December 2022

Stage 2: Appropriate Assessment -

Natura Impact Statement

Proposed 220kV Substation and Grid Connection at Toomes and Monvallet, Co. Louth

STRATEGIC POWER PROJECTS

On behalf of

Strategic Power Projects Ltd

Toomes and Monvallet, Co. Louth

MALONE O'REGAN ENVIRONMENTAL

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Stage 2: Appropriate Assessment - Natura Impact Statement

Proposed 220kV Substation and Grid Connection at Toomes and Monvallet, Co. Louth

Strategic Power Projects Ltd

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1 INTRODUCTION

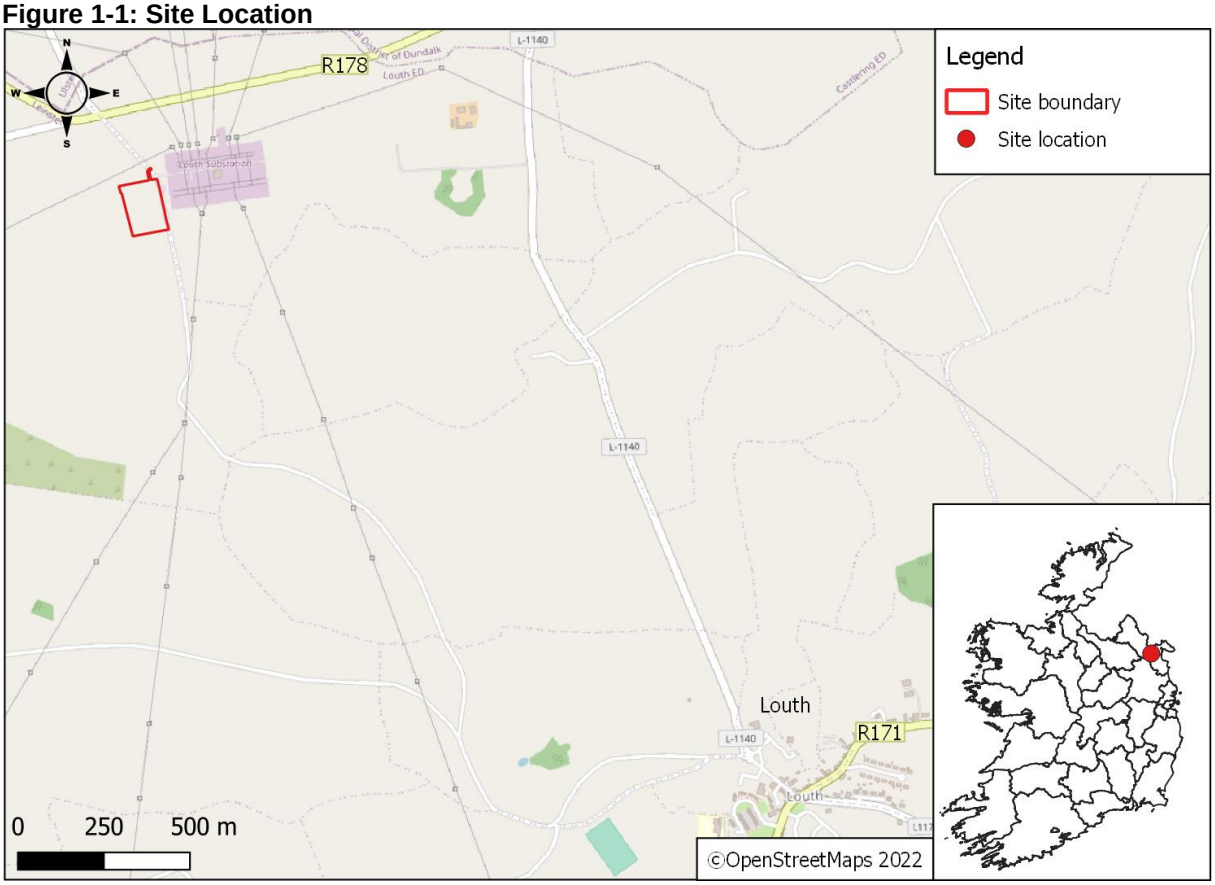
Malone O'Regan Environmental (MOR) have been commissioned by Strategic Power Projects Ltd. ('the Applicant') to undertake an Appropriate Assessment to assess the likely significant effects, if any, in respect of the construction and operational phase of a proposed 220kV substation along with associated grid connection and infrastructure (the 'Proposed Development') at Toomes and Monvallet, Co. Louth (OSI Grid Reference ITM 693889, 802864). on nearby sites with European conservation designations (i.e., Natura 2000 sites).

The Proposed Development will be located on a site that is ca. 1.8 hectares (ha) in size and is located within the townlands of Toomes and Monvallet, Co. Louth, ca. 2.5km northwest of Louth Village and is shown in Figure 1-1 ('the Site'). Planning permission has already been granted for two 37KV substations at this location. Meaningful engagement could only begin with EirGrid following receipt of planning permission for these substations. The Applicant is advised that the opportunity for a grid connection into the adjoining EirGrid Louth 275kV Substation is located on the 220kV side of the substation, and not the 110kV side. For this reason, and in order to accommodate two additional phases of solar development, there is now a need to seek permission for a proposed 220kV substation in order to provide a viable connection into the national grid.

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 Natura 2000 sites. This report seeks to determine whether the Proposed Development will, on its own or in-combination with other plans / projects have likely significant effects on Natura 2000 sites within a defined radius of the Site.

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

Figure 1-1: Site Location



1.1 Background

The Proposed Development will be critical infrastructure that will be intrinsically linked to both permitted and planned renewable energy projects, comprising of both solar and battery energy storage developments. Details of these projects are described below. These renewable energy projects will not be able to function as standalone developments as they will be reliant on connections to the Proposed Development in order to connect to the national grid.

For the purpose of this report 'Permitted Developments' will refer to Phase 1 PR 21/631 and its subsequent extension Phase 2 PR 21/1478. 'Proposed Final Phase' will refer to Phase 3 PR 22/534 as detailed below and illustrated in Figure 1-2.

Louth County Council Ref. No: 21/631 (Phase 1 - Granted)

This permitted development is for the construction of a solar PV and battery energy storage system development with associated substations and grid connections on a ca.42.23ha site.

The Proposed Development will be superseding the following elements of PR: 21/631 only:

- 2 no. 37kV sub-stations, one serving the solar PV development, the other serving the battery energy storage system development;
- 2 no. grid connections to Louth (Monvallet) 275kV substation.

Louth County Council Ref. No: PA 21/1478 (Phase 2 - Granted)

PR 21/631 was subject to an amendment and extension planning application (PR 21/1478). This permitted development will be for alterations and extension to the solar PV and battery energy storage system development permitted under PR. 21/631. This extension will increase the area to be developed by ca.32.93ha for both solar PV and battery storage to the east and northeast of PR 21/631.

The Proposed Development will not supersede any part of Phase 2, but instead will facilitate the connection of it to the national grid.

1.1.1 Proposed Final Phase

Louth County Council Ref. No: 22/534 (Phase 3 – Pending)

A 10 Year Planning Permission is currently being sought for a solar PV development to be developed as an extension of the solar PV development permitted under Ref. No. 21/631 on a site with a total area of c.81.37ha. This application is at an advanced stage of the planning process with a Notification of Decision to Grant issued by Louth County Council (LCC) on the 14/12/22.

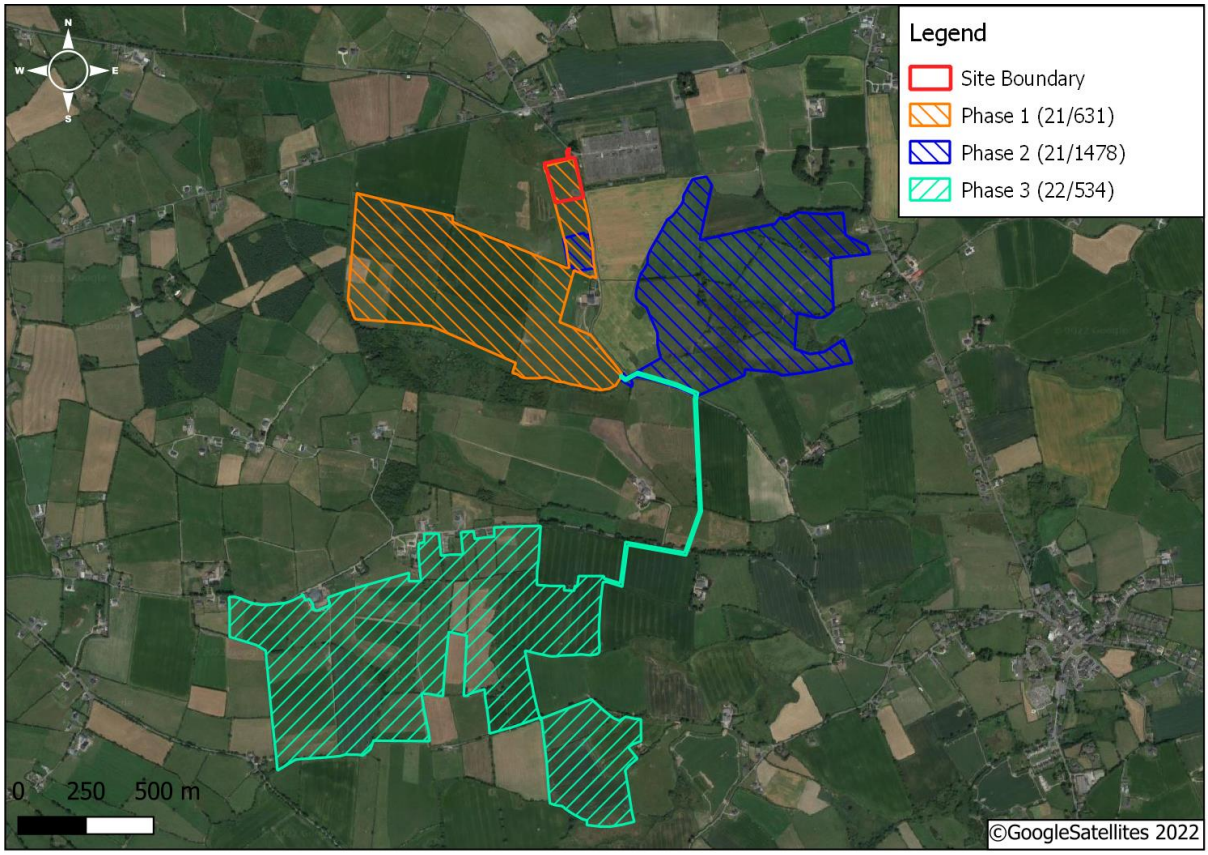
The Proposed Development will not supersede any part of Phase 3, but instead will facilitate the connection of it to the national grid.

