeding bird surveys undertaken at the Site. No designated bird species for the Wicklow Mountains SPA or the Poulaphouca Reservoir SPA were identified utilising the survey area.

Of the species that were recorded:

- 21 Green BoCCI, non-annex species were recorded – blackbird, blue tit, buzzard, chaffinch, coal tit, goldfinch, great tit, great spotted woodpecker, hooded crow, jackdaw, jay, magpie, pied wagtail, reed bunting, robin, rook, song thrush, treecreeper woodpigeon and wren;

- Five Amber BoCCI listed species were recorded –goldcrest, greenfinch, linnet, sand martin and swallow; and,
- Two Red BoCCI listed species were recorded –meadow pipit and yellowhammer.

Of the species recorded onsite:

- No birds were classified as 'Confirmed Breeding';
- 23 were classified as 'Possibly Breeding'; and,
- Six were classified as 'Non-breeding.'

5.2.2.3 Wintering Bird Survey Results

A total of 35 species were recorded during the overwintering bird surveys undertaken at the Site. Of the species that were recorded:

- 27 Green BoCCI, non-Annex I species were recorded – blackbird, blue tit, buzzard, chaffinch, chiffchaff, dunnock, fieldfare, goldfinch, great black-backed gull, great tit, great spotted woodpecker, hooded crow, jackdaw, lesser redpoll, little grebe, magpie, mistle thrush, moorhen, pied wagtail, raven, reed bunting, robin, siskin, song thrush, stonechat, woodpigeon and wren;
- Six Amber BoCCI listed, non-Annex I species were recorded – greenfinch, herring gull, lesser black-backed gull, linnet, teal and starling; and,
- Two Red BoCCI listed, non-Annex I species were recorded - kestrel and meadow pipit.

No designated bird species for the Wicklow Mountains SPA were identified utilising the survey area.

Lesser black-back gull, designated under the Poulaphouca Reservoir SPA, were observed flying over the Site; however, this species was not recorded interacting with the Site. In addition, two other gull species – great black-backed gull and herring gull – were also recorded flying over the Site but not interacting within the Site.

5.2.2.4 Invasive Species

The NBDC holds records of Japanese knotweed within 2km of the Site [42]. However, no invasive plant species were identified within the Site.

An eastern grey squirrel (*Sciurus carolinensis*) was recorded onsite during the surveys. Additionally, three male Sitka deer (*Cervus nippon*) were also recorded onsite.

6 STAGE 1 SCREENING: IDENTIFICATION OF POTENTIAL SIGNIFICANT IMPACTS

6.1 Potential Significant Impacts

The potential for significant effects on the Slaney River Valley SAC, the Wicklow Mountains SPA and the Poulaphouca Reservoir were considered further in this section. The key output of this stage of the assessment is the identification of likely significant effects of the Proposed Development alone and in combination with other plans and projects on relevant European sites without the implementation of mitigation measures.

A number of factors were examined at this stage and dismissed due to the very low risk associated with them. Table 6-1, Table 6-2 and Table 6-3 present further details and rationale of the screening assessment undertaken for each of the European sites identified as having the potential to be significantly affected by the Proposed Development, in light of their site conservation objectives and best scientific knowledge.

Table 6-1: Screening Assessment: Annex I Habitats – Slaney River Valley SAC

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
Estuaries	The Conservation Objectives Report [43] show that this habitat is not present in the immediate vicinity of the Site. The nearest habitat is located approximately 82km downstream of the Site.	• Decrease in water quality due to potential pollution during the Construction Phase.	This habitat was not identified within the Site. The nearest potential point occurrence is considered to be located >100km downstream of the Site. It is considered highly unlikely that the works will have any significant direct or indirect negative effects on this habitat during either the construction or operational phase of the Proposed Development This conclusion is based on the following: • The absence of this habitat within the Site and the distance separating this habitat from the Site; • The nature of the works which comprise of minimal and temporary ground disturbance; • No in-river works will be undertaken; and, • There will be no direct discharges to any drainage ditch or EPA-designated watercourse during the construction or operational works. Furthermore, due to the distance from the Site from this habitat and the combined dilution factor from the additional tributaries discharging into the river network, it is considered highly unlikely any water quality impacts will arise from the Proposed Development. It is considered highly unlikely that any potential pollutants could reach this habitat due to the fact that pollutants will either be diluted within the watercourse or pollutants, such as sediment, will settle to the bottom of the watercourse. Nonetheless, water quality mitigation measures will be implemented as part of the proposed works to protect local water quality and therefore no likely	**Screened Out**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
			significant effects are considered likely during either construction or operation.	
Mudflats and Sandflats not covered by seawater at low tide	The Conservation Objectives show that this habitat is not present in the immediate vicinity of the Site [43].The nearest recorded location of this habitat is located over 100km away from the Site at its nearest point.	As per estuaries.	As per estuaries.	**Screened Out**
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae)*	The distribution of this habitat throughout this SAC is currently unknown [43].	As per estuaries.	As per estuaries.	**Screened Out**
Mediterranean salt meadows (Juncetalia maritimi)	The distribution of this habitat throughout this SAC is currently unknown [43].	As per estuaries.	As per estuaries.	**Screened Out**
Water courses of plain to montane levels with *the Ranunculion fluitantis* and *Callitricho - Batrachion* vegetation	The Conservation Objectives show that this habitat is not present in the immediate vicinity of the Site [43].The nearest recorded location of this habitat is located over 90km away from the Site at its nearest point.	As per estuaries.	As per estuaries.	**Screened Out**
Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles	The Conservation Objectives show that this habitat is not present in the immediate vicinity of the Site [43]. The nearest recorded location of this habitat is located over 10km away from the Site at its nearest point.	As per estuaries.	As per estuaries.	**Screened Out**
Alluvial forests with *Alnus glutinosa and Fraxinus excelsior* (*Alno-Padion, Alnion*	The Conservation Objectives show that this habitat is not present in the immediate vicinity of the Site [43]. The nearest recorded location of this	As per estuaries.	As per estuaries.	**Screened Out**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
incanae, Salicion albae)*	habitat is located over 10km away from the Site at its nearest point.			

Table 6-2: Screening Assessment: Annex II Species for the Slaney River Valley SAC

