Volume 1: Natura Impact Statement

Colehill 110Kv Substation and Grid Route

26/11/2025

Disclaimer

Neo Environmental Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.

Neo Environmental Ltd	
Head Office - Glasgow: Wright Business Centre, 1 Lonmay Road, Glasgow G33 4EL **T** 0141 773 6262 **E:** info@neo-environmental.co.uk	**Bristol Office** Spaces 8th Floor The Programme Building Bristol BS1 2NB **T:** 01174 571 610 **E:** info@neo-environmental.ie
Warrington Office: Lakeview 600, Lakeside Drive Centre Park Square Warrington WA1 1RW **T:** 01925 661 716 **E:** info@neo-environmental.co.uk	**Rugby Office:** Valiant Suites, Lumonics House, Valley Drive, Swift Valley, Rugby Warwickshire CV21 1TQ **T:** 01788 297012 **E:** info@neo-environmental.co.uk
Ireland Office: C/O Origin Enterprises PLC, 4-6 Riverwalk, Citywest Business Campus Dublin 24, D24 DCW0 **T**: 00 353 (1) 5634900 **E:** info@neo-environmental.ie	**Northern Ireland Office:** 83-85 Bridge Street Ballymena, Co. Antrim BT43 5EN **T:** 0282 565 04 13 **E:** info@neo-environmental.co.uk

Prepared For:

Renewable Energy Systems (RES) Ltd.

Prepared By:

Louis Maloney BSc (Hons) & MSc

Rhona Coghlan BSc

Kellie Kerr BSc (Hons)

	Name	Date
Edited By:	Louis Maloney, Rhona Coghlan & Kellie Kerr	26/11/2025
Checked By:	Eimear Rose Cunningham & Louis Maloney	26/11/2025
	Name	**Signature**
Approved By	Paul Neary	

Contents

1. EXECUTIVE SUMMARY

1.1. Neo Environmental Ltd have been commissioned by Renewable Energy Systems (RES) Ltd ("the Applicant") on behalf of Ballyteige Solar Limited to undertake a Natura Impact Statement for a Strategic Infrastructure Development ("SID") Application for a new 110kV Substation, access road, interconnection cables and grid route ("the Proposed Development") to connect into the existing Thornsberry Substation. The Substation, access road, interconnection cables and grid route is situated within the townlands of Ballyteige Little, Wood of O, Corndarragh, Derrynagall or Ballydaly, Ardan and Puttaghan, Co. Offaly ("the Proposed Development"). The Substation is to facilitate the Ballyteige Solar Farm (PA Ref: 2198) and Derrygrogan Solar Farm (PA Ref: 22378 ABP-318041-23).

1.2. This will assess whether there is connectivity with any European Designated site within a 15km radius of the Proposed Development site and whether the Proposed Development, either alone or in combination with other plans or projects, is likely to have any significant effects on these European Designated sites.

1.3. The Proposed Development site does not occur within any Internationally Designated sites. Within the 15km zone of influence surrounding the Proposed Development Site there are six Special Areas of Conservation (SACs), namely, Charleville Wood SAC, Raheenmore Bog SAC, Spilt Hills and Long Esker SAC, Clara Bog SAC, River Barrow and River Nore SAC and Lough Ennel SAC. In addition, within the 15km zone of influence surrounding the Proposed Development site there are two Ramsar sites, namely, Clara Bog Ramsar site and Raheenmore Bog Ramsar site.

1.4. There are no Special Protection Areas (SPAs) identified within the 15km study zone.

1.5. Of the six European Designated sites it was found that one SAC is hydrologically connected to the Proposed Development Site and one SAC that is ecologically connected to the Proposed Development Site. A hydrological pathway for potential impacts exists between the Proposed Development Site and Charleville Wood SAC. An ecological pathway for potential impacts exists between the Proposed Development Site and the River Barrow and River Nore SAC

1.6. With the implementation of best practice construction methods as detailed in **Technical Appendix 8: Outline Construction Environmental Management Plan** (OCEMP), it can be concluded that there will be **no significant impacts** on the integrity of all SACs within the zone of influence.

1.7. It is therefore considered that the next stage of the Appropriate Assessment is not required and that the development will **not result in any significant Impacts** for any European Designated site.

2. INTRODUCTION

Background

2.1. Neo Environmental Ltd has been appointed by Renewable Energy Systems on behalf of Ballyteige Solar Limited (the "Applicant") to undertake a Natural Impact Statement for a Strategic Infrastructure Development ("SID") Application for a new 110kV Substation ("Colehill 110kV Substation") and grid connection to the existing Thornsberry 110kV substation.

