Appropriate Assessment Screening Report

Ballysumaghan Battery Facility

Co. Sligo

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For: PNG Energy

By: ID Environmental Consultants Ltd

Contents

Abbreviations

Abbreviation	Term
AA	Appropriate Assessment
CJEU	Court of Justice of the European Union
EC	European Commission
GI	Geotechnical Investigations
IROPI	Imperative Reasons Of Overriding Public Interest
LSE	Likely Significant Effects
NHA	Natural Heritage Areas
NIS	Natura Impact Statement
pNHA	proposed Natural Heritage Areas
OPR	Office of the Planning Regulator
TFEU	Treaty on the Functioning of the European Union
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Definitions

Definition	Term
Appropriate Assessment (AA)	An assessment of the potential adverse effects of a plan or project (in combination with other plans or projects) on Special Areas of Conservation and Special Protection Areas
Department of Environment, Heritage and Local Government	Previous name for Department of Housing, Local Government and Heritage. The Irish government department responsible for housing, local government (including planning) and heritage.
Effect	Outcome to an ecological feature from an impact, e.g. the effects on an animal population from loss of a hedgerow.
European Commission (EC)	The executive body of the European Union responsible for proposing legislation, enforcing European law, setting objectives and priorities for action, negotiating trade agreements and managing implementing European Union policies and the budget.
Habitats Directive (92/43/EEC)	European Directive relevant to the on the conservation of natural habitats and of wild fauna and flora
Impact	Actions resulting in changes to an ecological feature, e.g. the construction activities of a development removing a hedgerow.
Natura 2000 / European Site	A network of sites selected to ensure the long-term survival of Europe's most valuable and threatened species and habitats. European site" replaced the term "Natura 2000 site" under the EU (Environmental Impact Assessment and Habitats) Regulations 2011 S.I. No. 473 of 2011
Receptor	Environmental component that may be affected, adversely or beneficially, by the project.
Special Protection Areas (SPAs).	Areas of protected habitats and species as defined in the Habitats Directive (92/43/EEC).

Definition	Term
Special Areas of Conservation (SACs)	Sites classified in accordance with Article 4 of the EC Birds Directive (79/409/EEC) which came into force in April 1979. They are classified for rare and vulnerable birds (as listed on Annex 1 of the Directive), and for regularly occurring migratory Species.
Qualifying Interest (QI)	Relates to the habitats and/or (non-bird) species for which an SAC or SPA is selected
Zone of Influence (ZoI)	Spatial extent of potential impacts resulting from the project.

1 Introduction

Works are proposed for the development of a Battery Storage Facility in Ballysumaghan Co. Sligo. The development will consist of a 10-year planning permission for the construction of a: 1. enclosed battery energy storage system compound on a total of up to c. 1.7-hectare site, to include: 1 no. single-storey customer substation and 1 no. TSO substation (c.182m2), control and switch rooms, up to 174 battery units set inside storage blocks on concrete support structures including heating, ventilation and air conditioning unit (HVAC units), transformer and inverter units. Including access tracks and site entrance along with upgrade works on the public roads (c.800m), associated electrical cabling and ducting, security gates, palisade perimeter security fencing (c. 2.6m height), CCTV system, landscaping works and all associated ancillary infrastructure. The total development area including the public road improvements is c. 2.3 hectares. A Natura Impact Statement has been prepared for this proposed development to assess and mitigate any potential ecological impacts.

The following report has been completed to provide information regarding the ecological status of the proposed site of works. The report includes a general ecological assessment of the site including designated sites. This report has been completed to provide the information necessary to allow the competent authority to conduct an Article 6[3] Appropriate Assessment (AA) Screening of the proposed development.

1.1 Relevant Legislation and Overall Screening Methodology

The methodology for this screening statement is set out in a document prepared for the Environment DG of the European Commission entitled 'Assessment of plans and projects significantly affecting Natura2000 sites: Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EEC' (European Commission, 2019). This report and any contributory fieldwork were carried out in accordance with guidelines given by the Department of Environment, Heritage and Local Government (2009, amended 2010).

The process is given in Articles 6(3) and 6(4) of the Habitats Directive and is commonly referred to as 'Appropriate Assessments' (which in fact refers to Stage 2 in the sequence under the Habitats Directive Article 6 assessment). Article 6 of the Habitats Directive sets out provisions which govern the conservation and management of Natura 2000 sites. 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 (Natura2000) site but likely to have a significant effect thereon, either individually or in combination with other plans or 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."

Article 6(4) of the same directive states:
"If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of the Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest."

It is the responsibility of the proponent of the plan or project to provide the relevant information (ecological surveys, research, analysis etc.) for submission to the 'competent national authority'. Having satisfied itself that the information is complete and objective, the competent authority will use this information to screen the project, i.e. to determine if an AA is required and to carry out the AA, if one is deemed necessary. The competent authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned. The appropriate assessment process has four stages. Each stage determines whether a further stage in the process is required. If, for example, the conclusions at the end of Stage One are that there will be no significant impacts on the Natura 2000 site, there is no requirement to proceed further. The four stages are:

1. Screening to determine if an appropriate assessment is required.
2. Appropriate assessment
3. Consideration of alternative solutions
4. Imperative Reasons of Overriding Public Interest/Derogation

Stage 1: Screening

This is to determine if an appropriate assessment is required. Screening is the technique applied to determine whether a particular plan would be likely to have significant effects on a Natura 2000 site and would thus warrant an Appropriate Assessment. The key indicator that will determine if an Appropriate Assessment is required is the determination of whether the development is likely to have significant environmental effects on a Natura 2000 site or not.

Stage 2. Appropriate Assessment

This step is required if the screening report indicates that the development is likely to have a significant impact on a Natura 2000 site. Stage 2 assesses the impact of a plan or project on the integrity of the Natura 2000 site, either alone or in combination with other plans or projects, with respect to the site's structure, function and conservation objectives. Where there are adverse impacts, an assessment of the potential mitigation of these impacts is also required.

Stage 3. Assessment of Alternative Solutions

If it is concluded that, subsequent to the implementation of measures, a plan or project will have an adverse impact on the integrity of a Natura 2000 site, it must be objectively concluded that no alternative solutions exist before the plan or project can proceed.

Stage 4. Imperative Reasons of Overriding Public Interest/Derogation

Where no alternative solutions exist and where adverse impacts remain but imperative reasons of overriding public interest (IROPI) exist for the implementation of a plan or project, an assessment of compensatory measures that will effectively offset the damage to the Natura 2000 site will be necessary.

1.1.1 Case law

The European Court of Justice has made a number of relevant rulings in relation to when an Appropriate Assessment is required and its purpose: "*Any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects*" and that the plan or project may only be authorised "*where no reasonable scientific doubt remains as to the absence of such effects*".

A list of relevant ruling is provided below:

Table 1: Case law relevant to the AA Screening for the Proposed Development

Case	Ruling
People Over Wind and Sweetman v Coillte Teoranta (C-323/17)	The ruling of the CJEU in this case requires that any conclusion of 'no Likely Significant Effect' on a European site must be made prior to any consideration of measures to avoid or reduce harm to the European site. The determination of Likely Significant Effects should not, in the opinion of the CJEU, constitute an attempt at detailed technical analyses. This should be conducted as part of the AA.
Waddenzee (C-127/02)	The ruling in this case clarified that AA must be conducted using best scientific knowledge, and that there must be no reasonable scientific doubt in the conclusions drawn. The Waddenzee ruling also provided clarity on the definition of 'significant effect', which would be any effect from a plan or project which is likely to undermine the conservation objectives of any European site.
Holohan and Others v An Bord Pleanála (C-461/17)	The conclusions of the Court in this case was that consideration must be given during AA to: effects on qualifying habitats and/or species of a SAC or SPA, even when occurring outside of the boundary of a European site, if these are relevant to the site meeting its conservation objectives; and, effects on non-qualifying habitats and/or species on which the qualifying habitats and/or species depend and which could result in adverse effects on the integrity of the European site.
T.C Briels and Others v Minister van Infrastructuur en Milieu (C-521/12)	The ruling of the CJEU in this case determined that compensatory measures cannot be used to support a conclusion of no adverse effect on site integrity.