1.2 Need for the Proposed Development

The Proposed Development will connect a large renewable energy project with the national grid. This will provide much needed green electricity to the grid to assist in decarbonising the Irish electrical network. This will include 75ha of permitted solar development providing an estimated ~65MW and 285MW from BESS. It is also intended that the Proposed Development will connect to a final phase of this solar development that, if granted planning permission, will provide an additional ~72MW, bringing the total supply from the solar development to 137MW of electricity. This amount of renewable energy requires a 220kV connection to the grid. The entire Strategic Power Project development in Monvallet, if all permitted, will utilise the full capacity a 220kV bay in the Louth 275kV substation. In order to deliver the permitted and proposed renewable energy projects there is a clear technical need for the Proposed Development.

The Proposed Development is presented in context with the Permitted Developments (PR 21/631 and PR 21/1478) along with the Proposed Final Phase that is still subject to planning (22/534) in Figure 1-2.

Figure 1-2: Development Overview



1.3 The Applicant

The applicant, Strategic Power Projects Limited (SPP) is a leading renewables developer that has partnered with Gresham House, a specialist alternative asset manager, to deliver renewable energy into new build solar and battery storage assets throughout Ireland. The partnership is expected to have a combined capacity of well over 1GW across Northern Ireland and the Republic of Ireland, with site locations secured close to major electricity grid infrastructure hubs.

SPP is a market leader in renewable energy development in Ireland, with a history in planning and site development since 2003. Gresham House New Energy is the clean energy division of specialist alternative investment manager Gresham House. The Gresham House New Energy team has a proven track record in developing and operating renewable energy and Battery Energy Storage Systems (BESS) assets and is currently managing approximately 656MW of capacity. The partnership with SPP builds upon Gresham House's agreements with Anesco to acquire a 200MW portfolio of greenfield solar projects in the UK (announced January 2021). Gresham House Asset Management is the FCA authorised operating business of Gresham House plc, a London Stock Exchange quoted specialist alternative asset manager. Gresham House is committed to operating responsibly and sustainably, taking the long view in delivering sustainable investment solutions.

SPP recently prepared, managed, and secured planning approval for ca. 42ha and ca. 33ha. of Solar PV capacity in Co. Louth, which also had a BESS component. These were located to the south and east of the Proposed Development. Additionally, the SPP team have also recently helped secure planning approval for ca. 130ha solar PV farm alongside a 50MW BESS component in Rhode, Co. Offaly.

1.4 Statement of Authority

The report was reviewed and approved by Ms. Kathryn Broderick, Senior Environmental Consultant. Kathryn has over 6 years' experience working in the ecological consultancy sector, including the preparation of Appropriate Assessments, habitat surveys and specialist protected species surveys.

This report was also reviewed and approved by Mr. Dyfrig Hubble, Associate Director - Ecologist. Dyfrig is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Dyfrig has over 15 years' experience working in the ecological consultancy sector, including habitat surveys and appraisals and specialist protected species surveys in support of Appropriate Assessments.

1.5 Regulatory Context

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

- *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,* Department of Environment, Housing and Local Government (DEGLH) [5]; and,
- *Appropriate Assessment under Article 6 of the Habitats Directive; Guidance for Planning Authorities. Circular NPW 1/10 and PSSP 2/10*, Department of Environment, Housing and Local Government (DEGLH) [6].

This Natura Impact Statement (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 legal protection for 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.

For completeness, the Planning Acts state "European site" means:

a. A candidate site of Community Importance;
b. A site of Community Importance, F815 [(ba) a candidate Special Area of Conservation];
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").Article 6(3)

and 6(4) of the Habitats Directive set out the decision-making tests for plans and projects likely to affect Natura 2000 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.

1.6 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, where 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 of the area which the Proposed Development may potentially affect the conservation objectives (or qualifying interests) of a Natura 2000 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 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.

Definition of the Zone of Influence for the proposed works includes evaluating the following:

- Identification of the Natura 2000 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 Natura 2000 sites;
- Identification of the environmental conditions that stabilise and increase the qualifying interests of the Natura sites towards favourable conservation status;
- Identification of the threats/impacts – actual or potential that could negatively impact the conservation objectives for the Natura 2000 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

Natura 2000 sites are only at risk from significant effects where a source-pathway-receptor link exists between a Proposed Development and a Natura 2000 sites. 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 Natura 2000 site), or an indirect impact where impacts outside of the Natura 2000 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 Natura 2000 site have been assessed using a source-pathway-receptor model. A source-pathway-receptor model is a standard tool used in environmental assessment [7] [8]. 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.
- A *receptor*: the qualifying interests and / or special conservation interests of the Natura 2000 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 Natura 2000 sites relevant to this assessment [9];
- The Louth County Council Planning Portal to obtain details about existing / proposed developments in the vicinity of the Site [10];
- 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 [13];
- The National Biodiversity Data Centre (NBDC) website was consulted with regard to species distributions [11]; and,
- The EPA Envision website was consulted to obtain details about watercourses in the vicinity of the Site [12].

2.3 Field Based Studies

2.3.1 Habitat Survey

An initial Site assessment was undertaken on 23rd October 2020 by one (1No.) suitably qualified and experienced MOR ecologist to establish baseline conditions onsite. During this assessment, a habitat survey was undertaken at the Site using the Heritage Councils '*A Guide to Habitats in Ireland'* [13]. This is the standard habitat classification system used in Ireland and includes both a desk based and field-based assessment.

Updated field surveys were also undertaken on 2nd March 2021 and 28th September 2022 by two (2No.) suitably qualified and experienced MOR ecologists.

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 Birds

Any bird activity onsite and potential nesting habitats were noted.

2.3.3 Invasive Species

The Site was also assessed for the presence of any noxious / invasive species such as Japanese knotweed (*Fallopia japonica*) and any other invasive species within the Site and adjacent area.

2.3.4 Other Species

In addition, as part of the overall ecological assessment for the Site, an assessment was carried out for the potential of the Proposed Development 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 1 Species and Habitats identified as part of the study.

2.4 Survey Conditions and Limitations

The most recent habitat survey was undertaken at the end of the optimal period for botanical assessments. However, given the Site comprises predominately agricultural lands, it is not considered that this would materially alter the findings of the assessment. It is considered that that are no significant limitations to the present assessment of the ecological value of the Site.

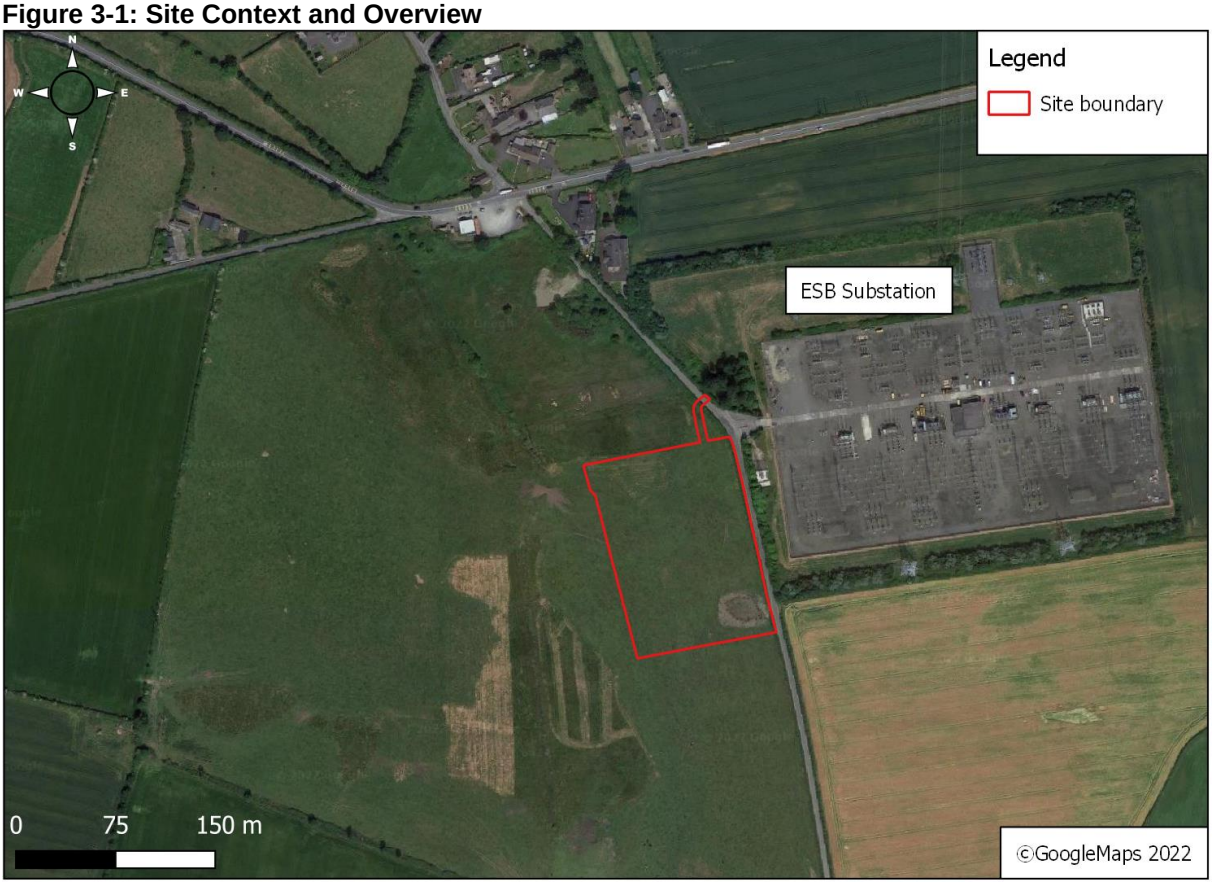
3 DESCRIPTION OF THE PROJECT

3.1 Site Context

The Site is located on a ca. 1.8 hectares (ha) site, which is located ca. 2.5 km northwest of Louth Village, Co. Louth. The Site is accessed via the local road L5141 off the regional road R178 and is shown below in Figure 3-1.