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
Otter *(Lutra lutra)*	The NBDC does not hold any records for otter within close proximity to the Site for this species within a 2km boundary of the Site [14]. The otter survey did not identify any evidence of otter onsite or within close proximity to the Site and the survey did not identify any suitable habitat for otter.	Effects associated with pollution during the construction works- Decrease in water quality – Screened In Disturbance during the construction phase – Screened Out	Otters are known to occur within the Slaney River Valley SAC. However, the Site is comprised primarily of agricultural grassland. Whilst the Site may provide commuting and some foraging opportunities, the onsite habitats are common within the wider area and are currently subject to regular disturbances from agricultural practices. Overall, the Site is not considered optimal or a site of importance for this species based on the onsite habitats and management of the Site. However, a hydrological connection has been identified between the Site to the SAC via onsite drainage ditches and the Kilbaylet Upper Stream. The Site is located ca. 4km upstream of the SAC. Therefore, it is considered highly unlikely that the works will have any significant direct or indirect negative effects on otter within the SAC during either the construction or operational phase of the Proposed Development. This conclusion is based on the following: • The distance separating the Site from the SAC; • The nature of the works which comprise of minimal and temporary ground disturbance; • No in-river works will be undertaken; and, • There will be no direct discharges to onsite drainage ditches or EPA designated watercourse.	**Screened In**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
			Furthermore, it is considered highly unlikely that any potential pollutants could reach this habitat due to the fact that pollutants will either be diluted within the watercourse, or pollutants, such as sediment, will settle to the bottom of the watercourse. However, in the event that otter move upstream into the Kilbaylet Upper Stream, there is potential that should potential pollutants flow from the Site into the river network, this could lead to a deterioration of local water quality and indirectly adversely affect the local food supplies for this species. Therefore, water quality mitigation measures will be implemented as part of the proposed works to protect local water quality and therefore no likely significant effects are considered likely during either construction or operation. It should be noted that during the construction works will be located within 150m of the Kilbaylet Upper Stream and there is potential for elevated noise levels during the construction phase. However, this work will be very temporary in nature. In addition, otter are highly mobile and therefore will move away from disturbances. Therefore, it is concluded that the Proposed Disturbance will not result in any potential noise / disturbance impacts to this species. Furthermore, during the operational phase of the Proposed Development, it is considered that there will be no disturbances to this species due to the fact that all infrastructure capable of producing noise emissions will be located ca. 180m from any watercourses.	
Salmon (*Salmo salar)*	The NBDC holds no records Atlantic salmon within 2km of the Site [14]. However, the section of the River Slaney located ca. 9km downstream of the Site is classified as salmonoid waters under S.I. 293: European Communities (Quality of Salmonid Waters) Regulations, 1988 [15].	**Main / Possible threats to the habitat include:** - Effects associated with pollution during the construction	The Site is comprised entirely of terrestrial habitat, therefore the onsite habitats are unsuitable for this species. Although this species has not been recorded within 2km of the Site, this species is known to occur within the River Slaney during parts of its life cycle.	**Screened In**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
		works - Decrease in water quality	Therefore, as previously discussed, a hydrological connection was identified between the Site and the SAC. However, given the distance from the Site from this SAC and the combined dilution factor from the additional tributaries discharging into the river network, it is considered highly unlikely any water quality impacts will arise within the SAC from the Proposed Development. It is considered highly unlikely that any potential pollutants could reach the SAC due to the fact that pollutants will either be diluted within the watercourse, or pollutants, such as sediment, will settle to the bottom of the watercourse. However, should potential pollutants from the construction works enter a watercourse and flow downstream this could lead to a deterioration of local water quality, which could indirectly affect the food supply for downstream designated species that utilise the wider River Slaney catchment. Therefore, water mitigation measures will be incorporated into the works and this species has been screened in and will require further assessment.	
Sea Lamprey (*Petromyzon marinus*)	The NBDC holds records for sea lamprey within the Slaney River catchment [14]. Although there are no records held by NBDC for the species within a 2km of the Site.	As per salmon.	As per salmon.	**Screened In**
Brook Lamprey (*Lampetra planeri*)	The NBDC holds records for sea lamprey within the River Slaney catchment [14]. Although there are no records held by NBDC for the species within a 2km of the Site.	As per salmon.	As per salmon.	**Screened In**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
River Lamprey *(Lampetra fluviatilis)*	The NBDC holds records for sea lamprey within the River Slaney catchment [14]. Although there are no records held by NBDC for the species within a 2km of the Site.	As per salmon.	As per salmon.	**Screened In**
Twaite Shad *(Alosa fallax)*	The NBDC holds no records for twaite shad within 2km of the Site [14]. The NBDC holds records for Twaite shad within the River Slaney catchment.	N/A	As per salmon.	**Screened In**
Freshwater pearl mussel (*Margaritifera margaritifera*)	The NBDC holds records for Freshwater pearl mussel within the River Slaney catchment. However, there are no recent records held by NBDC for the species within a 2km boundary of the Site. However, surveys undertaken by Ecofact in 2016 identified this species at Scarawalsh Bridge within the River Slaney upstream of the Site. The nearest record of this species is located over 60km downstream of the Site [44].	N/A	It is considered highly unlikely that the works will have a significant direct or indirect effect on this species during either the construction or operational phase of the Proposed Development. This conclusion is based on the distance downstream separating the Site from this species' known location, ca. 60km. Therefore, it is reasonable to conclude that all potential pollutants will either dilute within the River Slaney or settle to the bottom of the river before reaching this habitat.	**Screened Out**
Common *(Harbour)* Seal *(Phoca vitulina)*	The NBDC holds no records for Common *(Harbour)* Seal within 2km of the Site [14]. The nearest record of this species is located over 90km downstream of the Site [14]. As Common (Harbour) Seal are marine mammals, they will not commute into freshwater habitats upstream of the SAC that are closer to the Site.	N/A	As per Freshwater pearl mussel.	**Screened Out**

Table 6-3: Screening Assessment: Annex I Species– Wicklow Mountains SPA

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
Merlin (*Falco columbarius)*	This ground nesting species typically breeds in moorland, mountain and blanket bog habitat [45]. However, this species has also been recorded nesting in woodlands and in forestry plantations adjacent to moorland habitat [45]. In the winter this species is known be more widespread and can often be found along the coastlines [45]. This species feeds on insects, such as moths and dragonflies, but primarily feeds on small birds such as finches, meadow pipit and skylark [46]. Although suitable prey species, such as meadow pipit, were recorded onsite during the bird surveys, there was no suitable breeding habitat recorded onsite for this species. Although merlin have been known to nest in woodlands, merlin have a strong preference for conifer plantations [47]. Therefore, the onsite mixed broadleaved woodland is not considered suitable. Additionally, this species was no recorded onsite during the surveys and the NBDC holds no records for this species within 2km of the Site [14].	N/A	This species was not recorded onsite during the breeding or wintering bird surveys and the NBDC does not hold records for this species within 2km of the Site [14]. Therefore, given the lack of suitable nesting habitat for this species and the lack of observations of this species onsite during the surveys, it is considered unlikely that this species would occur onsite during the construction phase and therefore, no impacts associated with disturbance are anticipated. Furthermore, given the fact that this species is highly mobile, it is considered that should this species occur within the vicinity of the Site during the construction phase and be disturbed, this species will move to more suitable habtiats elsewhere. In addition, the biodiversity enhancement measures that will be implemented onsite will provide suitable habitat for prey species of merlin. During the operational phase there will be no moving parts and studies have found that bird collision risk from solar panels is very low [48]. Furthermore, in order to reduce collision risk, grid-formed panels are to be used as part of the development which is a principle applied to windows. Therefore, it is considered that there is no potential risk of impacts to this species during the construction or operational phases of the Proposed Development.	**Screened Out**
Peregrine Falcon (*Falco peregrinus*)	This species typically breeds on cliff ledges in coastal or inland cliff locations [49]. This species is known to utilise inland quarry cliffs or tall urban buildings for nesting purposes [50]. This species is known to move away from its breeding sites in winter and can be	As per merlin.	As per merlin.	**Screened Out**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
	found along coastal areas, especially estuaries, and also in urban cities, like central Dublin [49]. This species is known to feed on bird species including pigeon, thrushes, waders, wildfowl, gulls and seabirds [49]. The Site is not considered suitable for breeding peregrine falcon given the lack of cliff habitat within the Site. Although prey species were recorded during the bird surveys, there was no evidence of foraging peregrine falcon within the Site. Additionally, this species was no recorded onsite during the surveys and the NBDC holds no records for this species within 2km of the Site [14].			