1.2 Guidance Documents

This report has been prepared with regard to the following guidance documents on Appropriate Assessment, where relevant:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (Department of Environment, Heritage and Local Government, 2010 revision);
- Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities. Circular NPWS 1/10 & PSSP 2/10;
- 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 Environment Directorate-General, 2001 and updates April 2015 and September 2021). The guidance within this document provides a non-mandatory methodology for carrying out assessments required under Article 6(3) and (4) of the Habitats Directive;
- Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitats Directive 92/43/EEC (EC Environment Directorate-General, 2018); and
- Communication from the Commission on the precautionary principle. European Commission (2000). · OPR (2021) Appropriate Assessment Screening for Development Management. Practice Note PN01. Office of the Planning Regulator. March 2021.

1.3 Methodologies

This screening report was informed by a desk study of all relevant environmental information and also included a review of the ecological field survey data recorded during May 2022. The screening then incorporated the following steps (broadly based on EC [2000]):

- Determine if the proposed works are directly connected with or necessary to the management of the site;
- Describe the proposed works;
- Describe the baseline environment;
- List 'Relevant' European sites which are those sites potentially connected to the proposed works by source-pathway-receptor linkages; and
- Conclude if linkages to 'Relevant' sites have the potential to give rise to Likely Significant Effects (LSE).

1.3.1 The Source-Pathway-Receptor Model

The standard 'source-pathway-receptor' conceptual model is a standard tool in environmental assessment. In order for an effect to occur, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism means there is no likelihood for the effect to occur. An example of this model is provided below:

- Source (s); – e.g. Piling;
- Pathway (s); e.g. Vibration; and
- Receptor (s); e.g. Underground otter resting site at risk of collapse

The model evaluates the receptors as the qualifying interests (QIs) for which individual European sites are designated, with reference to the latest conservation objectives from the National Parks and Wildlife Service (NPWS) website, or substitute detailed objectives from other European sites where only generic objectives are available.

European sites are at risk of significant effects as a result of the proposed works where a source-pathway-receptor link exists between any elements of the proposed works and the European site. In order for an impact to occur there must be a risk enabled by having a 'source' (e.g. proposed works), a 'receptor' (e.g. a SAC/SPA or their QI habitats/species), and a pathway between the source and the receptor (e.g. a watercourse which connects the impact source at a site of proposed works to a SAC/SPA). The risk of the impact does not automatically mean it will occur, nor that it will be significant. However, identification of the risk does mean that there is a possibility of ecological or environmental impact occurring, with the level and significance of the impact depending upon the nature and exposure to the risk, and the characteristics of the receptor.

1.3.2 The Precautionary Principle

The Precautionary Principle has been defined by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) as: "When human activities may lead to morally unacceptable harm [to the environment] that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. The judgement of plausibility should be grounded in scientific analysis". Reasoned application of the 'Precautionary Principle' is fundamental to the Screening Stage (and AA). The precautionary principle is referenced in Article 191 of the Treaty on the Functioning of the European Union (TFEU). It relates to an approach to risk management whereby if there is the possibility that a given policy or action might cause harm to the public or the environment and if there is still no scientific consensus on the issue, the policy or action in question should not be pursued.

The precautionary principle prevails where 'reasonable scientific doubt' cannot be ruled out. Known threats to QIs of relevant sites are analysed to avoid overlooking subtle or far-field effect pathways. The duration of potential effects is a key consideration, in particular, because the European Court of Justice has recently ruled—albeit in specific reference to priority habitats—those effects to site integrity must be "lasting".

1.3.3 Zones of Influence and Potential Impacts or Effects

The proposed works have the potential to result in a number of direct and indirect effects. These are set out in Table 3.1, which identifies the "zones of influence" for each effect (i.e. the area over which effects may occur).

Table 2: Potential impacts, effects and their zone of influence

Potential Impact and Effect	Description	Zone of Influence
Land-take resulting in habitat loss or degradation.	The permanent loss of the habitat present in the footprint of the development and access route.	Lands within the proposed footprint of works and access routes.
Changes in water quality and quantity/distribution resulting in habitat loss or degradation.	Reduction in the quality of retained habitat or loss of habitat from surrounding areas as a result of surface water pollution.	Changes in surface water quality, as a result of works, are associated with the proposed development within local water courses adjacent to and downstream of the proposed development site.
Noise or vibration resulting in disturbance.	Direct impact on feature species reducing their ability to forage or breed.	Assessment is based on the nature of the sensitive receptors found. Assessed within 150m from Otters holting sites. Assessed within 10m for breeding birds during construction. Assessed within 500m for wintering birds
Cumulative Impacts and Effects	Impacts and effect in combination with other current and upcoming plans and projects locally	Projects also with the Ballygrania stream catchment and within 5km of the site of works

1.4 Statement of Authority

This survey was completed by Ian Douglas (MSc, BSc, H Cert. Ag) of ID Environmental Consultants. Ian is an Ecologist and Environmental Consultant with over 10 years' experience specialising in appropriate assessment, ecological impact assessment, habitats assessment, soil science, GIS mapping and regenerative agriculture. Ian has worked on projects including large road developments, power infrastructure projects, planning applications, planning and design of nature trails, constructed wetland creation and on farm habitat development. Ian previously worked in Ecology and Agriculture in England and Australia before taking a position with Flynn, Furney Environmental Consultants in 2018, with whom he retains a position as Associate Director.

1.5 Site of Works

The study site is located in the townland of Ballysumaghan Co. Sligo. This is located 1.3km North of Sooey in an area of extensively managed agricultural lands separated by hedgerows and treelines. Ballygawley is a further 4.4km to the west, with Sligo Town 12.4km to the northwest. Surrounding the site to the west is the existing Ballysumaghan Battery Facility and areas of scrub surrounding this facility. An area of reed marsh is found to the north along with further low-intensity agricultural lands. Conifer plantations, mixed native woodland and areas of wet grasslands are common throughout the surrounding area.

The most significant semi-natural features locally include hedgerows within and surrounding the subject site, wet grassland of varying quality within the site, areas of reed marsh north of the site and the Ballygania Stream which runs to the north and east of the site.

No European sites are found within the site boundary or directly adjacent to it. The closest is Unshin River SAC which is approximately 5km west of the site or 7.3km via the Ballygrania Rivers, which is connected to this European Designated site. A site location map can be seen in figure 1 and figure 2. An overview of the site about local nationally and internationally designated sites can be seen in figure 3.

1.6 Description of Works

The development will consist of a 10-year planning permission for the construction of a: 1. enclosed battery energy storage system compound on a total of up to c. 1.7-hectare site, to include: 1 no. single-storey customer substation and 1 no. TSO substation (c.182m2), control and switch rooms, up to 174 battery units set inside storage blocks on concrete support structures including heating, ventilation and air conditioning unit (HVAC units), transformer and inverter units. Including access tracks and site entrance along with upgrade works on the public roads (c.800m), associated electrical cabling and ducting, security gates, palisade perimeter security fencing (c. 2.6m height), CCTV system, landscaping works and all associated ancillary infrastructure. The total development area including the public road improvements is c. 2.3

hectares. A Natura Impact Statement has been prepared for this proposed development to assess and mitigate any potential ecological impacts.

Works associated with this development will include:

- Upgrading of Quarry Lane access road
- Stripping and stockpiling of soil and overburden material
- Groundworks and the installation of drainage infrastructure. Details of the site drainage and stormwater design are provided in the technical drawings submitted with this application
- Substation building construction
- Pouring of concrete as part of groundworks
- Installation of the battery storage systems and all associated assets
- Installation of site fencing and CCTV systems and;
- Landscaping works including the planting of trees.