Development Description

2.2. The Proposed Development will consist of:

- 1No. substation compound comprising of No.3 work areas with CCTV and associated drainage which will be enclosed by 2.6m high palisade fencing and gates:
    - 1No. Eirgrid control building, 110kV bay arrangements, 4No. lightning poles, compound road,
    - Crane hardstand, 2No. transformers and 2. No auxiliary transformers, 110kV electrical equipment, back up generator,
    - 2No. Independent Power Purchaser (IPP) control buildings and compound including toilet, 2No. grid code compliance equipment, 2No. harmonic filters, car parking and telecoms pole),
- Property boundary fencing;
- Access tracks (upgraded existing and new);
- Temporary construction compound and temporary access track,
- Temporary and permanent road re-alignment of a section of O of Wood local road;
- c.7.5km of underground 110kV cabling with joint bays, over and under watercourse crossing and a potential horizontal directional drill on access track and local roads;
- c.610m of medium voltage underground interconnection cable with associated horizontal directional drill.

2.3. Please see **Figure 103** in **Volume 2** for a layout of the Proposed Development.

Site Description

2.4. The Proposed Development is situated within the townlands of Ballyteige Little, Wood of O, Corndarragh, Derrynagall or Ballydaly, Ardan and Puttaghan, Co. Offaly.

2.5. The Colehill 110kV Substation is proposed to be located in one relatively flat agriculture field. The proposed 7.5km grid route will run in a northeast direction from the proposed Colehill 110kV substation to the existing ESB Thornsberry 110kV substation via private land and local roads. Interconnection cables from the eastern sections of Derrygrogan Solar Farm will be installed via horizontal directional drilling on a section of an agricultural field underneath the dry canal into the proposed access and track of Colehill 110kV Substation.

2.6. The Proposed Development lies at an elevation of c. 71.7 to 77.8m AOD and covers a total area of c. 11.2 hectares. The approximate Irish Grid Reference points (ITM) of the proposed Colehill 110kV substation are X 639234 and Y 727175. Access to the proposed substation will be from the Wood of O road to the east of the Substation "Proposed Substation Site" which is the same entrance point for the consented Ballyteige Solar Farm (PA Ref: 2198).

2.7. The grid route and substation boundaries are approximately 250m and 5.8km northeast from Tullamore Town.

Adopted Design Principles

2.8. Measures incorporated into the Proposed Development design include the following:

- A 5m buffer from hedgerows within proposed substation compound
- 2m Buffer from Field Drains
- 5m from boundary watercourse
- Tree Buffers dependant on height
- 10m OPW Drain Buffers
- 10m Buffer for overhead line

Statement of Authority

2.9. The assessment has been conducted by ecologists registered with the Chartered Institute of Ecology and Environmental Management (CIEEM). All work has been carried out in line with the relevant professional guidance; CIEEM's Guidelines for Preliminary Ecological

Appraisal[1], report writing[2] and the Environment, Heritage and Local Government's Guidance on Appropriate Assessments[3].

2.10. Louis Maloney, who conducted surveys for and wrote part of this report, is a former Principal Ecologist at Neo Environmental. He has circa seven years of professional ecological experience. This includes terrestrial and marine surveys covering a wide range of fauna and flora such as bird (2 years' of surveying), mammal and vegetative surveys. In addition, Louis has been involved in the management of large variety of projects involving: Environmental Impact Assessment ("EIA"), Natura Impact Statement ("NIS"), Ecological Impact Assessment ("EcIA"), Biodiversity Management Plan ("BMP") and Net Gain Assessment ("NGA") reports. He holds a BSc in Marine Science from the National University of Ireland, and an MSc in Conservation Behaviour – Marine and Terrestrial Science. Louis is in the process of applying for a Full level membership with CIEEM.

2.11. Eiméar Rose Cunningham is a Senior Ecologist at Neo Environmental and is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM), with over 5 years' experience in the environmental/planning sector. She has experience of conducting habitat surveys as well as protected species surveys, including bats, birds and otter. In previous roles Eiméar Rose has experience of GIS map interpretation for large scale infrastructure projects. Furthermore, Eiméar Rose has experience in the completion of ecological report writing having authored and co-authored a number of reports including Ecological Appraisals, Natura Impact Statements, Biodiversity Management Plans and Net Gain Reports, in addition to contributing to Biodiversity Chapters for EIA Developments. Furthermore, Eiméar Rose is a qualified tree climber and aerial rescuer, certified by LANTRA and utilises this qualification for bat survey work.