Table 6-4: Screening Assessment: Annex I Species – Poulaphouca Reservoir SPA

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
Greylag Goose (*Anser anser*)	Greylag geese, coming from Iceland, winter in Ireland in a select few sites. Poulaphouca Reservoir is known to host a small proportion of this wintering population each year, with this number steadily declining in recent years [40] Feral populations of this species breed in Ireland in the reedy / wetland habitats of lakes and reservoirs [51]. Both the feral and the migratory populations of this species feed predominately on cereal stubble and grassland in their wintering areas [51] [52]. Although improved and wet grasslands may be considered suitable for feral and wintering greylag geese as ex-situ feeding site, it is considered unlikely that this species will utilise the Site. This conclusion	N/A	This species was not recorded onsite during the breeding or wintering bird surveys and the NBDC does not hold records for this species within 2km of the Site [14]. In addition, it is considered that the Site may provide suitable foraging habitat for this species, given the improved agricultural and wet grasslands within the Site. However, it is considered unlikely that this species will utilise the Site given the fact that this species exhibits site fidelity and the Site is not a known ex-situ feeding site. Migratory waterbirds are also susceptible to collision with solar panels that may resemble waterbodies when light reflects off the panels, also known as the 'lake effect' [55]. In such instances, waterbirds are attracted to the solar panels and attempt to land on the panels which can result	**Screened Out**

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
	is based upon the fact that – in Ireland, feral greylag geese exhibit a high level of fidelity to their wider natal area during the non-breeding season, while Icelandic migrants are known to exhibit a high level of fidelity to their wintering sites [53] [52] [54] and; the NBDC holds no records of this species within 2km of the Site during the past 10 years [14]. In addition, no potential nesting sites or suitable nesting habitat were identified within the study area.		in the bird being injured, killed or stranded [55]. However, as mentioned in Section 3.3, grid-formed panels will be used as part of the Proposed Development. These panels are designed to absorb as much light as possible, and for this reason, the panels are coated with an anti-reflective film to significantly reduce glint and glare. In addition, the grid-like panel design means that any potential reflection / glint and glare would be fragmented, a principle that is applied to windows in order to reduce collision events. Furthermore, given that the potential grid connection and cabling will be underground, there is no potential for collision risk associated with the proposed grid connection and bird species that could be utilizing the area. Additionally, the existing hedgerows / treelines that surround the entirety of the Site and the individual agricultural fields will be allowed to 'grow-out' prior to construction, and additional screen planting will be undertaken to fill any remaining gaps, all of which will provide screening between Site and the surrounding area that may be utilised by birds. Therefore, it is considered unlikely that the Proposed Development will result in a collision risk to birds within the vicinity of the Site. Furthermore, any potential disturbances will only occur during the construction phase. In addition, following the completion of the proposed works, the Site will only require 2-3 maintenance visits with small vans / jeeps, therefore, there will be a reduction in vehicular / machinery disturbance in comparison to the current maintenance regime given the fact that tractors and harvesters will not be used onsite. Furthermore, given the fact that this species is highly mobile, it is considered that should this species occur within the vicinity of the Site during the construction or operational phase and be disturbed, this species will move to more suitable habtiats elsewhere.	

Qualifying Feature of Interest	Baseline	Potential Significant Effects	Screening Rationale	Screening Conclusion
			Therefore, it is considered that there is no potential risk of impacts to this species during the construction or operational phases of the Proposed Development.	
Lesser Black-backed Gull (*Larus fuscus*)	This ground nesting species typically breeds in colonies often with other gull species Most colonies are on the coastline; however, inland colonies have been recorded in Co. Mayo and Co. Donegal [56]. The habitats utilised by breeding lesser black-backed gulls include offshore islands, islands in lakes, sand dunes and coastal cliffs. This species winters both inland and on coastal habitats [56]. This species is known to have a diet of fish, waste from fisheries, rubbish from landfills, insects, young birds and scavenging food from other birds [56]. The NBDC holds no records for Lesser black-backed gull within 2km of the Site [14].	As per greylag goose.	As per greylag goose.	**Screened Out**

6.2 Stage 1 – Analysis of 'In-Combination' Effects

The Habitats Directive requires competent authorities to make an appropriate assessment of any plan or project which is likely to have a significant effect alone or in combination with other plans and projects.

As described above, the proposed work alone is unlikely to have any direct or indirect adverse effects on any of the European sites located within 15km of the Site.

Proposed Grid Connection

The proposed grid connection route and connection are not confirmed. It is anticipated that the Proposed Development will be connected to the national grid via an onsite substation by a 38kV Tailed Cable Connection to Stratford 110kV Substation. A separate application for planning permission or a Section 5 declaration for exempted development will be submitted for this connection.

For completeness, the indicative route will be assessed as part of 'in combination effects'.

As part of this separate application, an Appropriate Assessment – Stage 1: Screening Report ('AA') will be prepared to assess the potential adverse effects, if any, of the underground cables ('UGC') on nearby sites with European conservation designations (i.e., Natura 2000 sites). Furthermore, it is not anticipated that the UGC route will have any potential for in-combination effects with the Proposed Development based on:

- The nature of the Proposed Development works;
- All proposed cable works will be confined within the Site and within existing road infrastructure;
- No in-river works will be undertaken; and,
- There will be no direct discharges to surface water or groundwater during the installation of the cable.

Review of Wicklow County Council Planning ePlan

A review of Wicklow County Council [11] did not identify any current or previous granted plans or projects in the immediate vicinity that are considered likely in combination with the Proposed Development to result in significant impacts on Slaney River Valley SAC.

However, the following planning applications listed in Table 6-5 have previously been assessed by Wicklow County Council within the planning system, all of which are located within the vicinity of the Site.

Table 6-5: Active Planning Applications within the vicinity of the Site

Application Ref	Decision	Development Description	Appropriate Assessment
19537	Granted – 23/08/2019	*temporary period of up to 5 years, of a new electricity double circuit transmission tower approximately 52 metres high at a position located between tower numbers 3 and 4 along the existing 220 kV Donard test (non energised) overhead line (OHL), and it will be used as part of an uprate trial along this test OHL, the permanent replacement of the existing single circuit tower number 3 with a new, upgraded single circuit tower of similar design and dimensions, approximately 35m in*	Stage 1 Appropriate Assessment was submitted and concluded, "*there is no direct or indirect link between the subject site and any Natura 2000 site. Therefore, the proposed development, individually or in combination with other plans or projects would not be likely to have effects on any designated Natura 2000 and therefore a stage 2 Appropriate Assessment will not be required*"

Application Ref	Decision	Development Description	Appropriate Assessment
		height, additional ancillary temporary development includes 3 no temporary pole structures, 2 no line puller / tensioners located either side of the proposed tower, a temporary landmat access road approximately 400m long and 5m wide, hardstanding areas with a combined area of approximately 840 sqm, a self contained pre fabricated site office of area 291 sqm, fencing and all other ancillary site works. The line will remain non-energised for the duration of the trial and following the conclusion of the development	

Due to the small scale and short timeframes of both the Proposed Development and the proposed projects listed in Table 6-5, it is considered unlikely to have any cumulative impacts on any European sites in the context of the existing infrastructure and associated activities taking place at the Site.

This statement is supported by:

I. The distances separating the Site from European sites;

II. The rural setting of the local environment; and,

III. The small-scale and localised nature of the proposed works.

However, as identified in Section 6.1, a number of qualifying features require further consideration and appropriate mitigation measures to ensure that the Proposed Development alone will not lead to in-combination effects with any proposed future developments.

6.3 Stage 1 – AA Screening Conclusion

A detailed assessment of the layout and nature of the Proposed Development, the construction methods to be employed and the overall activities that will occur at the Site during construction and operation has been carried out and the potential for significant effects on European sites and qualifying features of interest within the zone of influence of the Site has been examined in detail.

The boundaries of two designated sites, Wicklow Mountains SAC and Wicklow Mountains SPA were screened out given the distances separating the Site from these European sites and lack of impact pathways. It could be objectively concluded that the Proposed Development will not, either alone or in combination with other plans or projects, be likely to have significant effects on those sites.

The Poulaphouca Reservoir SPA was taken forward for further consideration based on the proximity and potential disturbance to designated bird species. A potential hydrological connection was identified between Slaney River Valley SAC and the Site, via the Kilbaylet Upper Stream, Lower Mullycagh River and Carrigower River. Therefore, these European sites were taken further for detailed consideration, Stage 2 appropriate assessment.

Using professional experience, guidance and judgement, the following factors have been taken into account in identifying potential significant effects on the identified European site:

- Distance from any European Site;
- Qualifying interests;

- Special conservation interests;
- Conservation objectives;
- The nature of the onsite habitats; and,
- The location of the Site.