Figure 1: Site boundary and site location map including access routes (Extracted from a map produced by Marble Consulting Engineers 2022)

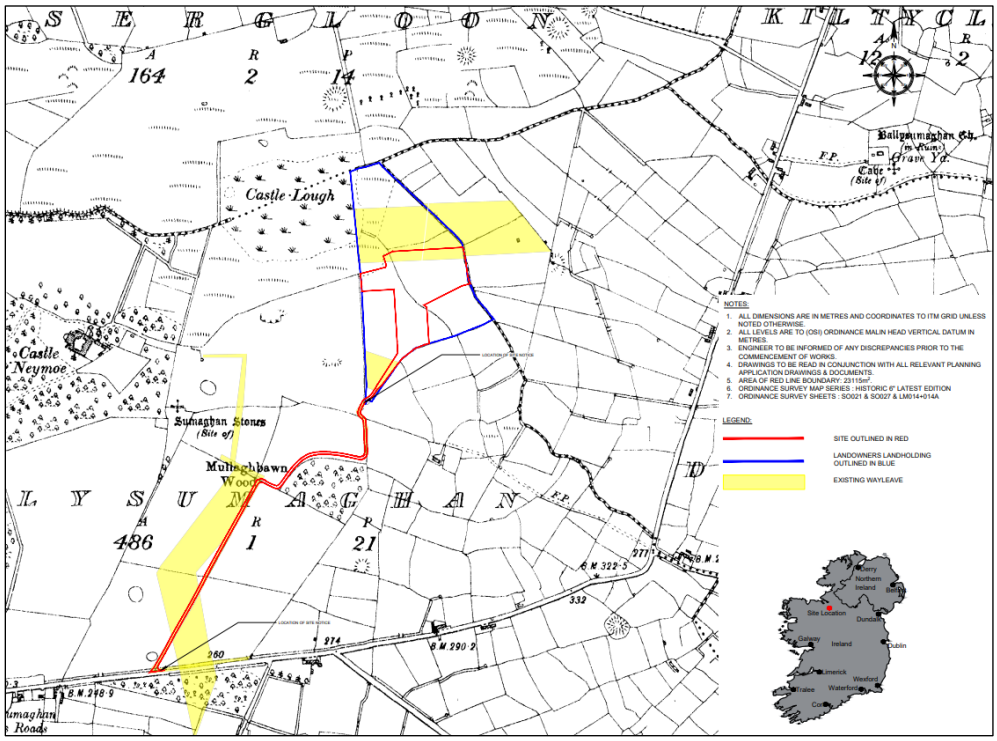
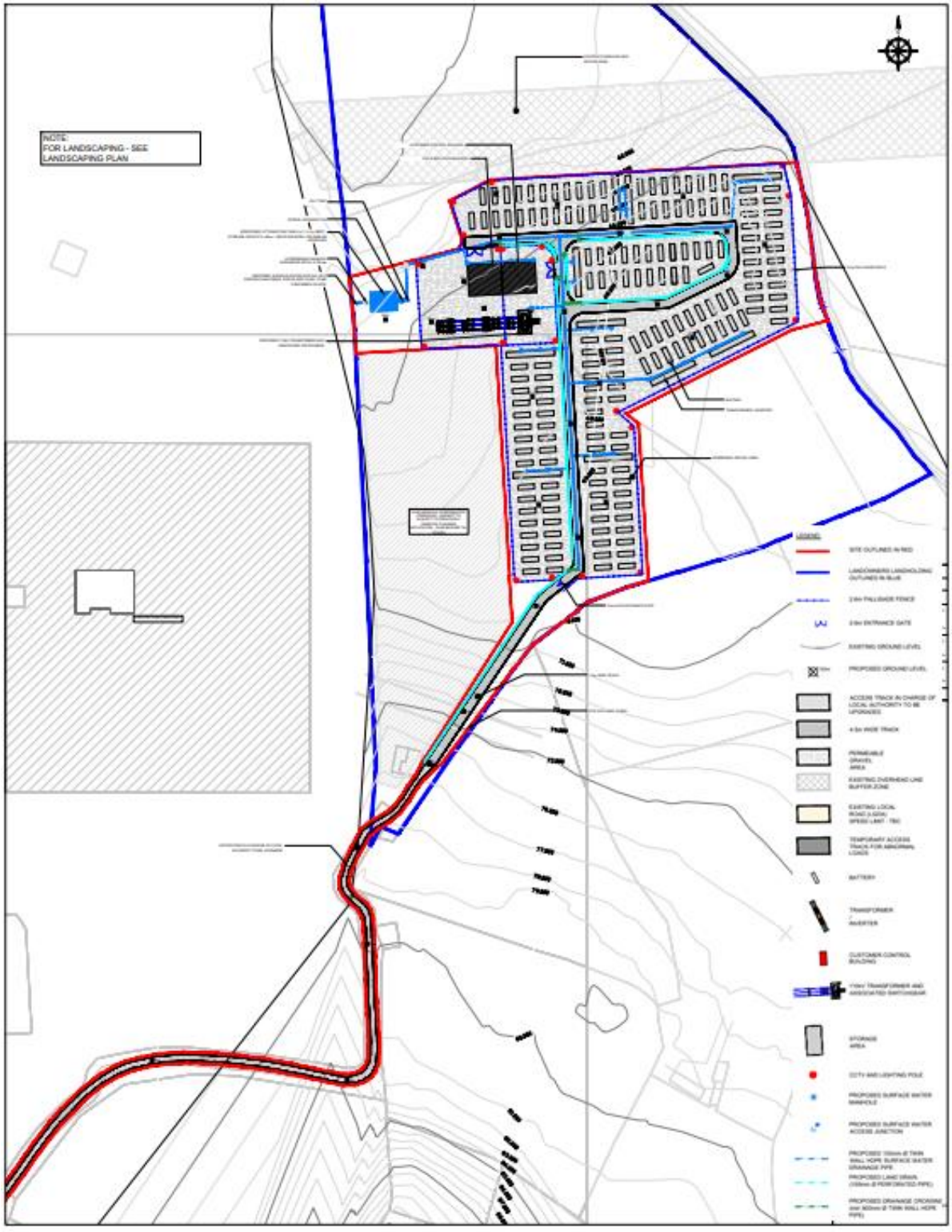


Figure 2: Site location map of the Battery Storage Site (Extracted from a map produced by Marble Consulting Engineers, 2022)


NOTE:
FOR LANDSCAPING - SEE
LANDSCAPING PLAN

1.7 Habitats and Flora

The desktop assessment of recorded flora via the NBDC[1] returned no records of protected or rare flora within 2km of the subject lands. Field surveys were carried out on the 11th of August 2022. The following habitat types were recorded within or surrounding the proposed development site during fieldwork. The habitat assessment was carried out according to guidelines given by the Heritage Council (2011) and the JNCC (2010). Habitat classification followed Fossitt (2000).

Habitats within the Proposed Development Site

1.7.1 Wet Grassland (GS4)

Wet grassland makes up the majority of the proposed site. This habitat was dominated by Rushes (*Juncus spp*.) Grasses included Yorkshire fog (*Holcus lanatus*), Creeping Bent (*Agrostis stolonifera*) and Rough Meadow-grass (Poa trivialis). The herb component frequently contained Creeping Buttercup (*Ranunculus repens*), Marsh Thistle (*Cirsium palustre*), Silverweed (*Potentilla anserin*a), Meadowsweet (*Filipendula ulmaria*) and Cuckooflower (*Cardamine pratensis*). Common Spotted Orchid (*Dactylorhiza fuchsii*) was occasional along with Marsh Ragwort (Jacobaea aquatica) and Selfheal (*Prunella vulgaris*).

1.7.2 Improved/ Wet Grassland (GA1/GS4)

This habitat was found in instances where drainage, fertilisation or possibly reseeding of former wet grassland has taken place. Rushes were still abundant. Grasses usually consisted of Yorkshire fog, and Creeping Bent, with Rye Grass (*Lolspp Spp*) occasional. The herb component consisted of Creeping buttercup, selfheal, Meadowsweet, Cuckooflower and Sheep's Sorrel (*Rumex acetosella*).

1.7.3 Hedgerows (WL1)

All fields and access roads within and surrounding the proposed development site were separated by hedgerows. These were usually on a bank with a small drain at their base. Trees and shrubs included Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*), Gorse (*Ulex europaeus*), Holly (*Ilex aquifolium*), Dog-rose (*Rosa canina*) and Bramble (*Rubus fruticosus agg*). The herb layer consisted of Meadowsweet, Great Willowherb (*Epilobium hirsutum*), Water Horsetail (*Equisetum fluviatile*), Lady-fern (Athyrium filix-femina) and Hart's-tongue (Asplenium scolopendrium). Mosses were abundant throughout.

[1] https://maps.biodiversityireland.ie/Map

Devil's-bit Scabious (*Succisa pratensis*) and Common Spotted Orchid (Dactylorhiza fuchsii) were noted occasionally.

1.7.4 Treelines (WL2)

Treelines were also common features in the same context as hedgerows discussed above. Treelines often also had the same characteristics as hedgerows but contained more mature trees. A Treeline approximately 70m long is found on the north-eastern corner of the site of works. This contained Ash, Willow, Hawthorn and Alder (*Alnus glutinosa*).

1.7.5 Mixed Broadleaved Woodland (WD1)

An area of plantation woodland in the north-eastern corner of the proposed development site. This planation was composed of broadleaved trees composed almost entirely of Alder. This area is approximately 770m^2.