2.12. Rhona Coghlan who wrote part of this report, is an Assistant Ecologist with over 1 year experience in the ecology and conservation industry. Rhona has been awarded a 1:1 BSc in Environmental Science from the National University of Galway and is a Qualifying Member of the Chartered Institute for Ecology and Environmental Management. Rhona has conducted Fossitt Habitat surveys, Breeding and Wintering Bird surveys, Bat surveys, Otter surveys, and aquatic invertebrate surveys. Rhona has authored Natura Impact Statements, Ecological Impact Assessment, Biodiversity Management Plans, Q-value reports, Wintering Bird reports and more. Rhona is appointed ECoW for two wind farm development and has experience with client-facing consultations and survey reports. Rhona has taken part in several training events organised by CIEEM, The British Trust for Ornithology and Birdwatch Ireland.

[1] CIEEM, 2013. Guidelines for Preliminary Ecological Appraisal. Available at www.cieem.net

[2] CIEEM, 2013. Guidelines for Report Writing. Available at www.cieem.net

[3] Environment, Heritage and Local Government, 2009. Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities. Available at www.npws.ie

2.13. Kellie Kerr, who assisted in the completion of this report, is an Assistant Ecologist with over 3 years of professional experience in the ecology and conservation sector. Kellie holds a BSc Environmental Science (Hons) with Diploma in Professional Practice, achieved qualifying Chartered Institute of Ecology and Environmental Management (CIEEM) membership and has valid Construction Skills Register (CSR), manual handling and first aid qualifications. Kellie has experience completing Phase 1, Fossitt, ornithological and bat protected species surveys. Kellie has authored and co-authored various ecological reports supporting various development types including Ecological Impact Assessment (EcIA), Biodiversity Management Plan (BMP), Natura Impact Statement (NIS)/ shadow Habitats Regulations Assessment (sHRA) as well as species specific reports.

3. LEGISLATION

Requirement for Appropriate Assessment

3.1. The requirement for Appropriate Assessment of plans or projects originates from Article 6 (3) and (4) of European Union (EU) Habitats Directive. This is implemented in Ireland through the European Communities (Natural Habitats) Regulations of 1997, and the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 (as amended). In particular, in relation to the planning consent process, in Part XAB of the Planning and Development Act 2000 – 2015 (as amended) where Section 177U sets out the requirements for Screening for AA.

3.2. The wording of Article 6 (3) of the Directive is as follows:

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

3.3. As outlined in the European Commission document 'Assessment of plans and projects significantly affecting Natura 2000 sites'[4], any project that is not directly connected with or necessary to the management of a Natura 2000 site, but likely to have a significant effect upon it, either individually or cumulatively will be subject to Appropriate Assessment. Furthermore, the European Commission's most recent guidance on Article 6: "Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC"[5] has also been considered.

3.4. Where significant effects are uncertain or unknown at the screening stage an AA will be required, due to the need to apply the precautionary principle. Conversely, if a project will have impacts on a site, but these impacts will clearly not affect or undermine those conservation objectives, it is not considered that it will have a significant effect on the site concerned.

3.5. The aim of Stage 2, 'Natura Impact Statement' is to inform the assessment of the impacts of the Proposed Development on the integrity of the Natura 2000 site, considering the

[4] European Commission (2021) *Assessment of plans and projects in relation to Natura 2000 sites, Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats directive 92/43/EEC*. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021XC1028%2802%29

[5] Managing Natura 2000 Sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC (European Commission, 2018)

conservation objectives of the site and its ecological structure and function. This is done by considering the type of development and the conservation objectives of any Natura 2000 sites which may be impacted. The NIS will assess connectivity between the development and the Natura 2000 sites and their qualifying interests.

3.6. In addition, s177(T)1(b) and (2) of the Planning and Development Act 2000 (as amended) sets out the requirements for an NIS and states:

"s177(T) (1)(b) A Natura impact statement means a statement, for the purposes of Article 6 of the Habitats Directive, of the implications of a Proposed Development, on its own or in combination with other plans or projects, for one or more than one F722 [European site], in view of the conservation objectives of the site or sites.

(2) Without prejudice to the generality of subsection (1), a Natura impact report or a Natura impact statement, as the case may be, shall include a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications for one or more than one F722 [European site] in view of the conservation objectives of the site or sites."