The Site is comprised of agricultural grassland and hedgerows.

Figure 3-1: Site Context and Overview



3.2 Watercourses within the Vicinity of the Site

The Site is situated within the Newry, Fane, Glyde and Dee Catchment [Catchment_ID: 06] and the Fane_SC_020 subcatchment [Subcatchment_ID: 06_13] [12].

No watercourses or drainage ditches were identified within the Site. However, As per EPA Maps [12], there are three (3No.) hydrological features of note in the vicinity of the Site.

1. Ballykelly River-

The Ballykelly River is located ca. 270m north of the Site, situated across the R178. The Ballykelly River flows in an easterly direction and drains into the River Fane ca. 3.4km downstream of the Site. The River Fane forms part of the Dundalk Bay SAC and SPA, ca. 12km east of the Site.

Under the Water Framework Directive (WFD) 2000/60/EC, the EPA classifies the status and the risk of not achieving good water quality status for all waterbodies in Ireland [12]. According to the river waterbody WFD 2013-2018, the most up to date data at the time of this report, the water quality within the Ballykelly River is considered to be '*good,'* and the status of this river is considered to be *'under review'* [12].

2. Carnalughoge Stream

The Carnalughoge stream is located ca. 415m east of the Site. This stream drains into the Carnalughoge River, traveling ca. 600m before discharging into the Ballykelly River, and eventually the River Fane and Dundalk Bay SAC and SPA.

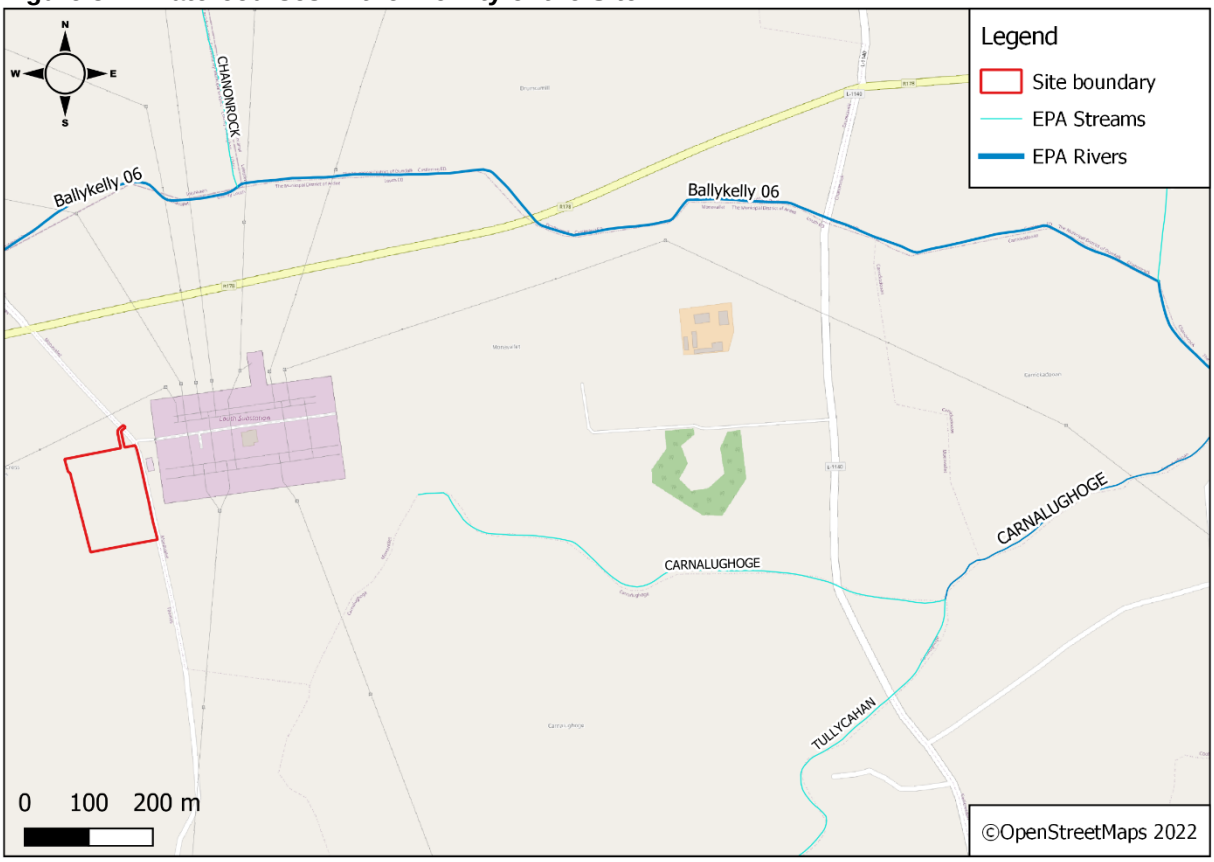
Under the Water Framework Directive (WFD) 2000/60/EC, the EPA classifies the status and the risk of not achieving good water quality status for all waterbodies in Ireland [12]. According to the river waterbody WFD 2013-2018, the most up to date data at the time of this report, the water quality within the Carnalughoge Stream is considered to be '*good,'* and the status of this stream is considered to be *'under review'* [12].

3. Tullycahan stream

The Tullycahan stream is located ca. 1km southeast of the Site. The stream drains into the Carnalughoge River, travelling ca. 600m, before discharging into the Ballykelly River, and eventually the River Fane and Dundalk Bay SAC and SPA.

Under the Water Framework Directive (WFD) 2000/60/EC, the EPA classifies the status and the risk of not achieving good water quality status for all waterbodies in Ireland [12]. According to the river waterbody WFD 2013-2018, the most up to date data at the time of this report, the water quality within the Tullycahan Stream is considered to be '*good,'* and the status of this stream is considered to be *'under review'* [12].

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



3.3 Description of the Proposed Development

3.3.1 220kV Substation

The proposed 220kV electrical substation will consist of:

- Internal section of access road to the sub-station buildings, compounds, parking, electrical apparatus, plant and equipment; overhead and underground electrical and communications cabling;

- 1 no IPP building (with satellite dish attached) measuring ca. 9.9m x ca.19.3m x ca. 8.0m (height), parking, compound and associated works;
- 1 no EirGrid control building measuring ca. 11.7m x ca. 13.0m x ca. 6.8m (height), House Transformer (House TX), parking, compound and associated works;
- electrical apparatus, plant and equipment; overhead and underground electrical and communications cabling and associated works;
- 1 no interface kiosk;
- Fencing, gates, 3 no lightning masts and 7 no lamp standards; and
- all associated works.

The proposed underground cabling (220kV) and ducting will extend from the proposed substation site to the existing Louth (Monvallet) 275kV ESB substation site boundary on the opposite side of the L5141 local road.

The proposed development will be an unmanned facility; however, the facility will be monitored 24 hours a day remotely by SPP's operation system and the Engineer Procurement and Construction provider. The Site will also be subject to routine inspections.

The proposed Site Layout is illustrated in Appendix A.

3.3.2 Drainage

There are no drainage ditches located within the proposed Site boundary.

Surface Water Drainage

The substation will be surfaced with a layer of hardcore. This free draining material will allow rainfall to permeate into the ground. As only small areas will comprise of hardstanding, it is not considered that any alteration to the existing drainage at the Site will be required.

A SuDS approach is proposed for the surface water drainage. Rainfall runoff from the I.P.P. building roofs in the substation compound will be collected and piped to a rainwater harvesting tank for reuse. Any runoff which cannot be stored will drain to the substation compound which will be largely constructed with permeable stone, effectively providing a large soak-pit for the rainfall on these areas.

Foul Water Drainage

It is expected the I.P.P. and Control Buildings will be unoccupied for the majority of their service life. However, for design purposes, it was assumed that a maximum projected attendance at Site and in these buildings will be 2 to 3 people for one day every fortnight.

The predicted irregular foul loading due to the sporadic occupancy of the buildings creates unsuitable conditions for a waste water treatment system. It is proposed therefore to pipe the foul water to a 2,800 litre tank for temporary holding storage. A maintenance agreement will be entered with a suitably licensed waste contractor for periodic (3 months) emptying of this tank. The maximum predicted flow into the tank every 3 months is:

- 3 people x 100 l/person/day (Factory with Canteen) = 300 l/day.
- 300 (1 day every 2 weeks) x 13 weeks = 1,900 litres.