The screening process has examined the potential for the Proposed Development cause to significant effects on European sites and the qualifying features of interest as per the screening determination in Section 4.

Based on the above factors and taking a precautionary approach, the screening exercise has identified the following designated habitats and species as potential receptors of significant likely effects as a result of the Proposed Development, in the absence of appropriate mitigation:

Species

- Otter (Lutra lutra);
- Salmon (Salmo salar);
- Sea Lamprey (Petromyzon marinus);
- Brook Lamprey (Lampetra planeri);
- River Lamprey (Lampetra fluviatilis); and,
- Twaite Shad (Alosa fallax).

These species have been brought forward for further consideration due to the potential for adverse effects, as a result of the Proposed Development, in the absence of the appropriate mitigation measures. Therefore, progression to Stage 2 of the Appropriate Assessment process is required in light of current case law on mitigation measures.

Section 7 below further addresses potential issues arising from the Proposed Development and the mitigation measures required to negate any potential significant likely effects on these designated habitats and species.

7 STAGE 2 NIS

7.1 Assessment of Potential Significant Effects

This section provides recommendations for measures which will mitigate against any adverse effects on the integrity of the identified European site as a result of the Proposed Development. The following effects with the potential to adversely affect the conservation objectives of the Slaney River Valley SAC were considered:

- Potential disturbance to designated species during construction; and,
- Potential impairment of water quality during the Construction Phase.

The screening exercise did not identify any other factors that will result in any likely significant effects.

7.1.1 Potential Disturbance to Designated Species

Construction noise sources have the potential to result in temporary adverse effects on the noise levels in the vicinity of the Site. However, it should be noted that during the construction phase of the Proposed Development, works will be limited to 07:30 and 18:30 hours Monday to Friday inclusive and 08:30 and 14:00 hours on Saturdays, thereby limiting the noise effects on crepuscular species, such as otter.

It should be noted that the Site is located ca.4km from the Slaney River Valley SAC and 5.5km from the Poulaphouca Reservoir SPA. It is considered that given the intervening forestry and agricultural land between the Site and the European sites that minimal disturbance will occur to the species utilising these sites.

Furthermore, given the availability of suitable habitats within the wider area it can be concluded that should these species be temporarily disrupted, they will move to a suitable area elsewhere. It is therefore concluded that any potential increases in noise as a result of the Proposed Development will not adversely affect these species.

Irrespective of this, mitigation measures will be put in place in order to ensure that there are no adverse effects on designated species due to noise emissions. These measures include:

- In advance of works, all Site personnel will receive a Site induction or toolbox talk which will include a reference to measures detailed in the CEMP;
- Activities and deliveries to the Site to occur only during permitted hours;
- All plant where possible shall be low noise rated;
- Onsite policy for all plant and equipment, including Site delivery vehicles, to power off rather than to be left with idling engines;
- All plant and vehicles on the Site will be in a fit condition for use, to prevent the addition of noise from maintenance issues;
- Management of deliveries and vehicles to minimise vehicles idling onsite;
- Careful selection of quiet plant and machinery to undertake the required work, where available; and,
- Handling of all materials will take place in a manner which minimises noise emissions.

Therefore, subject to compliance with the above measures, it can be concluded that the construction phase of the Proposed Development will not result in any adverse effects on or significant disturbance of designated species due to noise emissions.

7.1.2 Potential Impairment of Water Quality

7.1.2.1 Construction Phase

Reduction & Prevention of Suspended Solids and Contaminant Pollution

As discussed in Section 3.2 above, the Proposed Development is hydrologically connected to the River Slaney SAC via onsite drainage ditches and the Kilbaylet Upper Stream.

Should pollutants from the Proposed Development enter the nearby watercourse through surface water run-off, it is considered highly unlikely that the works will have any significant direct or indirect negative effects on otter within the SAC during either the construction or operational phase of the Proposed Development. This conclusion is based on the following:

1. The distance separating the Site from the SAC;
2. The nature of the works which comprise of minimal and temporary ground disturbance;
3. No in-river works will be undertaken; and,
4. There will be no direct discharges to any drainage ditch or EPA-designated watercourses.

Furthermore, it is considered highly unlikely that any potential pollutants could reach this habitat due to the fact that pollutants will either be diluted within the watercourse or pollutants, such as sediment, will settle to the bottom of the watercourse.

However, it is considered that potential pollutants could adversely affect local water quality and subsequently adversely affect species protected under the River Slaney SAC utilising the local river network. Therefore, as a precautionary principle, appropriate mitigation measures will be implemented in order to ensure no adverse effects occur to local water quality.

During the Construction Phase, all works will comply with all relevant legislation and best practices to reduce potential environmental impacts of the works.

As a precautionary principle, the following mitigation measures will be put in place, to ensure that water quality will be protected within the vicinity of the Site and further downstream. The measures that will be put in place to remove the risk of potential contamination and emergency procedures to be implemented in the event of an accidental release or spill of potentially contaminating substances are outlined below.

These procedures will be communicated to all relevant site staff. The following best practice guidelines will be followed, which are based on Inland Fisheries Ireland [57] and National Roads Authority ('NRA'), now known as the Transport Infrastructure Ireland ('TII'), [58] guidance documents:

- Construction stage works will be undertaken in accordance with an approved CEMP;
- All plant and machinery will be serviced before being mobilised to the Site;
- Preventative maintenance and relevant maintenance logs will be kept for all onsite plant and equipment;
- All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction;
- Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows;
- Where drainage ditches are crossed, the release of sediment over baseline conditions will be prevented by the use of silt traps, check dams and / or bunds. These will be put in place in advance of construction works and monitored on a regular basis;

- No surface water runoff will be discharged onto public roads, foul sewers or adjacent property;
- Weather conditions will be considered when planning construction activities to minimise risk of run off from the Site;
- Provision of exclusion zones and barriers between any stockpiled materials and any surface water features to prevent sediment washing into the receiving water environment;
- Entry by plant, equipment, machinery, vehicles and construction personnel into watercourses, wet drainage ditches or the river riparian zones shall not be permitted;
- An Environmental Clerk of Works shall be engaged to periodically inspect all elements of the works for their entire duration;
- Emergency response procedures will be put in place;
- All concrete pours will be carefully planned to avoid any impacts;
- Any pouring of concrete will only be carried out in dry weather. Washout of concrete trucks will not be permitted on the Site;
- Chemicals used will be biodegradable where possible;
- Where concrete is to be placed by means of a skip, the opening gate of the delivery chute will be securely fastened to prevent accidental opening;
- Where possible, concrete skips, pumps and machine buckets will be prevented from slewing over water when placing concrete;
- Surplus concrete will be returned to batch plant or offsite concrete wash facility after completion of a pour;
- Any spillage of cementitious materials will be cleaned up immediately; and,
- Measures will be implemented to minimise waste and ensure correct handling, storage and disposal of waste.

In addition, oil pollution is known to cause significant damage to aquatic communities and loss of bulk stored oil or oil from construction vehicles is likely to have an adverse impact, the severity of which would depend on the volumes of oil involved. Minor leaks have the potential to have negligible impacts, whereas larger leaks and spills could have significant negative short-term adverse impacts if not controlled.

However, these impacts are highly unlikely to occur due to the small scale of the Proposed Development, and the best practice measures will be employed to reduce these potential impacts to an absolute minimum. The proposed measures to remove the risk of potential contamination and emergency procedures to be implemented in the event of an accidental release or spill of potentially contaminating substances are outlined below.