Habitats Outside the Proposed Development Site

1.7.6 Reed and large sedge swamps (FS1)

A large reed swamp was found adjacent to the site's northern boundary. This was dominated by Reed Canary-grass (*Phalaris arundinacea*). The herb component consisted of Great willowherb, Meadowsweet, Tufted Vetch (*Vicia cracca*), Vetchling (*Lathyrus pratensis*) and Angelica (*Angelica sylvestris*).

1.7.7 Drain (FW4)/ Upland Eroding River (FW1)

The Ballygrania stream to the east of the development area is only a small drain at this point along its course. The water course is classified partially as a drain as it has been highly mortified along this section of its course through historical deepening and likely straightening. This watercourse was found in a channel approximately 80cm deep. The flow was limited and the depth was less than 15cm. Stock from the surrounding fields have open access to this water course to the south of the development site. The site adjacent to the site the water course is separated from the works area by scrubby hedgerows and long rank grass composed mostly of Cock's-foot grass (*Dactylis glomerata*) and False Oat-grass (*Arrhenatherum elatius*). Aquatic plants were limited to small amounts of Fool's Water-cress (*Apium nodiflorum*). Bramble and other hedgerow species were found growing along its banks.

1.7.8 Mixed Broadleaved Woodland (WD1)

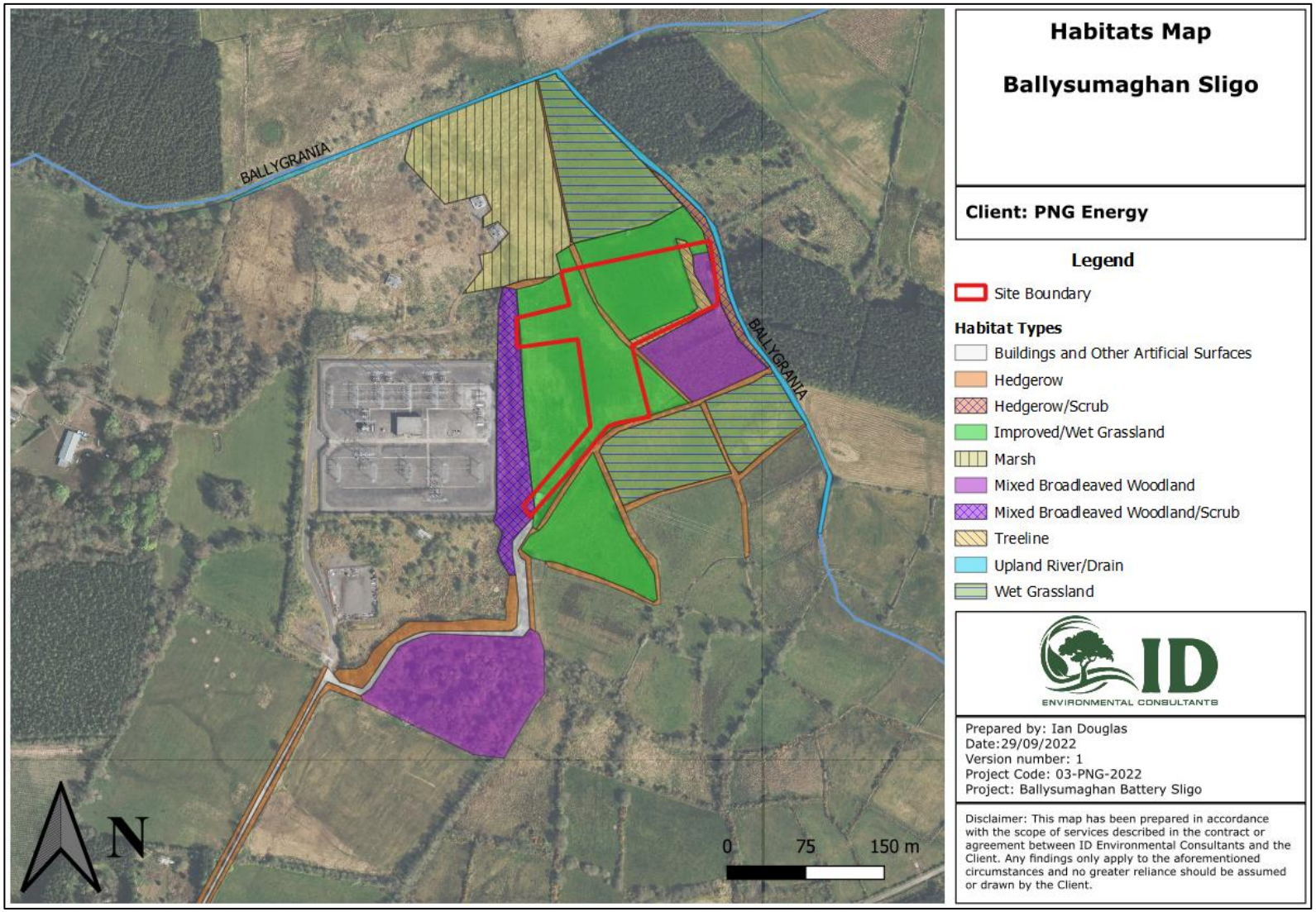
A number of separate areas of this habitat type.

An area of plantation woodland composed almost entirely of Alder is found to the south of the proposed development site. These trees are likely 15 years old and have formed a dense vegetative barrier.

An area of semi-natural woodland was found to the site of the site adjacent to the access round this woodland was dominated by Ash, Willow, and Hazel(*Ulmus spp*) with Blackthorn (*Prunus spinosa*), Hawthorn, Holly (*Ilex aquifolium*) and Rowan (*Sorbus aucuparia*) found around its edges.

An area of scrubby woodland was found adjacent to the east of the existing batter facility. This had a similar composition to the semi-natural woodland discussed above but was dominated by more bramble.

Figure 3: Habitats within and surrounding the proposed development site



1.8 Significance of Habitats

There are no Annex I habitats within the survey area or directly adjacent to it. No habitat types for which the Unshin River SAC have been designated[2] were recorded within or directly adjacent to the proposed development. No rare, threatened, or protected species of plants as per the Red Data List (Wyse Jackson et al., 2016) were found.

1.9 Bird Surveys

A dedicated bird survey was not carried out as part of this assessment. All birds seen and heard during the site survey were recorded. All of the birds recorded were typical species seen and heard in rural low-intensity agricultural areas. These included Blue Tit (*Cyanistes caeruleus*), Blackbird (*Turdus merula*), Willow Warbler (*Phylloscopus trochilus*), Reed Bunting (*Emberiza schoeniclus*), Pied Wagtail (*Motacilla alba subsp. yarrellii*) and Song Thrush (Turdus philomelos), Meadow Pipit (*Anthus pratensis*) and Robin (*Erithacus rubecula*).

1.10 Otters

Otters, along with their breeding and resting places, are protected under the provisions of the Wildlife Act, 1976, as amended by the Wildlife (Amendment) Act, 2000. Otters have additional protection because of their inclusion in Annex II and Annex IV of the Habitats Directive, which is transposed into Irish law in the European Communities (Natural Habitats) Regulations (S.I. 94 of 1997), as amended. Otters are a QI species of Unshin River SAC. No evidence of Otter was noted during surveys of the Ballygrania stream.

1.11 Freshwater species

A dedicated freshwater survey was not carried out. The Ballygrania stream to the east of the development area is only a small drain at this point along its course. The water course is classified partially as a drain as it has been highly mortified along this section of its course through historical deepening and likely straightening. This watercourse was found in a channel approximately 80cm deep. The flow was limited and the depth was less than 15cm., Given the highly modified state of this water course, this watercourse is of low suitability for Salmonids. The Ballygrania stream to the north of the site is wider and in slightly better condition. However, this watercourse is highly modified and is unlikely to provide salmonid spawning potential.

[2] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY001898.pdf

1.11.1 Surface Water Bodies

The proposed site is within the Sligo Bay and Drowse Hydrometric Area and Catchment, the Owenmore (Sligo) Sub-Catchment and the Unshin Sub-Basin. The Unshin River (or Ballysadare River) flows into Sligo Bay at Ballysadare.

The EPA have classified the Ballygrania Stream and its tributaries, along with the other watercourses within this sub-basin as being of high ecological status. The Unshin River downstream of its confluence with this stream is of good ecological status. Under the requirements of the Water Framework Directive in Ireland, this is satisfactory and this status must be maintained.

The Ballygrania Stream flows within 10m from the eastern site boundary of the development site. It flows in a north-westerly and westerly direction until its confluence with the Unshin River, 12.5km downstream. The Ballygrania stream to the east of the development area is only a small drain. This was found in a channel approximately 80cm deep. The flow was limited and the depth was less than 5cm. Stock on the surrounding fields has open access to this watercourse. Aquatic plants were limited to a little Fool's Water-cress (*Apium nodiflorum*). This watercourse continues westwards through a straightened and deepened channel. This section of the water course is separated from the site of works by a large reed Marsh. A map of the site of works and all water courses can be seen in Figure 3.