Therefore, a 2,800 litre tank that will be emptied every 3 months will provide ample capacity to store the foul water. The foul waste holding tank is fitted with a high level alarm and vented to the atmosphere.

3.3.3 Earthworks

Localised levelling works will be required for the development of the Site. The substation will comprise of a concrete foundation for the transformers and electrical equipment, with the rest of the area filled with crushed rock. It is estimated that the majority of the excavated materials

will be within the Site or alternatively within the adjoining solar farm for the purpose of constructing screening berms given the overall development will be constructed as a single construction project.

3.3.4 Grid Connection

The grid connection that will link the Proposed Development with the Louth ESB Substation directly east will consist entirely of underground cables that will be installed within the Site before traversing across the L5141 into the Louth ESB substation.

The ESB will ultimately be responsible for ensuring that the most appropriate connection option will be selected.

3.3.5 Water Supply

Water for onsite welfare facilities will be provided by a 1,500 litre rainwater harvesting tank which will be filled from roof runoff. Working with projected usage of the sanitary facilities of 1,950 litres every 13 weeks, the rainwater storage tank will provide for up to 10 weeks without receiving any rainfall.

3.3.6 Site Access and Egress

There will be one access point as part of the Proposed Development (Figure 3-3).

The access to the Proposed Development will remain as per the Permitted Development (PR: 21/631) via the L5141.

The L5141 runs north to south and is, on average, 5m wide. The speed limit on this local road is 80km/h. The L5141 provides adequate stopping site distance and satisfies current standards. This site access is also in accordance with all sightline visibility requirements, as set out by Louth County Council, of 75m for a rural road with an 80km/h speed limit, measured from a 3m set-back from the road edge. The sightlines to the proposed access will be in excess of the stipulated 75m and therefore no improvements will be required. Refer to drawing P704_P within the drawing pack submitted with this application.

Figure 3-3: Site Access

3.4 Sensitive Design

Specialist ecological input was a key element of the proposed design, to ensure that the design of the proposed infrastructure works was extremely sensitive to valued ecological features that occur or may occur within the Site and the surrounding landscape. The key measures relevant for this project have been detailed below:

- The construction and maintenance of the Proposed Development will use the approved access as per PR 21/631 which utilises the existing farm access point. Options to access the Site have been carefully considered to ensure safe access to the Site;
- Buffers will be implemented and maintained throughout the lifecycle of the Proposed Development including:
    - A 6m buffer between all works, substation infrastructure and existing hedge / trees lines; and,
    - A 5m setback from the perimeter fence and all substation infrastructures.

3.5 Construction Procedure

During the construction phase of the Proposed Development potential environmental effects will be short-term and localised. It is proposed that the construction of the Proposed Development and Permitted Developments will all take place as a single construction project. All works will comply with the relevant legislation, construction industry guidelines and best practice to reduce potential environmental adverse effects.

A preliminary Construction Environmental Management Plan (pCEMP) has prepared as part of this planning application. 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 as part of the Proposed Development and Permitted Developments:

- C532 – Control of Water Pollution from Construction, Guidance for Consultants and Contractors [14];
- C741 - Environmental Good Practice onsite (4th edition) [15];
- Guidance for the Treatment of Badgers Prior to the Construction of National Road Schemes [16];
- Guidance for the Treatment of Bats Prior to the Construction of National Road Schemes [17];
- Guidelines on The Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads [18];
- BS 5228-1+A1:2014: Code of Practice for noise and vibration control on construction and open sites- Part 1: Noise [19] and Part 2 Vibration [20];
- Inland Fisheries Ireland (IFI) 'Guidance and Protection of Fisheries during Construction Works in and adjacent to Water [21]; and,
- The recommendations included within the National Roads Authority (NRA) Guidelines for the Crossing of Watercourses [22].

The proposed works will take approximately 14 months to complete. Working hours will generally be restricted to between 07:00 and 19:00 Monday to Friday and between 07:00-13:00 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 Monitoring Works

An Environmental Clerk of Works (ECoW) will inspect the Site in advance of works commencing and will undertake Site inspections as required during the works to ensure that they will be completed in line with the mitigation measures detailed within this NIS and the pCEMP, and that the mitigation measures will be effective.

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 Operational Procedures

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 1 maintenance visit per year, though the system operator could have a technician onsite more frequently to undertake routine, non-intrusive maintenance tasks such as Site inspection, cable and power plant checks and servicing, hedgerow maintenance etc. Only small vans / jeeps will be used to access the Site.

The Power Transformer unit will have a bund area. Under normal operation, this oil will be maintained within the system and no emissions will occur. To prevent unforeseen impact on the environment the transformer units will be monitored and maintained.

3.8 Waste Management

- All excavated materials will be reused onsite;
- Waste materials will be collected and stored in suitable receptacles before they are taken off-site;
- 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.

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 the operational phase.

3.9 Decommissioning

The operation of the facility will be for approximately 35 years as determined by the grant of planning. At this time, a decision will be made as to whether the solar farm that will be connected to the Proposed Development will be decommissioned. If the decision is taken to decommission the solar farm then the Proposed Development will also be decommissioned and the Site returned to agricultural usage. However, if, the solar farm were to be repowered, then the Proposed Development would remain in use.

It is intended for there to be a single decommissioning programme for the Permitted Developments and the Proposed Development.

The decommissioning tasks and removal of all solar farm components from the leased land will be completed within 12 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, the substation will be completely dismantled (including underground electrical interconnection and distribution cables) and the Site will be restored to its preconstruction state.

The decommissioning plan addresses all aspects of waste management post operational phase. The Applicant will re-use or recycle as many of the substation 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 practice and any legislation applicable at the time of decommissioning.

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

4 IDENTIFCATION OF NATURA 2000 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 Natura 2000 site is likely to be negatively affected by a project are:

- The physical distance from the project to the Natura 2000 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 Natura 2000 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 three (3 No.) 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 Natura 2000 Designated Sites within 15km