These procedures will be communicated to all relevant site staff. At a minimum, the following measures will be in place:

- Any chemical / oils to be stored onsite will be placed within a bund on an area of hardstanding to ensure there is no seepage of pollutants into groundwater or surface water;
- All bunds will have the capacity of the largest tank volume plus 10 percent, at a minimum, with additional capacity to hold 30mm of rainfall;

- All drainage from bund areas will be directed to secure containment prior to suitable disposal;
- Fuel will be delivered onsite by a dedicated tanker or in a delivery bowser dedicated to that purpose;
- The Appointed Contactor will put in place a specific, step-by-step refuelling procedure which will be communicated to all relevant employees onsite;
- Fuels, lubricants and hydraulic fluids for equipment used in the construction site will be carefully handled to avoid spillage, properly secured against unauthorised access or vandalism, and provided with spill containment according to current best practice;
- Vehicle or equipment maintenance work will be carried out in a designated area on the Site. In the event that refuelling is required outside this area a spill tray will be employed during the refuelling operation;
- Prior to any works commencing, all construction equipment will be checked to ensure that they are mechanically sound, to avoid leaks of oil, fuel, hydraulic fluids and grease;
- Adequate spill kits including absorbent booms and other absorbent material will be maintained onsite;
- All contractor workers will be appropriately trained in the use of spill kits;
- Any sediments impacted by contamination will be excavated and stored in appropriate sealed containers for disposal offsite in accordance with all relevant waste management legislation;
- Appropriate containment facilities will be provided to ensure that any spills from vehicles are contained and removed offsite. Adequate stocks of absorbent materials, such as sand or commercially available spill kits shall be available;
- The Contractor shall ensure that all personnel working onsite are trained in pollution incident control response;
- A regular review of weather forecasts of heavy rainfall is required;
- No storage of hydrocarbons or any polluting chemicals will occur within 5m of watercourses or surface water features;
- Design and installation of fuel bowsers to be in accordance with best practice guidelines;
- Drip trays and spill kits will be kept available onsite;
- Cabins, containers, workshops, plant, materials storage and storage tanks shall not be located within 5m of any watercourse;
- Fuel and oil stores including tanks and drums will be regularly inspected for leaks and signs of damage;
- Drip trays will be used for fixed or mobile plant such as pumps and generators in order to retain oil leaks and spills; and,
- Only designated trained operators will be authorised to refuel plant onsite.

Additionally, an Ecological Clerk of works ('ECoW') will be appointed to the project to ensure that the mitigation and best practice measures will be implemented and will periodically inspect all elements of the works for their entire duration.

The mitigation measures outlined above will minimise the identified potential risks to water quality associated with the construction phase of the Proposed Development.

7.1.3 Operational Phase

The Proposed Development will result in a change of land use from agricultural grassland to PV solar arrays along with a BESS storage system. Throughout the operational phase of the Proposed Development, monitoring and maintenance will be undertaken to ensure excess runoff does not occur.

During the Operational Phase, should there be any need to carry out works requiring machinery to traffic across the proposed site, an appropriate temporary construction access surface will be used depending on the ground conditions. Significant maintenance works during the operational life of the facility are not envisaged. Should any unforeseen changes in the soil management at the Proposed Development occur, they will be detected at an early stage and remedial measures will be implemented accordingly.

Therefore, it is considered that there will be no risks to water quality during the operational phase of the Proposed Development. It can therefore be concluded that the operational activity at the proposed battery storage site will not have any adverse effects on either the surface or groundwater quality of the watercourses in the vicinity of the proposed battery storage facility, or on the protected European sites and their designated conservation interests located downstream.

7.2 Stage 2 - Analysis of 'In Combination' Effects

Based on the mitigation measures as described in Section 7.1, the Proposed Development alone will not have any direct or indirect adverse effects on the integrity of any European Sites.

Following a review of the Wicklow County Council Planning Files [11], and the Department of Housing, Local Government and Heritage's planning portal – the National Planning Application Database as listed in Table 6-5, no current or previously granted plans or projects were identified in the immediate vicinity that are considered to have the potential to have any in-combination with the Proposed Development to result in significant impacts on the integrity of European Sites.

Overall, it is considered unlikely that the Proposed Development would result in any in-combination effects with the above-mentioned developments and any other developments within the wider area, given the fact that the Proposed Development will be subject to mitigation measures to protect against water quality impairment. Therefore, following the implementation of appropriate measures, there will be no potential for in-combination effects.

It is therefore considered that the Proposed Development is unlikely to have any significant in-combination contribution to possible significant effects on the Slaney River Valley SAC and the Poulaphouca Reservoir SPA.

This statement is supported by:

I. The localised nature of the proposed works;
II. The distances separating the Site from European Sites;
III. The dilution factor between the Site and European Sites;
IV. The setting of the local environment;
V. The mitigation measures that will be put in place; and,
VI. The best practice guidelines which will be implemented during the construction and operational phase of the proposed development.

Taking the above into account and given the fact that the aforementioned projects will not result in any adverse effects to European Designated Sites, it can be concluded that the proposed development will not result in any in combination contribution to adverse effects on the integrity of any European Sites.

8 NIS CONCLUSIONS AND STATEMENT

A detailed assessment of the layout and nature of the Proposed Development, the construction methods to be employed and the overall activities that will occur at the Site during both the construction and operational phases has been carried out and the potential for significant effects on European sites and qualifying features of interest within the zone of influence of the Site has been examined in detail.

As detailed in section 6.3, the Stage 1 AA Screening conclusion states that the boundaries of one (1) European Site, the River Slaney SAC were taken forward for further consideration due to the potential hydrological connectivity via the Kilbaylet Upper Stream. The Poulaphouca Reservoir SPA was also taken forward for further consideration based on the proximity and potential disturbance to designated bird species.

No other European sites were identified within the zone of influence of the Proposed Development.

Avoidance, design requirements and mitigation measures are detailed within this NIS which will ensure that any impacts on the River Slaney SAC or any other European site, having regard to their conservation objectives, will be avoided during all phases of the Proposed Development, such that there will be no adverse effects on the integrity of any European sites.

Following an examination, analysis and evaluation of the relevant information, including the nature of the predicted impacts from the Proposed Development and all associated works, it has been objectively concluded that with the implementation of the proposed mitigation measures, the Proposed Development will not, either alone or in combination with other plans or projects, adversely affect the integrity or conservation status of any of the qualifying interests of the River Slaney SAC or any other European site in light of best scientific knowledge. No reasonable scientific doubt exists in relation to this conclusion.

Accordingly, progression to Stage 3 of the Appropriate Assessment process (i.e. Assessment of Alternatives Solutions) is not considered necessary.

9 REFERENCES

[1] OPR, "Appropriate Assessment Screening for Development Management," 2021.

[2] European Commision, "Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC," Brussels, 2021.

[3] CIEEM, "Guidelines for Ecological Impact Assessment in the UK and Ireland (Terrestrial, Freshwater, Coastal and Marine), Version 1.2," 2022.

[4] EC, "Managing Natura 2000 Sites: The Provision of Article 6 of the Habitats Directive 92/43/EEC," European Commision, 2018.

[5] DoEHLG, "Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities," Department of the Environment, Heritage and Local Government, 2010.

[6] DoEHLG, "Appropriate Assessment under Article 6 of the Habitats Directive; Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10," Department of Environment,Heritage and Local Government, 2010.

[7] Statutory Instruments, "S.I No. 477/2011 - European Communities (Bird and Natural Habitats) Regulations 2011," European Commission, 2011.

[8] L. M. Cooper, "Guidelines for Cumulative Effects Assessment in SEA of plans.," Imperial College London., 2004.

[9] OPW, "ArteriaDrainage Maintenance categories, Source » Pathway » Receptor Chains for Appropriate Assessment," OPW, Galway, 2012.

[10] NPWS, "National Parks and Wildlife Service," 2025. [Online]. Available: https://www.npws.ie.

[11] WCC, "Wicklow County Council Planning Portal," 2025. [Online]. Available: https://www.eplanning.ie/WicklowCC/searchexact.