1.11.2 Groundwater

Groundwater vulnerability is a term used to represent the natural ground characteristics that determine the ease with which infiltrating water and potential contaminants may reach groundwater in a vertical or sub-vertical direction. Subsoil permeability indicates how readily water from the surface can permeate through to the groundwater below. Groundwater vulnerability was assessed using publicly available data sets from the Geological Survey of Ireland GIS web viewer[3]. Groundwater vulnerability and Soil permeability are both low within and surrounding the proposed development site.

[3] https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef

2 Designated Sites Ecological Assessment

A desktop study was carried out as part of the screening process. This included a review of available literature on the site and its immediate environs. Sources of information included the NPWS and National Biodiversity Data Centre databases on protected sites and species.

2.1 Designated Sites

Sites designated for the conservation of nature in Ireland include:

- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Natural Heritage Areas (NHA); and
- proposed Natural Heritage Areas (pNHA)

SACs and SPAs form the European/Natura 2000 network of sites. It is these sites that are of relevance to the screening process for the Appropriate Assessment. SPAs and SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. SPAs and SACs are designated under EU Habitats Directive, transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended. The following was considered when reviewing European sites:

1. Whether the proposed development site was located within or adjacent to any European sites;
2. Any European sites located within 15km of the proposed development site; and
3. Any European sites that are more than 15km from the proposed development site but may potentially be impacted i.e. through a hydrological or bird foraging connection.

This stage in the process is used to determine whether any of the designated sites may be 'screened out'. That is, that they can be regarded as not being relevant to the process, having no potential to be significantly affected or impacted upon.

Table 3: Source – Pathway – Receptor Assessment

Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
Lough Gill SAC 1976	4.2km	• Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation • Old sessile oak woods with Ilex and Blechnum in the British Isles • Alluvial forests with Alnus glutinosa and Fraxinus excelsior • Austropotamobius pallipes (White-clawed Crayfish) • Petromyzon marinus (Sea Lamprey) • Lampetra planeri (Brook Lamprey) • Lampetra fluviatilis (River Lamprey) • Salmo salar (Salmon) • Lutra lutra (Otter)	No source-pathway-receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No receptor between the site of works and this designated site Significant distance of over 4.2km between the site of works and the designated site Nature of this site's conservation objectives relative to the possible impacts identified from the proposed development.

Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
Unshin River SAC 1898	4.5km north-west / 7km downstream via the Ballygrania stream	• Otter (Lutra lutra) • Salmon (Salmo salar) • Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation •	Possible source-pathway-receptor link identified via the Ballygrania Stream. However, given the significant buffer distance of over 7km risk of likely significant effects is extremely limited either alone or in combination with other plans or projects	Yes	
Union Wood SAC 0638	7km north-west	• Old sessile oak woods with Ilex and Blechnum in the British Isles	No source-pathway-receptor links and no risk of likely significant effects identified, either alone or in combination with other plans or projects.	None	No receptor between the site of works and this designated site Significant distance of over 7km between the site of works and the designated site Nature of this site's conservation objectives relative to the possible impacts identified from the proposed development.
Ballysadare Bay SAC	8.9km north-west	• Estuaries	Possible source-pathway-receptor links	Yes	

Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
0622	/ 16.5km downstream via the Ballygrania stream and the Unshin River	• Mudflats and sandflats not covered by seawater at low tide • Embryonic shifting dunes • Shifting dunes along the shoreline with Ammophila arenaria • Fixed coastal dunes with herbaceous vegetation • Humid dune slacks • Vertigo angustior (Narrow-mouthed Whorl Snail) • Phoca vitulina (Common Seal)	and via the Ballygrania stream and the Unshin river system.		Extremely unlikely given the significant distance of over 16.5km between the site of works and the designated site Nature of this site's conservation objectives relative to the possible impacts identified from the proposed development.
Ballysadare Bay SPA 4129	8.9km north-west / 16.5km downstream via the Ballygrania stream and the Unshin River	• Light-bellied Brent Goose (Branta bernicla hrota) • Grey Plover (Pluvialis squatarola) • Dunlin (Calidris alpina) • Bar-tailed Godwit (Limosa lapponica)	Possible source-pathway-receptor links and via the Ballygrania stream and the Unshin river system.	Yes	Extremely unlikely given the significant distance of over 16.5km between the site of works and the designated site Nature, size and scale of the proposed development.

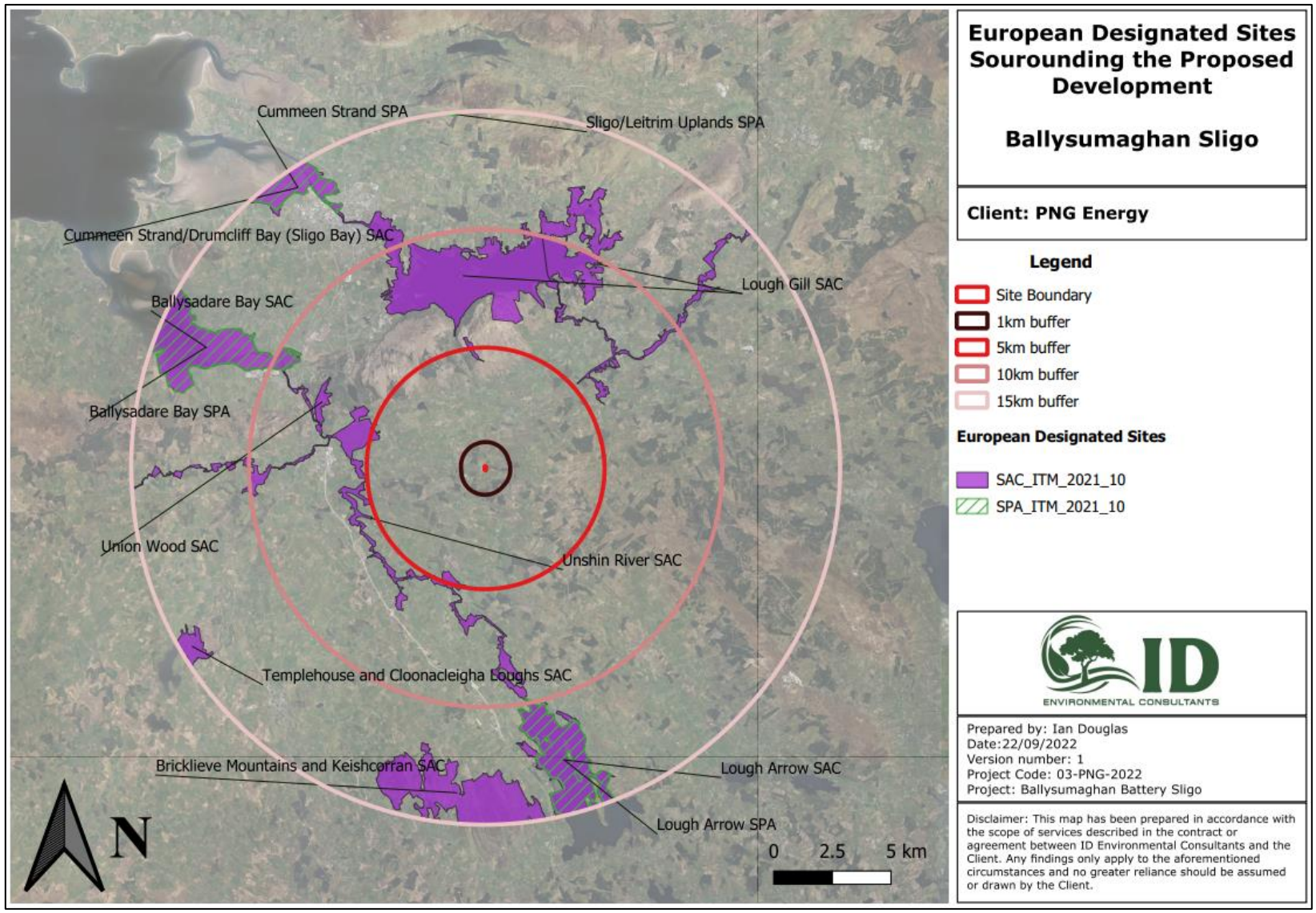
Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
		• Redshank (Tringa totanus) • Wetland and Waterbirds			
Lough Arrow SAC 1673	10km south	• Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	No source-pathway-receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No Receptor between the site of works and this designated site Nature, size and scale of the proposed development
Lough Arrow SPA 4050	10.1km south	• Little grebe (Tachybaptus ruficollis) • Tufted duck • (Aythya fuligula) • Wetlands & Waterbirds	No receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No Receptor between the site of works and this designated site Nature, size and scale of the proposed development
Cummeen Strand/Drumcliff Bay (Sligo Bay) SAC 0627	11.8km north-west	• Estuaries • Mudflats and sandflats not covered by seawater at low tide • Embryonic shifting dunes • Shifting dunes along the shoreline with Ammophila arenaria	No receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No Receptor between the site of works and this designated site Nature, size and scale of the proposed development

Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
		• Fixed coastal dunes with herbaceous vegetation • Juniperus communis formations on heaths or calcareous grasslands • Petrifying springs with tufa formation (Cratoneurion) • Vertigo angustior (Narrow-mouthed Whorl Snail) • Petromyzon marinus (Sea Lamprey) • Lampetra fluviatilis (River Lamprey) • Phoca vitulina (Common Seal)			
Bricklieve Mountains & Keishcorran SAC 1656	12.2km south	• Turloughs • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)	No receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No Receptor between the site of works and this designated site Nature, size and scale of the proposed development

Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
		• Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) • Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii) • Marsh Fritillary Euphydryas aurinia • White-clawed Crayfish Austropotamobius pallipes			
Cummeen Strand SPA 4035	12.2km north-west	• Light-bellied Brent Goose (Branta bernicla hrota) • Oystercatcher (Haematopus ostralegus) • Redshank (Tringa totanus) • Wetland and Waterbirds	No receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No receptor between the site of works and this designated site Nature, size and scale of the proposed development
Templehouse And Cloonacleigha Loughs	14km south-west	• Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	No receptor links and no risk of likely significant effects were identified, either alone	None	No receptor between the site of works and this designated site

Site Name Designation Site Code	Distance to the nearest GI site	Qualifying Interests	Source-Pathway-Receptor Link	Further Analysis for LSEs Required	Rationale (where European site is excluded)
SAC 0636		• Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	or in combination with other plans or projects.		Nature, size and scale of the proposed development.
Sligo/Leitrim Uplands SPA 4187	14.6km north	• Peregrine (Falco peregrines) • Chough (Pyrrhocorax pyrrhocorax)	No receptor links and no risk of likely significant effects were identified, either alone or in combination with other plans or projects.	None	No receptor between the site of works and this designated site Nature, size and scale of the proposed development

Figure 4: Designated sites within 15km



2.2 Cumulative and In combination Effects

Reference	Description of the Development	Likelihood of Significant Effects	Cumulative and In combination Effects
2011	development consisting of a 10-year permission. The development will consist of the development and operation of a 250 to 300 MVA (electrical rating) synchronous condenser. The development which will be located within a site compound of c. 1 hectare and will consist of the following elements: A Condenser and Control Building to house equipment including the synchronous condenser, flywheel, lube oil skid system, air compressor and pumps. Equipment to be located outside the footprint of the Condenser and Control Building but within the fenced compound will include: Cooling equipment (c. 160 sq m., c.3m high); 6 No. modular containers to house electrical and control equipment (total area of c. 195 sqm., c. 5m high); A step-up transformer, auxiliary transformer and electrical plant including an external circuit breaker; 1 No. firefighting water tank; A below ground oil interceptor and attenuation tank in lieu of the originally proposed above ground oil interceptor and collection pit. Underground cabling ducts and cable to the neighbouring ESB substation boundary fencing (c. 500m). Palisade security entrance gate, boundary fencing and CCTV; All other ancillary and miscellaneous site works including site clearance; demolition of an existing agricultural shed, site access, internal roads and development of areas of hard standing including a maintenance lay-down area. Following a direction under section 177T(5) of the	This development has been subject to Appropriate Assessment (REC, 2020). This concluded that with the implementation of mitigation measures no Permanent or residual impacts would occur to the Unshin SAC or any other designated site.	None identified

	Planning and Development Act 2000 (as amended), a Natura Impact Statement (NIS) will now accompany the planning application.		
2011	Development consisting of the installation of battery arrays, located within container units (18 number units, each 30m2 by c.2.6m tall), a control building (c.160.5m2 by c.6.4m tall) and transformer (c.5m tall). The development will include for ancillary infrastructure including security fencing, lighting, CCTV, internal access roads and drainage. The overall development site is c.0.64Ha. The application is accompanied by a Natura Impact Statement (NIS).	This development has been subject to Appropriate Assessment (Malone O'Regan, 2020). This concluded that with the implementation of mitigation measures no Permanent or residual impacts would occur to the Unshin SAC or any other designated site.	None identified

2.3 Summary of Assessment of Possible LSE to European Sites

A total of 12 European designated sites were identified within and beyond 15km of the proposed development. Possible LSE have been identified as a result of the proposed development upon Unshin River SAC. The possibly of LSE is primarily due to the risk of impacts to water quality due to works within close proximity to the Ballygrania stream which could provide hydrological connectivity between the site of works and this European designated site. Potential impacts identified include:

- Deterioration of water quality in designated areas arising from pollution from surface water run-off during site preparation and construction;
- Deterioration in water quality in designated areas arising from pollution during the operation of the proposed project;
- Cumulative impacts with other proposed/existing projects.

No possible LSE have been identified as a result of the proposed development to any other European sites within or beyond 15km of the site of works. No risks to the conservation objectives of any other European sites noted in table 4 will occur due one or a combination of the following:

- Significant buffer distance between the from the works area to the European site

- Size, scale and location of the proposed development
- The nature of the site's conservation objectives
- No impact or change to the management of any designated area or;
- No change to chemical or physiological condition of any designated site as a result of the proposed works.

3 Article 6(3) Screening Assessment Conclusion

LSE to the Unshin River SAC have been identified through the source-pathway-receptor assessment provided in Table 4.

3.1 Assessment of Likely Significance of Effects

Possible water quality impacts as a result of the construction and operational phase of the proposed development have been identified that may impact on water quality within the Unshin River SAC. This may lead to indirect impacts to aquatic habitats, mammals and fish species for which this SAC has been designated.

Overall Conclusions

In our professional opinion and in view of the best scientific knowledge and in view of the conservation objectives of the European sites reviewed in the screening exercise, LSE upon the conservation objectives of the Unshin SAC could not be definitively ruled out at screening stage. Therefore, Appropriate Assessment and a Nature Impact Statement is required.

4 References and Guidance Documents

European Commission. (2001). Assessment of plans and projects significantly affecting Natura 2000 sites.

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DoEHLG. (2009). Appropriate Assessment of Plans and Project in Ireland – Guidance for Planning Authorities, Department of the Environment, Heritage & Local Government.

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EC. (2001). Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC.

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EC. (2006). Nature and biodiversity cases: Ruling of the European Court of Justice. Office for Official Publications of the European Communities, Luxembourg.

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Fossitt, J.A. (2000) *A Guide to Habitats in Ireland*. The Heritage Council, Kilkenny.

JNCC. (2007). *Handbook for Phase 1 Habitat Survey*. Joint Nature Conservation Committee, Peterborough, UK.

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Smith, G.F., O'Donoghue, P., O'Hora, K. and Delaney, E. (2011). Best practice guidance for habitat survey and mapping. *The Heritage Council: Ireland*.

TII (2008), Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes

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Appendix 1: Site Photos

Areas of improved/wet grassland	Marsh Habitat at the North of the site of works
	

The Ballygrania Stream at the bottom (North) of the Site	Tall herbs in the Reed Marsh habitat area
	

Natura Impact Statement Report

Ballysumaghan Battery Facility

Ballysumaghan Co. Sligo

1 Introduction

ID Environmental Consultants have been commissioned by PNG Energy to provide a Natura Impact Statement (NIS) for the proposed Ballysumaghan Battery Facility project and associated works.

An AA Screening was completed by the current authors for the proposed Project. This report concluded that the risk of Likely Significant Effect (LSE) upon the qualifying interests of the Unshin River SAC could not be definitively ruled out at screening stage. As such, a Natura Impact Statement is required.

This stage 2 Appropriate Assessment (AA) (Natura Impact Statement (NIS)) is used to determine whether the proposed development would adversely affect the integrity of these European sites. This involves the identification of potential LSE to habitats and or species which form the qualifying interests of these European sites. This report assesses the significance of potential LSE on their conservation status. Negative impacts on the integrity of these habitats or species will require the implementation of avoidance or mitigation measures to avoid progression to

stages 3 and 4 of the Appropriate Assessment process as defined by the Planning and Development Acts 2000 to 2020.