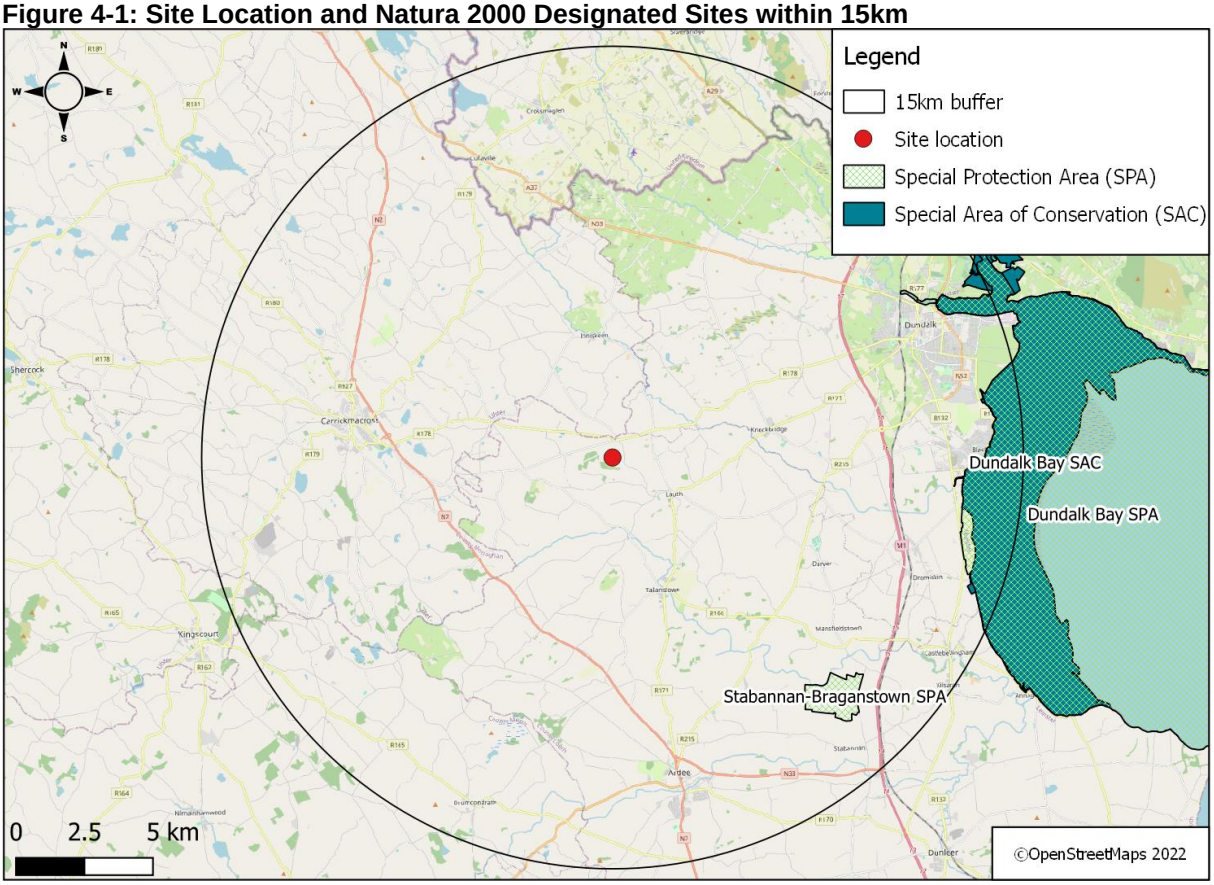


Table 4-1: European Designated Sites within 15km of the Site

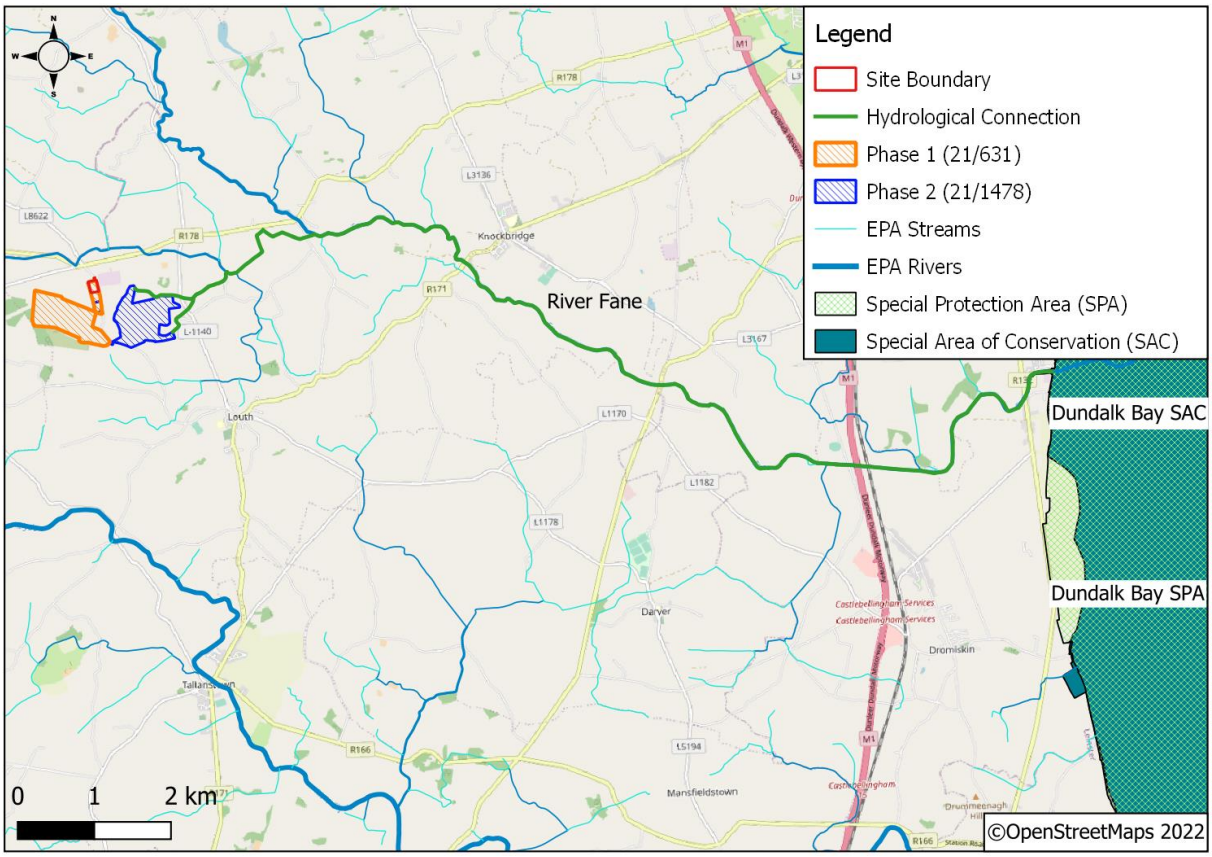
Site Name	Code	Distance (km)	Direction from the Site
Special Areas of Conservation (SAC)			
Dundalk Bay SAC	000455	12.4km	E
Special Protection Area (SPA)			
Strabannan-Braganstown SPA	004091	10.7km	SE
Dundalk Bay SPA	004026	12.4km	E

The Site is not located within or directly adjacent to any Natura 2000 sites, however, the boundaries of one (1No.) SAC and two (2No.) SPAs are located within 15km of the Site. Furthermore, no direct hydrological connection was identified between the Proposed Development and any European Designated Sites.

However, as outlined in Section 3.3.1, once all of the necessary statutory consents are in place, it is proposed that there will be one single construction project comprising of the Proposed Development and Permitted Developments.

Therefore, using the precautionary principle and a precautionary assessment of the source - pathway receptors and the potential hydrological connection between the Permitted Developments and the Dundalk Bay SAC and SPA via the watercourses and drainage network (see Figure 4-2), further consideration will be given to these Natura Sites, to assess potential adverse effects resulting from the proposed development. Further information on these Natura 2000 sites is provided below.

Figure 4-2: Potential Hydrological Connection between the Site, Permitted Developments and Dundalk Bay SAC and SPA



4.1 Identification of Natura 2000 Sites within ZoI

Habitat Loss / Degradation

The Site is located within an area of agricultural land. No impacts associated with designated habitat loss / degradation are expected as a result of the Proposed Development given the distance separating the Site from the Natura 2000 sites. As the construction of the Proposed Development will take place in tandem with the Permitted Developments which are hydrologically linked it is possible for there to be significant effects in the form of habitat degradation via water quality impairment.

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 or operational phases 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 impact pathway between the Proposed Development and any nearby watercourses were identified. However, hydrological connections were identified and outlined as part of the Permitted Developments. These include multiple tributaries of the River Fane, which drain into the Dundalk Bay SAC and SPA.

Given that it is proposed that there will be one single construction project for the Proposed Development and Permitted Developments, a precautionary approach is being undertaken. Further consideration will therefore be given to Dundalk Bay SAC and SPA, and these Natura 2000 sites have been screened in.

Air Quality Impairment

According to the Institute of Air Quality Management (IAQM) Guidelines, the potential adverse effects from dust occur to ecological receptors from dust associated with construction works within a distance of 400m [23]. This is a temporary nuisance impact only. No Natura Sites are located within 400m of the Site and therefore no impacts will occur as a result of dust.

Noise / Disturbance

Noise from the construction activity has the potential to cause disturbance to resting, foraging and commuting qualifying species of the Natura 2000 sites.

No in-river works required for the Proposed Development, and therefore no potential for underwater noise impacts beyond the immediate vicinity of the Site will occur. 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 [24]; 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 [25].

The ZoI for noise / disturbance is therefore established as the Site with a 300m buffer. There are no Natura 2000 sites within this buffer and no further consideration is required on Natura 2000 sites.

Identification of Natura 2000 Sites

The Site is not located within or directly adjacent to any Natura 2000 sites, however, the boundaries of three (3No.) are located within 15km from the Site.

Given the distance, intervening lands and lack of impact pathways from the Site, Strabannan-Braganstown SPA have been screened out from further consideration on the basis that there are no likely significant adverse effects.

However, given that the Proposed Development and Permitted Developments will be one single construction project, and the potential hydrological connections identified as part of the Permitted Developments screening exercise, the following Natura 2000 sites listed in Table 4-2 have been screened in for further consideration to assess potential adverse effects resulting from the Proposed Development.

Table 4-2: European Designated Sites within ZoI

Site Name	Code	Distance at closest point and source-pathway-receptor link
Dundalk Bay SAC	000455	The overall construction area is hydrologically connected to this Natura site through multiple Tributaries of the River Fane which drains into this SAC, ca.12.4km downstream of the Site. Therefore, potential impacts on water quality will be taken forward for further consideration.
Dundalk Bay SPA	004026	The overall construction area is hydrologically connected to this Natura site through multiple Tributaries of the River Fane which drains into this SPA, ca.12.4km downstream of the Site. Therefore, potential impacts on water quality will be taken forward for further consideration.

The screening assessment for individual designated habitats and species for each of the screened in Natura 2000 sites and the potential for the integrity of the Sites to be adversely affected by the Proposed Development and Permitted Developments are presented in Section 6 below.

4.2 Dundalk Bay SAC (Site Code: 000455)

Dundalk Bay, Co. Louth, is a very large open, shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16km from Castletown River on the Cooley Peninsula in the north, to Annagassan/Salterstown in the south. The bay encompasses the mouths and estuaries of the Rivers Dee, Glyde, Fane, Castletown and Flurry.

The site is a Special Area of Conservation (SAC) selected for the following habitats listed in Table 4-3.

Table 4-3: Qualifying Annex I Habitats for Dundalk Bay SAC

Qualifying Habitats	**Code**
Mudflats and sandflats not covered by seawater at low tide	1140
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	1330
Estuaries	1130
Perennial vegetation of stony banks	1220
Salicornia and other annuals colonising mud and sand	1310
Mediterranean salt meadows (*Juncetalia maritimi*)	1410

Saltmarsh vegetation occurs in four main areas: at Lurgangreen, Marsh South, Dundalk Harbour and Bellurgan. Two types are represented – Atlantic and Mediterranean salt meadows. The Atlantic salt meadows are commonest and are characterised by Sea-purslane (*Halimione portulacoides*) (often as a dominant band), along with Common Saltmarsh-grass (*Puccinellia maritima*), Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvygrass (*Cochlearia officinalis*), Sea Plantain (*Plantago maritima*) and Sea Rush (*Juncus gerardi*). Common Cord-grass (*Spartina anglica*) is frequent and often dominant over substantial areas. Glassworts (*Salicornia spp*.) occur on the lower zones of the saltmarshes, and in places extend out onto the sandflats.

Mediterranean salt meadows are mostly confined to the upper levels of the saltmarshes or along stream sides where they merge with grassland habitats (though the transitional zone is now absent in many places). The habitat contains Sea Rush (*Juncus maritimus*), Sea Arrowgrass (*Triglochin maritima*) and Sea Aster (*Aster tripolium*).

Shingle beaches are particularly well represented in Dundalk Bay, occurring more or less continuously from Salterstown to Lurgan White House in the south bay, and from Jenkinstown to east of Giles Quay in the north bay. The shingle is mostly stable, occurring on post-glacial raised beaches. The shingle often occurs in association with intertidal shingle, saltmarsh and or shingle-based grassland. Yellow Hornedpoppy (*Glaucium flavum*) and Lyme-grass *(Leymus arenarius*) occur here at their most northern locality on the east coast, while the Red Data Book species Sea-kale (*Crambe maritima*) has recently been recorded.