[12] Department of Housing, Local Government and Heritage, "National Planning Application Database," 2022. [Online]. Available: https://housinggovie.maps.arcgis.com/apps/webappviewer/index.html?id=9cf2a09799d74d8e9316a3d3a4d3a8de.

[13] BirdWatch Ireland, "Irish Wetland Bird Survey," 2025. [Online]. Available: https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey/.

[14] NBDC, "National Biodiveristy Live Maps," 2025. [Online]. Available: http://maps.biodiversityireland.ie/.

[15] EPA, "EPA Map Viewer," 2025. [Online]. Available: https://gis.epa.ie/EPAMaps/.

[16] J. A. Fossitt, A Guide to Habitats in Ireland, Dublin: The Heritage Council, 2000.

[17] Irish Ramsar Wetlands Committee, "Irish Wetland Types- an identification guide and field survey manual," Environmental Protection Agency, 2018.

[18] SNH, "Technical Advice Note #2: Otter Surveys," Scottish Natural Heritage, 2017.

[19] DoAHG, "National Otter Survey of Ireland," *Irish Wildlife Manuals ,* no. No. 76, 2013.

[20] NRA, "Ecological Surveying Techniques for Protected Flora and Fauna".

[21] J. Ferguson-Lee, R. Castell and D. Leech, A Field Guide to Monitoring Nests, Norfolk, United Kingdom: British Trust for Ornithology, 2011.

[22] G. Gilbert, D. Gibbons and J. Evans, Bird Monitoring Methods, Exeter, United Kingdom: Pelagic Publishing, 1998.

[23] BTO, "Common Bird Census in Bird Monitoring Methods".

[24] C. Bibby, N. Burgess, D. Hill and S. Mustoe, Bird Census Techniques, Second Edition ed., Academic Press, 2000.

[25] Statutory Instruments, "S.I No. 477/2011 - European Communities (Bird and Natural Habitats) Regulations 2011," European Commission, 2011.

[26] Wetland Surveys Ireland and Foss Environmental Consulting, "Map of Irish Wetlands," NPWS, 2025. [Online]. Available: https://wetland.maps.arcgis.com/apps/View/index.html?appid=e13b75c3bcab4932b992aa0169aa4a32&extent=-12.6266,51.3236,-3.2168,55.4102. [Accessed 2025].

[27] European Commission, "Science for Environment Policy; Reducing the potential 'ecological trap' of solar panels," European Commission DG ENV, England, 2011.

[28] CIRIA, "CIRIA C532 Control of Water Pollution from Construction, Guidance for Consultants and Contractors," Construction Industry Research and Information Association , 2001.

[29] CIRIA, "C811- Environmental Good Practice on Site (5th edition)," London, 2023.

[30] CIRIA, "C741 - Environmental Good Practice on Site (4th edition)," Construction Industry Research and Information Association , 2015.

[31] CIRIA, "C648 - Control of Water Pollution from Linear Construction Projects Technical Guidance," 2006.

[32] NRA, "Guidelines for the Treatment of Otters prior to the Constrcution of National Road Schemes," National Roads Authority, 2006.

[33] IFI, "Guidance and Protection of Fisheries during Construction Works in an adjacent to Water," IFI, Dublin, 2016.

[34] NRA, "Guidelines for Assessment of Ecological Impacts of National Roads Schemes," National Roads Authority , 2009.

[35] NRA, "Guidelines on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads," National Roads Authority, 2010.

[36] IAQM, "Guidelines on the assessment of dust from demolition and construction," 2014.

[37] National Roads Authority, "Guidelines for the Treatment of Otters prior to the Constrcution of National Road Schemes," National Roads Authority, 2006.

[38] N. H. K. S. J. Cutts, "Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning and Construction Projects," 2013.

[39] N. Reid, B. Hayden, M. Lundy, S. Pietravalle, R. McDonald and W. Montgomery, "National Otter Survey of Ireland 2010/12: Irish Wildlife Manuals No. 76," NPWS, 2013.

[40] EC, "S.I. No. 374/2024 - European Union (Invasive Alien Species) Regulations 2024," European Union, 26 07 2024. [Online]. Available: https://www.irishstatutebook.ie/eli/2024/si/374/made/en/print.

[41] NPWS, "Site Synopsis: Poulaphouca Reservoir SPA," NPWS, 2014.

[42] CIEEM, "Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater, Coastal and Marine," Chartered Institute of Ecology and Environmental Management (CIEEM), Winchester, 2018.

[43] NBDC, "National Biodiveristy Live Maps," 2025. [Online]. Available: http://maps.biodiversityireland.ie/.

[44] NPWS, "Slaney River Valley SAC," National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht., 2011.

[45] Ecofact, "Freshwater Pearl Mussel Survey:," Ecofact , 2016.

[46] BirdWatch Ireland, "Merlin," 2025. [Online]. Available: https://birdwatchireland.ie/birds/merlin/. [Accessed 2025].

[47] J. Lusby, "Species Focus: Merlins Uncovered," BirdWatch Ireland, 2019.

[48] J. Lusby, I. Corkery, S. McGuiness, D. Fernández-Bellon, L. Toal, D. Norriss, D. Breen, A. O'Donaill, D. Clarke, S. Irwin, J. Quinn and J. O'Halloran, "Breeding ecology and habitat selection of Merlin Falco columbarius in forested landscapes," *Bird Study,* vol. 64, no. 4, pp. 445-454, 2017.

[49] Natural England, "Evidence review of the impact of solar farms on birds, bats and general ecology (NEER012)," Manchester Metropolitan University, 2016.

[50] BirdWatch Ireland, "Peregrine Falcon," 2025. [Online]. Available: https://birdwatchireland.ie/birds/peregrine-falcon/. [Accessed 2025].

[51] B. Ireland, "Ireland's Falcons: A beginner's guide to Ireland's birds," *Wings,* pp. 12-13, 2021.

[52] BirdWatch Ireland, "Greylag Goose," 2025. [Online]. Available: https://birdwatchireland.ie/birds/greylag-goose/.

[53] B. Burke, N. Fitzgerald, S. Kelly and L. Lewis, "Greylag and Pink-footed geese in Ireland 2017/18-19/20. Irish Wetland Bird Survey (I-WeBS) Report," BirdWatch Ireland, Wicklow, 2022.

[54] H. Boland and O. Crowe, "An assessment of the distribution range of Greylag (Icelandic-breeding & feral populations) in Ireland," National Parks and Wildlife Service; Northern Ireland Environment Agency, 2008.

[55] L. J. Lewis, B. Burke, N. Fitzgerald, T. D. Tierney and S. Kelly, "Irish Wetland Bird Survey: Waterbird Status and Distribution 2009/10 - 2015/16," National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland, Dublin, 2019.

[56] R. Chock, B. Clucas, E. Peterson, B. Blackwell, D. Blumstein, K. Church, E. Fernández-Juricic, G. Francescoli, A. Greggor, P. Kemp, G. Pinho, P. Sanzenbacher, B. Schulte and P. Toni, "Evaluating potential effects of solar power facilities on wildlife from an animal behavior perspective," *Conservation Science and Practice,* 2020.

[57] BirdWatchIreland, "Lesser Black-backed Gull," 2025. [Online]. Available: https://birdwatchireland.ie/birds/lesser-black-backed-gull/.

[58] IFI, "Guidelines on Protection of Fisheries Durin Construction Works in and Adjacent to Waters," Inland Fisheries Ireland, 2016.

[59] NRA, "Guidelines for the crossing of watercourses during the constrcution of national road schemes," National Roads Authority, 2005.

[60] S. Gillings, A. Wilson, G. Conway, V. J.A., R. Fuller, P. Beavan, S. Newson, D. Noble and M. Toms, "Winter Farmland Bird Survey: BTO research Report No.494," British Trust for Ornithology, 2008.

[61] Scottish Natural Heritage, "Recommended bird survey methods to inform impact assessment of onshore wind farms – Version 2.," 2017.