A full description of the project and all project element are provided in Section 1.5 and 1.6 of the Appropriate Assessment Screening Report.

2 Potential Impacts

2.1 Description of Potential Impacts and Effects

The potential for impacts on the qualifying interests of the Unshin River SAC, the Ballysadare Bay SAC and the Ballysadare Bay SPA associated with the construction and operational phases of the proposed development are discussed hereunder. There will be no works within any European sites. Therefore, there will be no direct impacts or habitat fragmentation from this project. Having established no direct impacts or habitat fragmentation, the assessment concentrates on potential indirect impacts on the QI's of the European Site.

The site is hydrologically connected to the Unshin River SAC, the Ballysadare Bay SAC and the Ballysadare Bay SPA. The downstream distance to the River Unshin SAC is 7km and to the Ballysadare Bay SAC / SPA is 16.5km. Applying the Precautionary Principle, in a worst-case scenario and in the absence of mitigation, an accidental pollution event of a sufficient magnitude during construction or operation, either alone of in-combination with other pollution sources, could potentially affect the water quality in the Ballygrania Stream to an extent that leads to impacts upon the conservation objectives of the Unshin River SAC, the Ballysadare Bay SAC and the Ballysadare Bay SPA. A reduction in water quality locally has the potential to affect the aquatic habitats and natural conditions that are required to maintain or achieve the specific attributes and targets of the qualifying interests and the conservation objectives that have been defined for these qualifying interests.

Only those features of the proposed project that have the potential to affect the integrity and conservation objectives of the identified European sites and protected species have been considered. The following areas were identified as sources of potential impacts from the proposed development on the European sites identified:

- Deterioration of water quality in the Ballygrania Stream arising from pollution from surface water run-off during site preparation and construction and;
- Deterioration of water quality in the Ballygrania Stream arising from pollution during the operation of the proposed project;

2.2 Qualify Interests of European Sites and Potential for Impacts

In general, all European sites aim to maintain or restore favourable conservation status of the all quality intertest within European sites.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- 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.

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, and
- the natural range of the species is neither being reduced nor is 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.

Table 4: Qualify Interests of the Unshin River SAC and the potential for impacts upon its conservation objectives

Annexed Habitat or Species	Main Threats and Pressures and Ecology	Potential impacts	Is Mitigation Required
Lutra lutra (Otter)	Otter is likely to occur within the Zone of Influence of the application site; however, no evidence was noted of its occurrence on or surroundings the site. The presence of this species is positively correlated with good water quality and deterioration of same will lead to impacts upon this species. Otters have two basic requirements – aquatic prey and safe refuges where they can rest. In freshwater areas, the diet of the otter consists of a variety of fish from sticklebacks to salmon and eels, whilst crayfish and frog availability can also be important. Impacts that reduce the or quality of, or cause disturbance to, their terrestrial or aquatic habitats are likely to affect otters. The main threats to otters in Ireland are thought to be: (1) habitat destruction, including river drainage and the clearance of bank-side vegetation; (2) pollution, particularly organic pollution resulting in fish kills; (3) disturbance of habitat due to recreational activities, and (4) accidental deaths (NPWS, 2009). Records for this species exist from the Unshin Catchment (NBDC, 2020). In Ireland, the territory of female otters in	Yes - Potential impacts and subsequent effects upon this species due to a decrease in water quality in the Ballygrania Stream and subsequently in the River Unshin SAC. This could arise due to run-off from the site that is contaminated with silt, cement, hydrocarbons or other polluting materials during the construction and operation phase of the proposed development. These impacts may lead to indirect negative effects on this species and the aquatic food	**Mitigation Required**

	mesotrophic rivers is approximately 7.5 +/- 1.5km in length (Ó Néill, L., 2008), whilst the territories of males otters in mesotrophic and oligotrophic rivers is approximately 13.2 +/- 5.3km in length, with a high degree of variability as territorial males respond quickly to social perturbation. Therefore, as records for the otter exist from within the zone of influence of the site, mitigation measures will be included as part of this assessment to protect the overall status of the otter within this SAC.	supply that it depends upon.	
Salmon (Salmo salar)	The river Unshin and its tributaries are an important habitat for the salmon and there are potential suitable habitats for the salmon downstream of the site. The requirements of salmon depend on their life stage but clean, unpolluted water is a requirement throughout the life cycle. They are very sensitive to changes in water quality and increases in sedimentation (<25 mg/L annual average). The main pressures and threats to this species come from agricultural intensification, run-off from agriculture, forestry and household waste waters and poaching. The presence of the salmon in the River Unshin within the Zone of Influence of the site has been assumed and impacts upon this species must be mitigated against. The high status of the Ballygrania Stream must be maintained.	Yes - Potential impacts and subsequent effects upon this species due to a decrease in water quality in the Ballygrania Stream and subsequently in the River Unshin SAC. This could arise due to run-off from the site that is contaminated with silt, cement, hydrocarbons or other polluting materials during the construction and operation phase of	**Mitigation Required**

		the proposed development. These impacts may lead to indirect negative effects on this species and the aquatic food supply that it depends upon.	
Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	This habitat is also commonly known as floating river vegetation. Its definition is wide and Ranunculus, Callitriche, Potamogeton and Myriophyllum species are often present. Pressures on this habitat include eutrophication, overgrazing and alien species. River connectivity within the floodplain is essential for the functioning of this habitat. Suitable conditions for this habitat along the River Unshin within the Zone of Influence (downstream) of the site are likely, therefore impacts upon this habitat from the proposed project are possible and in keeping precautionary principle, mitigation measures will be required. The Ballygrania Stream in proximity to the site does not support this habitat.	Possible indirect impacts on this habitat including the loss or decrease in the quality or area of this habitat due to pollution or a decrease in water quality arising from run-off from the construction and operation of the proposed project. Run-off may contain cement, hydrocarbons and silt which could all lead to negative impacts upon this qualifying feature.	**Mitigation Required**

Alluvial forests with Alnus glutinosa and Fraxinus excelsior	This Annex I Priority habitat occurs at many locations within the River Unshin SAC (NPWS, 2021). Some of the main threats to this habitat include under-grazing and invasive species.	This habitat is not sensitive to deteriorations in water quality. No LSE upon this QI arising from the construction and operation of the proposed development will occur. Given the scale of the works, the likely impacts from the proposed works (if any) and the location of this QI habitat relative to the site of works.	**None**
6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) And 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	The main threats to both of these habitat types are generally agricultural intensification, under-grazing and afforestation. Both of these habitat areas are known from two large tracks of lands south West of Ballygawley. These are found on the shoreline of the Unshin River.	Neither Habitat types is sensitive of water quality impacts which are the main source of possible impacts and effects identified as a result of the proposed development	**None**

Table 5: Qualify Interests of the Ballysadare Bay SAC and the potential for impacts upon its conservation objectives

Annexed Habitat or Species	Main Threats and Pressures and Ecology	Potential impacts	Is Mitigation Required
Estuaries (1130)	Pollution to surface waters Abiotic changes (climate change) Other human intrusions and disturbances	None Sufficiently distant from the works area to ensure no LSE to this habitat area given the size and scale of the proposed works.	**None**
Mudflats and sandflats not covered by seawater at low tide (1140)	Pollution to surface waters Pollution to marine waters Fishing and harvesting aquatic resources Invasive alien species	None Sufficiently distant from the works area to ensure no LSE to this habitat area given the size and scale of the proposed works.	**None**
Embryonic shifting dunes [2110]	Other human intrusions and disturbances Changes in water bodies conditions Outdoor sports, leisure and recreational activities Changes in water bodies conditions	The nature of the possible impacts of the proposed development does not corresponds to the nature of the main threats to this habitat type.	**None**

Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]	Other human intrusions and disturbances Changes in water bodies conditions Outdoor sports, leisure and recreational activities Changes in water bodies conditions	The nature of the possible impacts of the proposed development does not corresponds to the nature of the main threats to this habitat type.	**None**
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Other human intrusions and disturbances Changes in water bodies conditions Outdoor sports, leisure and recreational activities Changes in water bodies conditions	The nature of the possible impacts of the proposed development does not corresponds to the nature of the main threats to this habitat type.	**None**
Humid dune slacks	Changes in the water table Other human intrusions and disturbances Changes in water bodies conditions Outdoor sports, leisure and recreational activities	The nature of the possible impacts of the proposed development does not corresponds to the nature of the main threats to this habitat type.	**None**
Vertigo angustior (Marsh Snail)	Changes in Habitat quality Habitat fragmentation Negative and invasive indicator species Changes in Land use	The nature of the possible impacts of the proposed development does not corresponds to the nature of the main threats to this species	**None**