The extensive sandflats and mudflats (over 4,000ha) occur and are comprised of ecological communities such as muddy fine sand communities and fine sand community complexes. In the centre of Dundalk Bay there is a gravel community dominated by polychaetes. These habitats host a rich fauna of bivalve molluscs, marine worms and crustaceans and are the main food resource of the tens of thousands of waterfowl (including waders and gulls) which

feed in the intertidal area of Dundalk Bay. The site is internationally important for waterfowl because it regularly holds over 20,000 birds (up to 57,000 have been recorded) and supports over 1% of the North-West European/East Atlantic Flyway populations of Brent Goose, Bar-tailed Godwit and Knot [26].

4.3 Dundalk Bay SPA (Site Code: 004026)

Dundalk Bay is a large open shallow sea bay with extensive saltmarshes and intertidal sand/mudflats, extending some 16km from Castletown River on the Cooley Peninsula, in the north, to Annagassan / Salterstown in the south. The extensive sand flats and mud flats have a rich fauna of bivalves, molluscs, marine worms and crustaceans which provides the food resource for most of the wintering waterfowl. The outer part of the bay provides excellent shallow-water habitat for divers, grebes and sea duck. In summer, it is thought to be a major feeding area for auks from the Dublin breeding colonies. The bay is used at night for roosting by wintering flocks of Greylag Goose, Greenland White-fronted Goose and Whooper Swan from Stabannan / Braganstown (inland of Castlebelligham) and other inland sites.

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 4-4.

Table 4-4: Qualifying Annex I Species of Birds for Dundalk Bay SPA

Species Name	Scientific Name	Code
Great Crested Grebe	*Podiceps cristatus*	A005
Greylag Goose	*Anser anser*	A043
Light-bellied Brent Goose	*Branta bernicla hrota*	A046
Shelduck	*Tandorna tadorna*	A048
Teal	*Anas crecca*	A052
Pintail	*Anas acuta*	A054
Mallard	*Anas platyrhynchos*	A053
Red-breasted Merganser	*Mergus serrator*	A069
Oystercatcher	*Haematopus ostralegus*	A130
Golden Plover	*Pluvialis apricaria*	A140
Grey Plover	*Pluvialis squatarola*	A141
Lapwing	*Vanellus vanellus*	A142
Dunlin	*Calidris alpine*	A149
Black-tailed Godwit	*Limosa limosa*	A156
Bar-tailed Godwit	*Limosa lapponica*	A157
Curlew	*Numenius arquata*	A160
Redshank	*Tringa tetanus*	A162
Black-headed Gull	*Chroicocephalus ridibundus*	A179

Species Name	Scientific Name	Code
Common Gull	*Larus canus*	A182
Common Scooter	*Melanitta nigra*	A065
Ringed Plover	*Charadrius hiaticula*	A137
Knot	*Calidris alpina*	A143
Herring Gull	*Larus argentatus*	A184
Wetland and Waterbirds		A999

The Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. The site is of international importance because it regularly supports an assemblage of over 20,000 wintering waterbirds.

The regular occurrence of Golden Plover, Bar-tailed Godwit, Red-throated Diver, Great Northern Diver and Little Egret is of particular note as these species are listed on Annex I of the E.U. Birds Directive. Dundalk Bay is a Ramsar Convention site and parts of Dundalk Bay SPA are designated as Wildfowl Sanctuaries [27].

4.4 Conservation Objectives

European and national legislation places a collective obligation on Ireland and its citizens to maintain a favourable conservation status at areas designated as candidate Special Areas of Conservation. 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 EU Habitats Directive, favourable conservation status of a habitat is achieved when:

- Its natural range, and 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 data on the species concerned indicate that it is maintaining itself;
- 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 report for the conservation objectives for the Dundalk Bay SAC[1] and the Dundalk Bay SPA [2]can be found on the NPWS website.

[1] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000455.pdf
[2] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004026.pdf

5 STUDY RESULTS

5.1 Desk Based Study Results

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) [3].

The NBDC holds no records for designated bird species under the Dundalk Bay SPA within a 2km grid square of the Site within the last 10 years [11] (grid squares used in this study: H90G, H90L, H9302, H9303, H9402 and H9403).

5.2 Field Based Study Results

5.2.1 Habitat Assessment

The habitats described below were classified under Fossitt's: *A Guide to Habitats in Ireland* [13] and are all located within the Site. A description of the habitats and features of ecological significance are outlined below, and their distribution is illustrated in Figure 5-1.

Improved Agricultural Grassland (GA1)

Areas of improved agricultural grassland were the primary habitat within the Site. At the time of the habitat survey the Site was being grazed by cattle.

The dominant species within these fields included: meadow grasses (*Poa trivialis*), Yorkshire fog (*Holcus lanatus*), nettles (*Urtica dioica*), broad leaved docks (*Rumex obtusifolius*), creeping buttercup (*Ranunculus repens*), cleavers (*Galium aparine*), common rush grass (*Juncus effusus*) common chickweed (*Stellaria media*), hairy bittercress (*Cardamine hirsuta*), ragwort (*Jacobaea vulgaris*), dandelion (*Taraxacum officinale*) and thistles (*Cirsium vulgare*).

Species found in the understory of the field margins of the agricultural grassland included thistles, nettles, white clover (*Trifolium repens*), dandelion, sow thistles (*Sonchus* spp.), dock, ragwort, yarrow (*Achillea millefolium*), mouse-eared chickweed (*Cerastium fontanum*), bush vetch (*Vicia sepium*), herb-Robert (*Geranium robertianum*) and pineapple weed (*Matricaria discoidea*).

Hedgerows (WL1)

Hedgerows were present along the perimeter of the Site and separated the Site boundary from the L5141. The main species identified within the hedgerows onsite were hawthorn (*Crataegus monogyna*), gorse (*Ulex europaeus*), brambles (*Rubus fructicosus*), elder (*Sambucus nigra*), dogrose (*Rosa canina*), ash (*Fraxinus excelsior*) and Scot's elm (*Ulmus glabra*).

Figure 5-1: Habitat Map

5.2.1.1 Invasive Species

No invasive species were recorded during the onsite surveys

6 STAGE 1 SCREENING: IDENTIFICATION OF POTENTIAL SIGNIFICANT IMPACTS

Potential adverse effects, if any, on the Dundalk Bay SAC and Dundalk Bay SPA were considered further in this section. The key output of this stage of the assessment is the identification of the types of threats to the integrity of the Natura 2000 sites as a result of implementing the Proposed Development and the Permitted Developments. Given that it is proposed that there will be one single construction project for the Proposed Development and Permitted Developments, a precautionary approach is being undertaken. Further consideration will therefore be given to Dundalk Bay SAC and SPA.

A number of factors were examined at this stage and dismissed due to the very low risk associated with them. These factors were screened in or out, based on whether or not it was concluded that they are likely to be affected by the proposed development if no mitigation measures were applied, and if progression to Stage 2 is required. The rationale for these conclusions is based on results from the aforementioned desk study, literature search and field survey results.

6.1 Dundalk Bay SAC

It is considered highly unlikely that the works will have any significant direct or indirect adverse effects on the designated habitats during either the construction or operational phase of the development. This conclusion is based on the following:

- The absence of these habitats within the Site, and the distance separating these habitats from the Site (>12km); and,
- There will be no direct discharge into any watercourses during the construction and operational phases of the Proposed Development.

However, should run-off of potential pollutants from the overall construction areas reach the surface water or groundwater and flow into the drainage network and drain into the nearby watercourses, this could adversely affect the water quality, subsequently potentially impacting on protected habitats and species within the Natura 2000 sites downstream.

6.2 Dundalk Bay SPA

Birds

It is considered unlikely that the existing habitats within the Site are of significant importance for these species given current agricultural practices on the Site and the inland nature of the Site. Furthermore. the NBDC holds no records for Designated Species within a 2km boundary of the Site [11].

Based on the following rational, it is considered unlikely that any designated bird species as listed in Table 4-4 will utilise the Site given the distance separating the Site from the SPA. In addition, given the abundance of suitable habitat directly adjoining Dundalk Bay SPA, it is considered likely that this species would utilise these areas as opposed to the Site. Similarly, should this species be within the vicinity of the Site, there is an abundance of similar agricultural lands in the wider area and as such the loss of habitat onsite will not adversely affect these species. Furthermore, birds are highly mobile and therefore will move away from disturbances and it can be concluded that should these species occur within the vicinity of the Site and be temporarily disrupted during construction works, they will move to a more suitable area elsewhere.

Overall, it is anticipated that these designated bird species will not be directly affected during the construction and operational phase of the Proposed Development.

However, the Permitted Development and thus overall construction area is hydrologically connected to the SPA via the River Fane and its tributaries. Therefore, should the Proposed

Development or Permitted Developments adversely affect the water quality during the construction phase, this could result in decreased water quality and lead to the loss of foraging grounds and food supplies for these species. Therefore, mitigation measures will be required in order to ensure no adverse effects occur to water quality, as such these species have been scoped in for further consideration.

To note, the wet grassland habitat (ca. 7.48ha) located in the south central and southern fields of PR 21 /1478 has been deliberately set aside and will be allowed to develop naturally as wet grassland habitat and enhanced to encourage waterbirds to begin using the area.

Overall, the existing Site is considered unsuitable for the bird species designated for the Dundalk Bay SPA and it is considered unlikely that any of these bird species would utilise the Site for breeding or nesting. However, there is potential for these bird species to fly over the Site.

Therefore, the following potential adverse effects will be assessed below: collision risk and disturbance.

Collision Risk

Given that the potential grid connection and cabling will be undergrounded there is no potential for collisions risk associated with the proposed grid connection and bird species that could be utilizing the area. Furthermore, it is considered that there is no collision risk between birds and the onsite lightning masts given the fact that these vertical structures will not have overhead cabling or guywires extending from these structures.