[62] T. DeVault, T. Seamans, J. Schmidt, J. Belant, B. Blackwell, N. Mooers, L. Tyson and L. Van Pelt, "Bird use of solar photovoltaic installations at US," *Landscape and Urban Planning,* pp. 122-128, 2014.

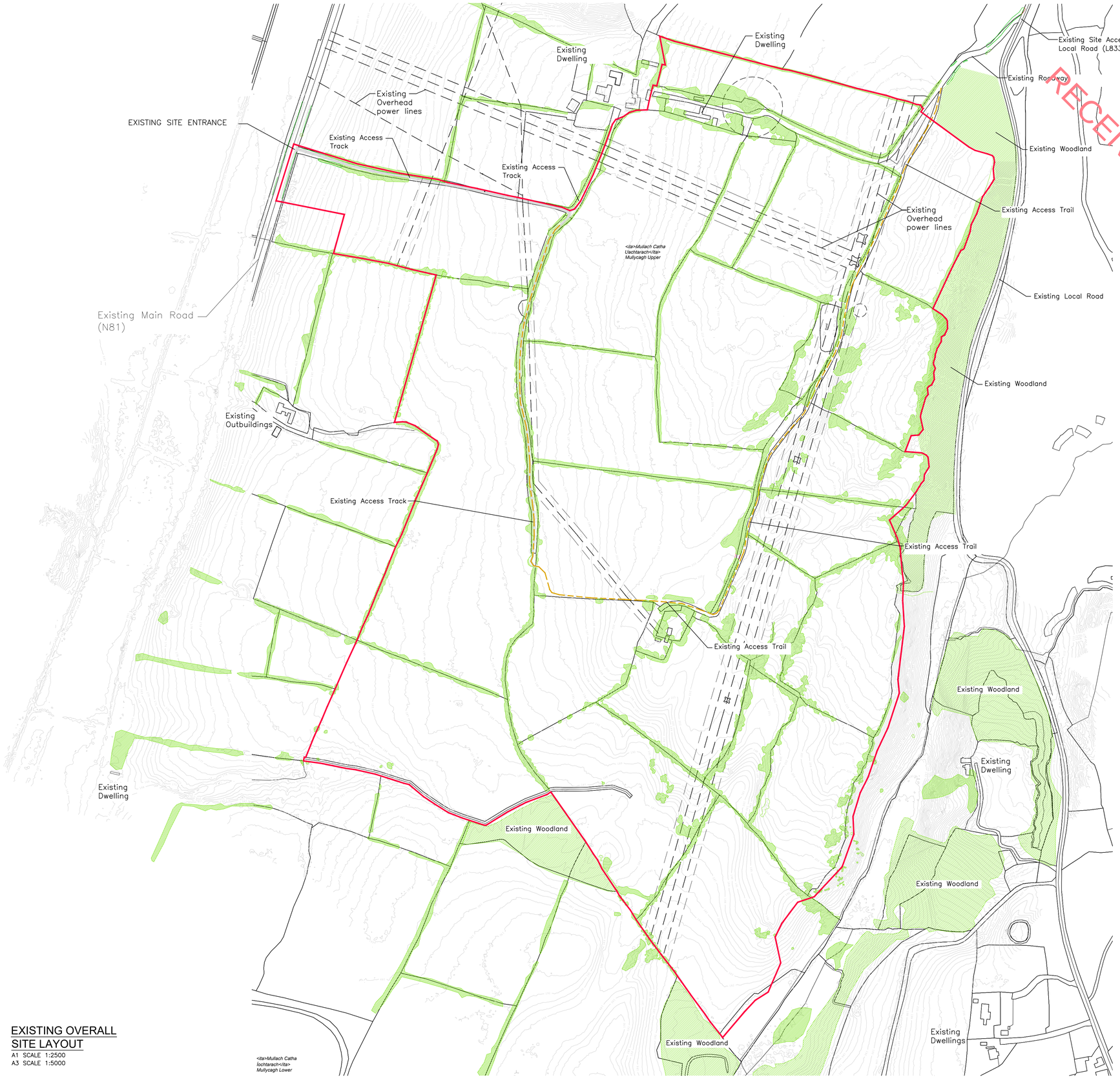
[63] NBDC, "National Biodiveristy Live Maps," 2024. [Online]. Available: http://maps.biodiversityireland.ie/.

[64] BirdWatchIreland, "Irish Wetland Bird Survey," 2025. [Online]. Available: https://birdwatchireland.ie/our-work/surveys-research/research-surveys/irish-wetland-bird-survey/.

APPENDICES

APPENDIX A

DON'T SCALE DIMENSIONS



RECEIVED: 04/04/2025

Notes:

1. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR STORED IN ANY RETRIEVAL SYSTEM OF ANY NATURE WITHOUT THE WRITTEN PERMISSION OF MALONE O'REGAN CONSULTING ENGINEERS AS COPYRIGHT HOLDER EXCEPT AS AGREED FOR USE ON THE PROJECT FOR WHICH THE DRAWING WAS ORIGINALLY ISSUED.
2. THE APPOINTMENT OF THE PROJECT SUPERVISOR DESIGN PROCESS IS THE CLIENT'S RESPONSIBILITY.
3. ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.
5. THIS DRAWING TO BE READ IN ACCORDANCE WITH ALL RELEVANT ENGINEERS' DRAWINGS AND SPECIFICATIONS.

LEGEND

- SITE AREA RELATING TO THIS PLANNING APPLICATION (65.4 Hec or 161.6 Acres)
- EXISTING GROUND LEVEL CONTOURS — 36 —
- EXISTING VEGETATION (HEDGROWS, TREES, SCRUB)
- EXISTING ACCESS TRACK
- EXISTING ACCESS TRAIL

EXISTING OVERALL SITE LAYOUT

A1 SCALE 1:2500
A3 SCALE 1:5000

Rev.	Description	Date	Drawn	Chkd	Appr
P	PLANNING ISSUE	14.02.2025	SOC	JB	JB

THIS DRAWING TO BE USED FOR PLANNING PURPOSES ONLY

MALONE O'REGAN CONSULTING ENGINEERS
3-4 Canada Street
Waterford
Co. Waterford.
X91 V52K
Tel: +353 51 876 855
Email: waterford@morce.ie
Web: www.maloneoregan.com
Offices also in:
DUBLIN : Tel: +353 1 260 2655 Email: dublin@morce.ie
GALWAY: Tel: +353 91 531 069 Email: galway@morce.ie
LONDON: Tel: +44 208 5281685 Email: london@morce.ie

Client: WICKLOW RENEWABLE

Job: PROPOSED SOLAR FARM DEVELOPMENT AT MULLYCAGH, CO. WICKLOW.