Phoca vitulina (Common Seal)	Commercial Fishing Reduction in Prey abundance Impacts to breeding and resting site	The nature of the possible impacts of the proposed development does not corresponds to the nature of the main threats to this species.	**None**

Table 6: Qualify Interests of the Ballysadare Bay SAC and the potential for impacts upon its conservation objectives

Annexed Species	Main Threats and Pressures and Ecology	Potential impacts	Is Mitigation Required
Light-bellied Brent Goose (Branta bernicla hrota)	Changes to habitat integrity including water quality Human disturbance within feed and nesting habitat areas Changes in water quality effecting food abundance	None Sufficiently distant from the works area to ensure no LSE to water quality or habitats support this species given the size and scale of the proposed development.	**None**
Grey Plover (Pluvialis squatarola)			
Dunlin (Calidris ariti)			
Bar-tailed Godwit (Limosa lapponica)			
Redshank (Tringa aritim)			
Wetland and Waterbirds [A999	Changes to habitat integrity including water quality Human disturbance within feed and nesting habitat areas Changes in water quality effecting food abundance	No LSE upon the permanent area occupied by the wetland with the Bay as a result of the proposed development.	**None**

2.3 Cumulative Impacts

Cumulative impacts or effects are changes in the environment that result from numerous human-induced, small-scale alterations. Cumulative impacts can be thought of as occurring through two main pathways: first; through persistent additions or losses of the same materials or resource, and second, -through the compounding effects as a result of the coming together of two or more effects (Bowers-Marriott, 1997).

The majority of the planning applications found within 5km of the site of works are for the construction, retention or alteration of private residential developments and farm infrastructure. No 2 other developments were assessed in section 2.2 of this Appropriate Assessment (Screening). Both were subject to NIS and in both instances, it was concluded that through the implementation no cumulative impacts would occur to any designated sites.

3 Mitigation Measures

Mitigation is prescribed in accordance with the EPA draft guidance on EIAR (EPA, 2017) which requires mitigation by avoidance as a first approach. Where this is not feasible, measures to prevent impacts from giving rise to adverse effects should be adopted (e.g., design of bunded storage for chemicals). Where impacts cannot be avoided e.g., generation of noise, mitigation by reduction of impact is required to limit the exposure of the receptor to an acceptable level (often achieved by interrupting the pathway between the source and receptor).
In order to prevent any deteriorations in water quality in the Ballygrania Stream and its tributaries and subsequently in the River Unshin SAC, a number of mitigation measures must be implemented and followed. Measures have also been suggested that will help to protect the local biodiversity of the surrounding area and to ensure the protection of local wildlife. Although these are standard mitigation measures, their implementation will ensure the protection of Natura 2000 habitats and species and the local non-designated ecological receptors. The primary parties responsible for the implementation of these measures include the applicant and the construction team (site manager, and site workers).

A Construction Management Plan should be prepared for the proposed project, which takes into account the mitigation measures contained herein.

Mitigation is prescribed to address the impacts such that adverse effects on site integrity of the European site does not occur. Mitigation measures are set out in accordance with the European Commission guidance on the 'Assessment of plans and projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, (2001).

Guidelines used for the production of these mitigation measures include the following:

- IFI (2016) Guidelines on Protection of Fisheries during Construction Works in and Adjacent to Waters. Inland Fisheries Ireland, Dublin;
- CIRIA Guidelines Control of water pollution from construction sites –Guide to Good Practice (C532); and
- Control of water pollution from linear construction projects. Technical Guidance (C648).

3.1 General Pre-Construction and Construction

- Site preparation and construction must be confined to the project site only and should adhere to all standard best practice measures. Work areas shall be kept to the minimum area required to carry out the proposed works and the area should be clearly marked out in advance of the proposed works.
- Prior to the commencement of works on the site, the construction site personnel will be made aware of the sensitivity of the location and the habitats surrounding the site. The protection of water quality locally will be highlighted.
- Efficient construction practices and sequences shall be employed on site, and this will minimise soil erosion and potential pollution of local watercourses with soil and sediment. Unnecessary clearance of vegetation shall be avoided and only areas necessary for building works shall be cleared. Existing vegetated areas shall be retained where possible. The retention of these areas will also help retain storm water run-off from the site during construction and operation.
- In order to protect water quality in the Ballygrania Stream and its tributaries all site preparation and construction works shall conform to all guidelines within the document Inland Fisheries Ireland Requirements for the Protection of Fisheries Habitats during Construction and Development Works and River Sites (www.fisheriesireland.ie) and the updated guidelines entitled Guidelines on Protection of Fisheries During Construction Works in And Adjacent to Waters (2016). The following guidance will also be followed:

3.2 Site Specific Mitigation Measures

- Works should ensure a minimum setback of 10m from the Ballygrania Stream as it passes the east of the site.
- The Ballygrania Stream as it passes north of the site is separated by a large reed Marsh. This riparian area is acting as a buffer between the site and the river. This area should be protected and avoided by works and not used for the storage of materials or equipment

3.2.1 Protection of water courses.

- Silt fencing shall be installed along the length of the Ballygrania Stream as it forms the sites eastern boundary.
- A vegetative buffer of a minimum of 5 meters should be retained along the length of the Ballygrania Stream as it runs adjacent to the site. No works or storage of equipment should take place within this area.
- Signage should be erected that clearly states that works are occurring adjacent to an ecologically sensitive area.
- The silt fences will have the following design features: – the geotextile fabric must be entrenched at least 100mm into the ground with the ends upturned inward towards the works; – the fence posts will have a maximum spacing of 2m to prevent sag on the fence; and – the geotextile fabric will be anchored to the fence posts as opposed to wrapped.
- Daily inspection of silt fences will be carried out by the site management to assess the effectiveness of the measures, to carry out maintenance, and to determine if there has been any damage / breach to the control measures. The silt fences will also be inspected immediately following heavy rainfall or strong winds (equating to a yellow weather warning). Where repair is necessary, this will be carried out immediately and may require replacement of any damaged / degraded material.
- Accumulated silt will be removed regularly from the base of silt fences and will be removed off site. Silt will not be permitted to build up such that it reaches half the height of the fence or exceeds 15cm in height (whichever is the lesser value).
- Silt fences must remain in place until the disturbed areas within the sites have been reinstated and revegetated.
- Silt fences must only be removed during dry weather and following approval by the ECoW.

3.2.2 Management of Potential Polluting Materials

- Materials and equipment to implement the Spill Response & Control Plan must be available adjacent to all watercourses (for example, spill kits, booms). These should be in clearly marked response points, which can be accessed by all staff.
- Drip trays will be utilized on site for pumps and station equipment situated within 25m of the watercourse and spill kits will be available at these locations for the duration of the contract. Any used spill kits will be disposed of using a hazardous waste disposal contractor and in accordance with all relevant EU and Irish waste management legislation;
- All hazardous substances on-site shall be controlled within an enclosed storage compound that shall be fenced off and locked when not in use to prevent theft and vandalism;

- Refuelling of plant and machinery shall take place at least 30m away from the riparian buffer zone silt fence using a mobile fuel bowser and restricted to designated areas on hard standing.
- Concrete mixing will not occur on-site and will be brought to the site by truck;
- Equipment, batching and ready-mix lorry washing and cleaning shall be washed-out on-site into a designated area that has been designed to contain wet concrete/wash waters.
- Only concrete delivery truck chutes may be washed out in this location.

4 Residual Impacts

Residual impacts are those that occur after mitigation measures have taken effect. If the general and project specific measures that are listed above are employed during the construction and operational phases of the proposed works, there will be no residual impacts on the habitats or species identified within this report.

5 Natura Impact Statement & Conclusion

This NIS has reviewed the impacts arising from the proposed project and found, following a Stage 1 Screening Assessment, that without the implementation of mitigation measures, significant effects could impact upon the integrity of the Unshin River SAC.

These impacts have been outlined in detail in this NIS along with proposed avoidance and mitigation measures. Given the determination of no residual impacts after the predicted impacts have been mitigated, it is considered that the implementation of the proposed project will not result in significant effects to the conservation objectives or integrity of this or any other European designated site

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

References

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