Additionally, the existing hedgerows / treelines that surround the Site 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.

Disturbance

As discussed above, the Site is not considered to be of importance to any of the bird species designated for the Dundalk Bay SPA. Therefore, it is not anticipated that any designated bird species will be disturbed as a result of the Proposed Development.

However, should any of these species occur within the vicinity of the Site during the construction phase of the Proposed Development and be disrupted by the works, it is anticipated that these birds will move to a suitable area elsewhere given the fact that birds are highly mobile and will therefore move away from disturbances and given the abundance of suitable habitat 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 require minimal maintenance visits with small vans / jeeps (as detailed in Section 3.7). 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.

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 a 15km radius of the Site has been examined in detail.

The Site is not located within or directly adjacent to any Natura 2000 sites, however, the boundaries of the Strabannan-Braganstown SPA, Dundalk Bay SPA and Dundalk Bay SAC.are located within 15km of the Site.

The Strabannan-Braganstown SPA, was screened out based on the distances separating the Site from these Natura 2000 sites and lack of impact pathways.

A hydrological connection was identified between the Permitted Development and Dundalk Bay SAC and Dundalk Bay SPA. This is via the Tullycahan, Carnalughoge and Louth Streams and Ballykelly River, which drain into the River Fane which subsequently discharges into these European Sites.

It is proposed that the construction of the Proposed Development and Permitted Developments will all take place as a single construction project. Therefore, out of an abundance of precaution, Dundalk Bay SAC and Dundalk Bay SPA Natura 2000 sites were taken forward for further detailed consideration, Stage 2 appropriate assessment.

Section 7 below further addresses potential issues arising from the Proposed Development and the mitigation measures required to negate any potential adverse effects on these Natura 2000 sites.

Using professional experience, guidance and judgement, the following factors have been taken into account in identifying potential significant impacts on the identified Natura 2000 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 and Permitted Developments to have adverse effects on European Sites and their qualifying features of interest as per the screening determination in Section 4.

Taking a precautionary approach, the screening exercise has identified the following designated habitats and species:

<u>Habitats</u>

- Mudflats and sandflats not covered by seawater at low tide
- Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
- Estuaries
- Perennial vegetation of stony banks
- Salicornia and other annuals colonising mud and sand
- Mediterranean salt meadows (Juncetalia maritimi)

<u>Species</u>

- Great Crested Grebe
- Greylag Goose
- Light-bellied Brent Goose
- Shelduck
- Teal
- Pintail
- Mallard
- Red-breasted Merganser
- Oystercatcher
- Golden Plover
- Grey Plover
- Lapwing
- Dunlin
- Black-tailed Godwit
- Bar-tailed Godwit
- Curlew
- Redshank
- Black-headed Gull

- Common Gull
- Common Scooter
- Ringed Plover
- Knot
- Herring Gull
- Wetland and Waterbirds

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 was determined to be required.

Section 7 below further addresses potential issues arising from the Proposed Development and the mitigation measures required to negate any potential adverse effects on these 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 potential significant impacts of the proposed works on qualifying habitats and species throughout the duration of the project. The following effects with potential to adversely affect the conservation objectives of the Dundalk Bay SPA and Dundalk Bay SAC were identified and considered:

- Loss of, or Disturbance to, Habitat and Species
- Potential impairment of water quality during the construction of the Proposed and Permitted Developments

7.2 Loss of, or Disturbance to, Habitats and Species;

Habitats

It is considered highly unlikely that the Proposed Development or the Permitted Developments will have any significant direct or indirect adverse effects on the Annex I habitats for which the Dundalk Bay SAC is designated for during either the construction or operational phase of the development.

This conclusion is based on:

- No Annex I habitats were identified within the Site;
- The absence of the designated habitats within close proximity to the Site, with the designated habitats for which the nearest SAC is designated being located >12km from the Site; and,
- There will be no direct discharge into any watercourses or drainage ditches during the construction and operational phases of the proposed development.

It is also considered highly unlikely that any potential pollutants arising from the temporary construction works could reach the SAC or SPA due to the fact that pollutants will either be diluted or dispersed within the watercourses before reaching Dundalk Bay. However out of an abundance of caution a potential risk on this habitat has been screened in.

Mitigation measures will be implemented during the construction and operational phases to ensure that there will be no adverse effects to water quality downstream of the Site as outlined in section 7.3 below.

It can therefore be concluded that no loss or adverse effects on Annex I habitats for the Dundalk Bay SAC will arise from the construction works of the Proposed Development.

Designated Species

The NBDC holds no records for designated species in 2km of the site recorded in the last 10 years [11]. No designated species were recorded during the Site walkover.

As discussed in Section 6 above, the existing conditions within the Site are not considered suitable for breeding and wintering designated bird species. The Site does have the potential to support foraging, however, it is not considered a site of importance given the abundance of available suitable agricultural grassland within the vicinity of the Site.

7.3 Potential Impairment of Water Quality

7.3.1.1 Reduction & Prevention of Suspended Solids and Contaminant Pollution

As part of the overall construction area, the Site is considered to be hydrologically linked to the Dundalk Bay SAC and Dundalk Bay SPA via the Ballykelly River and the River Fane.

Therefore, should run-off of potential pollutants from the construction area reach the Ballykelly River, this could adversely affect the water quality, subsequently potentially impacting on

protected habitats and species within the Natura Sites downstream. Potential pollutants resulting from the construction works could include suspended solids / silt / or diesel leaks or spills.

However, it is considered highly unlikely that pollutants would impact on the water quality of the Dundalk Bay SAC and Dundalk Bay SPA based on the following:

- The nature of the proposed works (i.e. no changes to on-site drainage, minimal earthworks, sensitive design);
- There will be no direct discharges to surface water or groundwater during the construction or operational phase of the development;
- No in-river works or works within drainage ditches will be required as part of the proposed development;
- The fact that any potential pollutants entering the watercourse would be subject to considerable dilution prior to reaching Dundalk Bay; and,
- The distance separating the Site from all Natura Sites.

Nonetheless, during the construction phase, all works will comply with all relevant legislation and best practice to reduce potential environmental impacts of the works as outlined in section 3.5 of this report. Furthermore, 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 during the construction phase.

The measures that will be put in place to remove the risk from 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 [28] and National Roads Authority (NRA), now known as the Transport Infrastructure Ireland (TII), [29] guidance documents:

- Construction stage works will be undertaken in accordance with an approved pCEMP;
- Preventative maintenance and relevant maintenance logs will be kept for all on-site plant and equipment;
- Excavations will be left open for minimal periods to avoid acting as a conduit for surface water flows;
- All materials shall be stored at the main contractor compound and transported to the works zone immediately prior to construction;
- Any chemical / oils to be stored on Site will be placed on an area of hardstanding to ensure there is no seepage of pollutants into groundwater or surface water;
- Weather conditions will be considered when planning construction activities to minimise risk of runoff from Site;
- Any pouring of concrete will only be carried out in dry weather. Washout of concrete trucks will not be permitted on the Site;
- All drainage from bund areas must be directed to secure containment prior to suitable disposal;
- Fuel will be delivered on site 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 on-site;

- Fuels, lubricants and hydraulic fluids for equipment used in the construction phase 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;
- No surface water runoff will be discharged onto public roads, foul sewers or adjacent property; and,
- Measures will be implemented to minimise waste and ensure correct handling, storage and disposal of waste.

The proposed measures to remove the risk from 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:

- Adequate spill kits including absorbent booms and other absorbent material will be maintained on-site;
- All contractor workers will be appropriately trained in the use of spill kits;
- Any spillage of cementitious materials will be cleaned-up immediately; and,
- 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.

An Ecological Clerk of works (ECoW) will be appointed to the project to ensure that the mitigation and best practice measures will be implemented.

7.3.2 Operational Phase

The Power Transformer, Current Transformers and Voltage Transformers as part of the Proposed Development, and the step-up transformer units for the battery storage containers (PR 21/631) will contain oil. The exact specification and the suppliers for the transformers have not been confirmed at this stage of the preliminary design.

- The Power Transformer will contain ca. 26,000 litres of mineral oil.
- Current Transformers will contain ca. 50 litres each of mechanical fluid oil
- Voltage Transformers will contain ca. 55 litres each of mechanical fluid oil
- Step up transformer (part of permitted development PR 21/631) will contain ca. 1,000 litres of biodegradable oil.

Mitigation measures outlined in section 7.3.1 will ensure there will be no adverse effects to water quality due to a pollution event.

It can therefore be concluded that Proposed Development and Permitted Developments will not result in any adverse effects to habitats or species designated to Dundalk Bay SPA / SAC due impairment of water quality. This is based on the localised nature of the Proposed Development, the distance and intervening lands separating the Site from any Natura 2000 sites and the best practice measures that will be implemented.

7.4 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.

A review of the Louth County Council Planning eplan website [10] identified the following planning applications listed in Table 7-1 which have been granted conditional planning by the Council. These are all located in the immediate vicinity of the Site, and are projects associated with the Applicant that will coincide with the Proposed Development.

The planning applications listed in Table 7-1 have previously been assessed by Louth County Council within the planning system.

Table 7-1: Permitted Planning Applications within the vicinity of the Site

LCC Application Ref	Planning Decisions	Associated Works	Ecology
21631 – Solar PV and battery energy storage system development.	Conditional planning granted on 26th August 2021.	New site entrance, solar panels on ground-mounted frames, battery energy storage system, CCTV installation and associated works, a contained control room, switch room and switch gear unit, grid connections to the Louth substation, and all associated ancillary development works.	An Environmental Report, Environmental Management Plan and NIS accompanied this application.
211478 – Ten year planning permission for alterations and extension for the above granted 21631.	Conditional planning granted on 26th May 2022.	Ten year permission sought for alterations and extension to the solar PV and battery energy ten year permission sought for alterations and extension to the solar PV and battery energy storage system development permitted under planning ref. no. 21631. Storage system development permitted under planning ref. no. 21631.	An NIS, Environmental Management Plan and Environmental Report accompanied this application.