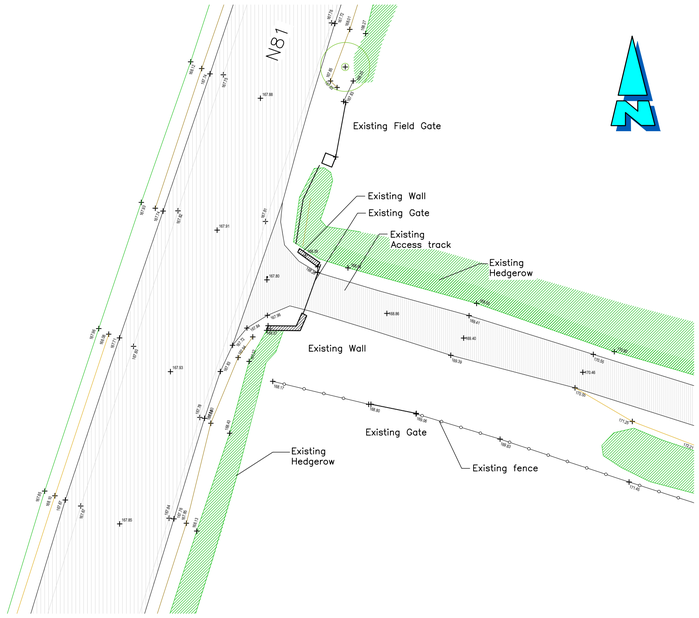
Drawing: EXISTING OVERALL SITE LAYOUT

Job No	Drg No	Stage	Revision	Scale
W23028	P802	PL	P	A1 1:2500 A3 1:5000

R:\2023\W23028\07 Design and Drawings\1 MOR\PL - Planning\P802_ P- P809 _P Existing Layouts.dwg

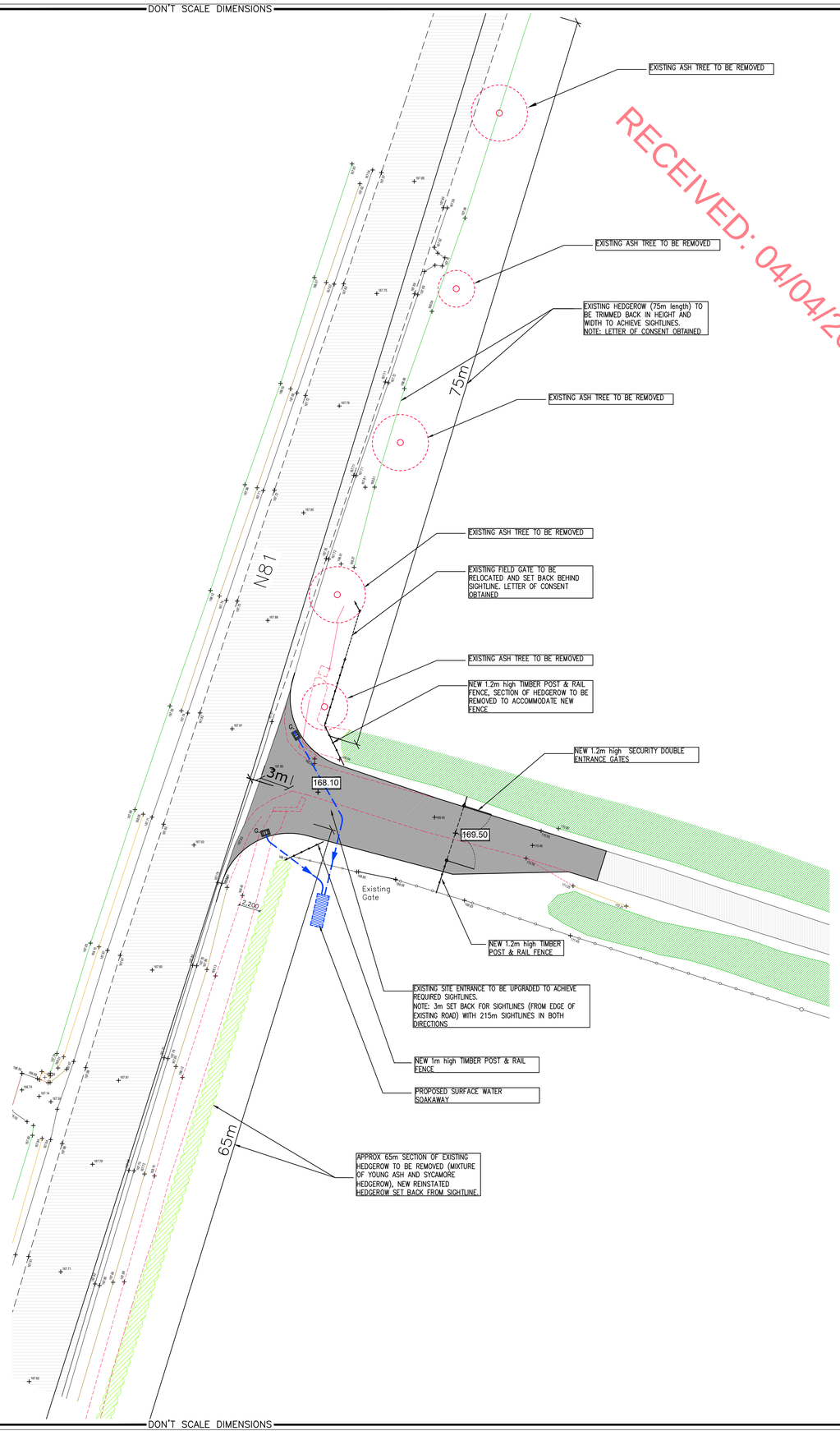
DON'T SCALE DIMENSIONS

DON'T SCALE DIMENSIONS



EXISTING SITE LAYOUT

A1 SCALE 1:250
A3 SCALE 1:500



PROPOSED SITE LAYOUT- UPGRADING WORKS TO EXISTING SITE ENTRANCE

A1 SCALE 1:250
A3 SCALE 1:500

Notes:

1. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR STORED IN ANY RETRIEVAL SYSTEM OF ANY NATURE WITHOUT THE WRITTEN PERMISSION OF MALONE O'REGAN CONSULTING ENGINEERS AS COPYRIGHT HOLDER EXCEPT AS AGREED FOR USE ON THE PROJECT FOR WHICH THE DRAWING WAS ORIGINALLY ISSUED.
2. THE APPOINTMENT OF THE PROJECT SUPERVISOR DESIGN PROCESS IS THE CLIENT'S RESPONSIBILITY.
3. ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
4. THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.
5. THIS DRAWING TO BE READ IN ACCORDANCE WITH ALL RELEVANT ENGINEERS' DRAWINGS AND SPECIFICATIONS.

LEGEND

- EXISTING GROUND LEVEL (+ 187.91)
- EXISTING VEGETATION (HEDGROWS, TREES, SCRUB)
- EXISTING ACCESS TRACK
- NEW STONE MASTIC ASPHALT (S.M.A) ROAD FINISH FOR UPGRADED SITE ENTRANCE
- EXISTING HEDGEROW/ TREES TO BE REMOVED (TO ACHIEVE SIGHTLINES)
- NOTE: ASH DIEBACK IS PRESENT ON EXISTING ASH TREES TO BE REMOVED
- PROPOSED REINSTATED HEDGEROW
- PROPOSED LEVELS (TO TIE IN WITH EXISTING) + 99.999
- NOTE– RED SITE BOUNDARY LINE (AREA RELATING TO PLANNING APPLICATION) OMITTED FOR CLARITY PURPOSES.
- EXISTING SITE ENTRANCE TO BE UPGRADED TO ACHIEVE REQUIRED SIGHTLINES.

Rev.	Description	Date	Drawn	Chkd	Appr
P	PLANNING ISSUE	14.02.2025	SOC	JB	JB

THIS DRAWING TO BE USED FOR PLANNING PURPOSES ONLY

MALONE O'REGAN CONSULTING ENGINEERS
3-4 Canada Street
Waterford
Co. Waterford.
X91 V52K
Tel: +353 51 876 855
Email: waterford@morce.ie
Web: www.maloneoregan.com
Offices also in:
DUBLIN : Tel: +353 1 260 2655 Email: dublin@morce.ie
GALWAY: Tel: +353 91 531 069 Email: galway@morce.ie
LONDON: Tel: +44 208 5281685 Email: london@morce.ie

Client: WICKLOW RENEWABLES LTD

Job: PROPOSED SOLAR FARM DEVELOPMENT AT MULLYCAGH, CO. WICKLOW.

Drawing: PROPOSED UPGRADING WORKS TO EXISTING SITE ENTRANCE

Job No	Drg No	Stage	Revision	Scale
W23028	P818	PL	P	A1 1:250 A3 1:500

DON'T SCALE DIMENSIONS

R:\2023\w23028\07 Design and Drawings\1 MOR\PL - Planning\P805_ P- P818_ P Proposed Layouts.dwg