Mitigation

3.7. The European Commission (EC 2001) states that mitigation should not be considered during the AA (i.e. Stage 1) Screening stage. On 12th April 2018, the Courts of Justice of the EU (CJEU) ruled in case C-323/17 (*People over Wind v Coillte*) that measures intended to avoid or reduce a proposed plan or project's harmful effects on a European site ('mitigation measures') cannot be considered during the Screening for AA stage.

3.8. Therefore, unless it can be shown that the proposed plan or project would not have a significant effect on the conservation objectives of the relevant European site in the absence of mitigation, it is necessary to carry out a Stage 2 AA. Mitigation measures should be considered at Stage 2, when a 'full and precise analysis' can be carried out. This is contrary to the previous guidance whereby inherent mitigation at the screening stage could be considered.

The Precautionary Principal

3.9. The Precautionary Principle, is referenced in Article 191 of the Treaty on the Functioning of the EU, is 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.

3.10. The reasoned employment of the 'Precautionary Principle' is fundamental to every AA.

4. ASSESSMENT METHODOLOGY

Stages of Appropriate Assessment

4.1. The Appropriate Assessment process comprises of four stages in order to identify whether proposals have the potential to significantly impact upon European Designated sites. The stages are as follows:

- Stage 1 Screening: To determine the likelihood of significant impacts.
- Stage 2 Natura Impact Statement: To assess the impact of proposals on the integrity of the European Designated site, considering the conservation objectives of the site and its ecological structure and function.
- Stage 3 Assessment of alternatives: Where significant impacts are anticipated despite mitigation measures, the proposal should progress to Stage 3 and consider alternatives or no longer proceed.
- Stage 4 Assessment where no alternative exists and where adverse impacts remain: The final stage involves examining whether there are imperative reasons of overriding public interest for allowing the proposal to adversely impact upon a European Designated site.

Source – Pathway - Receptor Model

4.2. The 'source-pathway-receptor' conceptual model is a tool used for environmental assessment. In order for an effect to occur, all elements of this model must be linked. The removal or absence of one of the elements of the model results in there being no likelihood for the effect in question to occur. For example:

- Source(s), e.g., blasting;
- Pathway(s) e.g., vibration and noise; and,
- Receptor(s) e.g., disturbance of nesting birds.

4.3. For an NIS, this model is focused solely on the selection features of European Designated sites as defined by National Parks and Wildlife Services (NPWS) and referenced within this report.

4.4. The Proposed Development may have the potential to result in a number of impacts, which could potentially affect the selection features of Natura 2000 sites. The analysis of these effects, using scientific knowledge and professional judgement, leads to the

identification of a "zone of influence" for each effect (i.e., the distance at which the impact of the Proposed Development could have potential effects, using professional judgement and published guidance).

Study Zone Identification

4.5. The 'Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities'[6] states that the NIS should include the following:

- *"Any Natura 2000 sites within or adjacent to the plan or project area.*
- *Any Natura 2000 sites within the likely zone of impact of the plan or project.*
- *A distance of 15km is currently recommended in the case of plans, and derives from UK guidance (Scott Wilson et. al., 2006). For projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects. In some instances, connectivity may go beyond 15k and will also need to be considered.*
- *Natura 2000 sites that are more than 15km from the plan or project area depending on the likely impacts of the plan or project, and the sensitivities of the ecological receptors, bearing in mind the precautionary principle. In the case of sites with water dependent habitats or species, and a plan or project that could affect water quality or quantity, for example, it may be necessary to consider the full extent of the upstream and/or downstream catchment."*

4.6. It is considered that the ZOI for the European Designated sites and their qualifying features will fall within a 15km radius of developments. However, this distance is a guidance only and a zone of influence of a Proposed Development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on a European site, having regard to its Qualifying Interests and Site Conservation Objectives. In accordance with the OPR Practice Note, PN01, the ZoI should be established on a case-by-case basis using the Source- Pathway Receptor framework and not by arbitrary distances (such as 15km).

4.7. The Zone of Influence may be determined by considering the Proposed Development's potential connectivity with European sites, in terms of:

[6] Department for Environment, Heritage and Local Government (2009) Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities. Available at: http://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

- Nature, scale, timing and duration of works and possible impacts, nature and size of excavations, storage of materials, flat/sloping sites;
- Distance and nature of pathways (dilution and dispersion; intervening 'buffer' lands, roads etc.); and
- Sensitivity and location of ecological features.

4.8. Sites further than 15km from the Proposed Development Site with a hydrological connection have been considered. These sites are not considered to fall with ZOI, for reasons outlined below.