The planning applications listed in Table 7-2 are currently being assessed by Louth County Council within the planning system.

Table 7-2: Active Planning Applications within the vicinity of the Site

LCC Application Ref	Planning Decisions	Associated Works	Ecology
22534- Ten year planning permission for an extension for the above granted 21631.	LCC acknowledged 1st July 2022. LCC request for further information on 18th August 2022. RFI was submitted on 28/09/2022. Currently awaiting decision from LCC.	Formation of a new entrance off the L5154 (drumgoolan) to provide the main entrance to the proposed PV development and associated works; solar panels on ground mounted frames over an area of c.54.51ha, 30 no. single storey electrical inverter/transformer units, a containerised switch gear unit, security fencing, CCTV system with pole mounted cameras and landscaping; underground grid connection cables connecting to the substation cable connection permitted under planning ref. no. 21/631 (and thereafter ultimately connecting to Louth(Monvallet) 275kV substation); temporary construction compound; and all ancillary development works.	An Environmental Report, Biodiversity Management Plan, NIS and CEMP accompanied this application.

As part of the planning process for PR 21/631 and 21/1478, NIS's were prepared for each project. Both assessments concluded that the respective developments proposed will not pose a risk of adversely affecting (either directly or indirect') the integrity of any European Site, either alone or in-combination with other plans or projects, during either the construction or operation of the Proposed Development.

As outlined in Table 7-2 above, PR 22/534 is currently awaiting a decision from LCC. It should however be noted that an NIS was prepared in support of the planning submission. It concluded that the proposed development would not pose a risk of adversely affecting (either directly or indirect) the integrity of any European Site, either alone or in-combination with other plans or projects, during either the construction or operation of the proposed development.

Based on the mitigation measures as described in section 7.3, 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 Louth County Council Planning Files and the Department of Housing, Local Government and Heritage's planning portal – the National Planning Application Database as listed in Table 7-1, no current or previously granted plans or projects or future projects as outlined in Table 7-2 were identified in the immediate vicinity that are considered to have the potential to have any in-combination effects with the Proposed Development to result in significant impacts on the integrity of European Sites.

It is therefore considered that the Proposed Development is unlikely to have any significant in-combination contribution to possible significant effects on Dundalk Bay SPA or Dundalk Bay SAC. 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 mitigation measures that will be put in place; and,

V. 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.

It is 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 Natura 2000 sites.

8 NIS CONCLUSIONS AND STATEMENT

The Proposed Development will be located on a site that is ca. 1.8 hectares (ha) in size and is located within the townlands of Toomes and Monvallet, Co. Louth, ca. 2.5km northwest of Louth Village and is shown in Figure 1-1 ('the Site'). Planning permission has already been granted for two 37kV substations at this location. It is now proposed to seek permission for a 220kV substation to replace the two 37kV substations. The Applicant is advised that the opportunity for a grid connection into the adjoining EirGrid Louth 275kV Substation is only possible on the 220kV side of the substation. The Proposed Development will connect to a large renewable energy project that will comprise of an estimated 65MW of Solar and 285MW BESS (Permitted Developments). It is also intended that the Proposed Development will connect to a final phase of this solar farm (Phase 3) that, if permitted, will provide an additional 72MW, bringing the total supply from the solar development to 137MW of electricity. In order to deliver the permitted and proposed renewable energy projects there is a clear technical need for the Proposed Development.

A comprehensive assessment of the layout and nature of the Proposed Development and the associated developments, the construction methods to be employed, and the overall activities that will occur at the Site during construction and operation has been carried out. The potential for significant impacts on Natura 2000 sites and qualifying features of interest within a 15km radius of the Site has been examined in detail.

As detailed in Section 6, the Stage 1 AA Screening conclusion states that the boundary of one (1No.) designated site, Strabannan-Braganstown SPA, was screened out. It could be objectively concluded that the Proposed Development will not, be likely to have significant effects on this site

It is proposed that the construction of the Proposed Development and Permitted Developments will all take place as a single construction project. The AA Screening of the Permitted Developments identified direct hydrological links with Dundalk Bay SAC and SPA. Therefore, Dundalk Bay SAC and Dundalk Bay SPA were screened in for further consideration.

The mitigation measures that are set out within this NIS and the effective implementation of these mitigation measures will ensure that any impacts on the European sites, 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.

It has been objectively concluded, following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the Proposed Development and all associated works, and with implementation of the proposed mitigation measures, that the Proposed Development will not, either alone or in combination with other plans or projects, adversely affect the integrity of Dundalk Bay SAC and SPA or any other European site in light of the site's conservation objectives and 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

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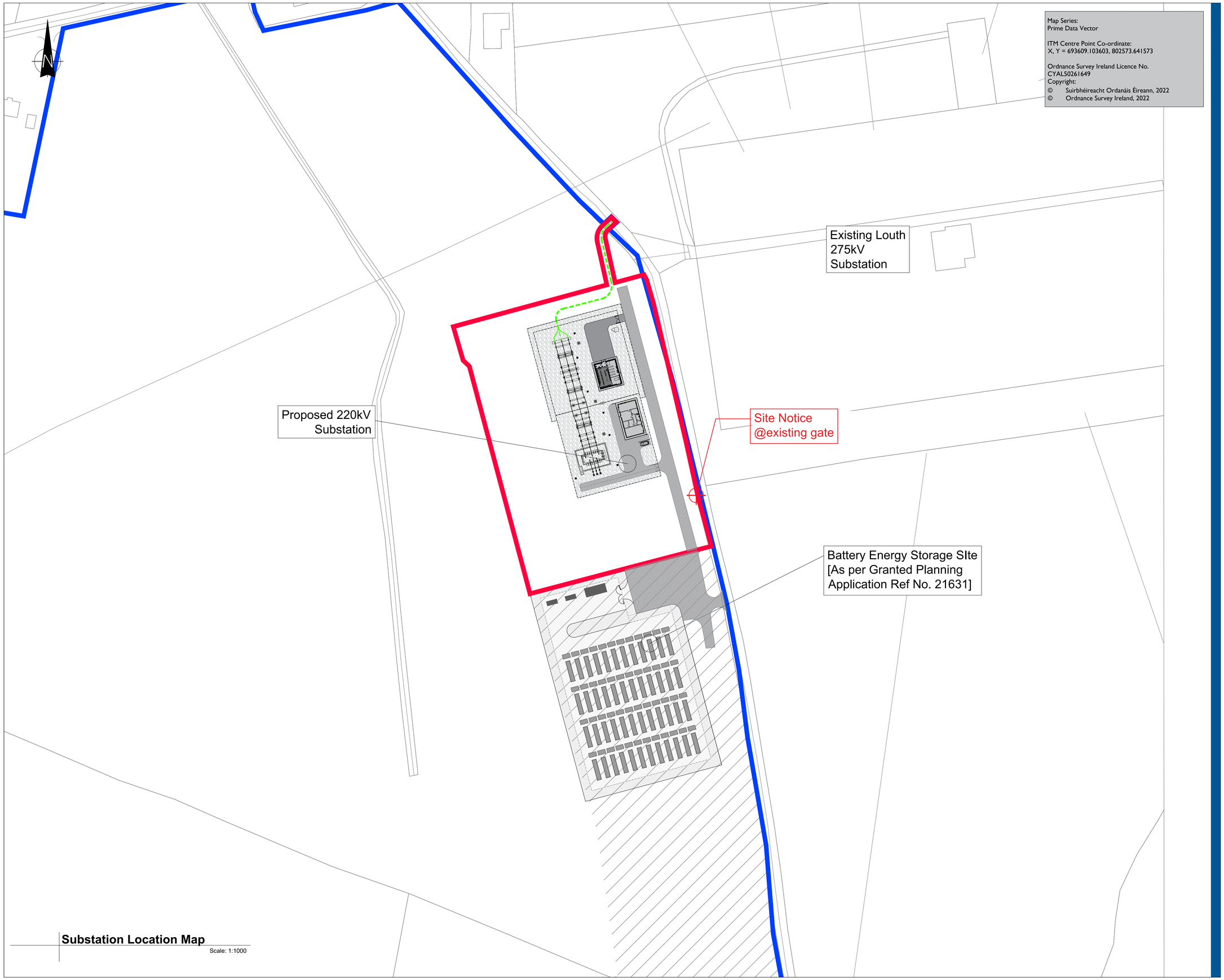
APPENDICES

APPENDIX A

ISO A1 594mm x 841mm



Map Series:
Prime Data Vector

ITM Centre Point Co-ordinate:
X, Y = 693609.103603, 802573.641573

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Substation Location Map
Scale: 1:1000

Project Management Initials: Designer: JC Checked: DB Approved: RG

tli GROUP

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PROJECT

Proposed 220kV Substation & Grid Connect

CLIENT

STRATEGIC POWER PROJECTS

CONSULTANTS

MALONE O'REGAN CONSULTING ENGINEERS

NOTES: -

LEGEND: -

- UGC Grid Connection Option shown thus (Approx. 250m)
- Red Line Planning Boundary shown thus
- Land under control of Applicant shown thus

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P3	06.12.22	Issued for Planning
P2	02.12.22	Issued for Planning
P1	15.11.22	Issued for Planning

PROJECT NUMBER

05-895

SHEET TITLE

Substation Location Map (1:1000)

SHEET NUMBER

05895-DR-001