4.9. The potential for source pathway receptor connectivity is firstly identified through GIS interrogation and detailed information is then provided on sites with connectivity. European sites that are located within a potential Zone of Influence of the Proposed Development Site are listed in **Table 5-1** below and presented in **Figure 1** (Appendix A). Spatial boundary data on the European Designated sites network were extracted from the NPWS website (www.npws.ie). This data was interrogated using GIS analysis to provide mapping, distances, locations and pathways to all sites of conservation concern including European sites.

Desk Study

4.10. Sources of material that were consulted as part of the desk study for the purposes of the assessment are as follows:

- National Parks & Wildlife Service ("NPWS") natural heritage database for European Designated sites within the 15km ZoI of the Proposed Development Site[7];
- NPWS site synopses, European Designated Site Data Form and conservation objectives relating to each site and aerial images;
- Environmental Protection Agency ("EPA") Ireland Mapping software and aerial images[8].

Impact Assessment Process

4.11. The assessment process involves:

[7] Environment, Heritage and Local Government (2009) Appropriate Assessment of Plan and Projects in Ireland. Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

[8] Environmental Protection Agency Ireland Maps. Available at: https://gis.epa.ie/EPAMaps/

- Identifying and characterising European Designated sites assessing whether any of these designated sites have any connectivity with the Proposed Development SIte. If any site is found to have no connectivity, then these designated sites will be 'scoped out' or not considered further;
- Using the Source-Pathway-Receptor model, assess whether there will be any significant impacts to any of the European Designated site, in regard to changes that result from the construction and operation phases of a project. Qualifying features of a European Designated site that lie outside of the ZoI and not subject to any impacts from the Proposed Development then these will be 'scoped out' or not considered further;
- Identify any significant impacts on the integrity of the European Designated site from the development and 'in combination' with any other plans and projects within 5km;
- Identify the need for the Appropriate Assessment process to move to Stage 3: 'Assessment of alternatives' or, if there are no impacts from the development, the competent authority may allow the development to proceed, subject to other requirements being satisfied.

5. STAGE 1: APPROPRIATE ASSESSMENT SCREENING

5.1. In accordance with National Parks & Wildlife Service ("NPWS") guidance[9], all European Designated sites located within 15km of the Proposed Development Site (see **Figure 1, Appendix A**) have been identified. In addition, where relevant, potentially connected European Designated Sites outside of the 15km have been identified and detailed within **Figure 1, Appendix A.**

5.2. The potential impacts associated with the Proposed Development have been identified and assessed to determine if there is potential for the Proposed Development to affect the integrity of a designated site. This has been done by considering the conservation objectives of European Designated sites and their ecological structure and function. Those European Designated sites which will not be significantly impacted upon (due to lack of connectivity) will be ruled out of any further assessment.

5.3. These impacts can depend more on the nature of impacts, sensitivity of receptors and causal linkage, rather than actual distances. The assessment below considers connectivity, either ecological, ornithological or hydrological, that may exist between the Proposed Development Site and the designated sites.

Identification of Statutorily Designated Sites

5.4. The Proposed Development Site is not located within any European Designated site. The designated features of each of the above sites have been outlined within **Table 5-1** below. **Appendix A** of this report (**Figure 1 – European Designated Sites**) details the location of these sites in relation to the Proposed Development Site.

Table 5-1: Statutorily Designated sites within 15km

Site Code	Site Name	Qualifying Features	Shortest linear Distance (km), Direction	Potential Connectivity with the Proposed Development Site
000571	Charleville Wood SAC	*Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion*	2.70km southwest	Hydrological

[9] Environment, Heritage and Local Government (2009) Appropriate Assessment of Plan and Projects in Ireland. Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

		incanae, Salicion albae) [91E0] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]		
000582	Raheenmore Bog SAC	Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the *Rhynchosporion* [7150]	5.16km northeast	None
001831	Split Hills and Long Hill Esker SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210]	7.14km north	None
000572	Clara Bog SAC	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) [6210] Active raised bogs [7110] Degraded raised bogs still capable of natural regeneration [7120] Depressions on peat substrates of the *Rhynchosporion* [7150] Bog woodland [91D0]	8.12km northwest	None

002162	River Barrow and River Nore SAC	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Reefs [1170] Salicornia and other annuals colonising mud and sand [1310] Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330] Mediterranean salt meadows *(Juncetalia maritimi)* [1410] Water courses of plain to montane levels with the *Ranunculion fluitantis and Callitricho-Batrachion* vegetation [3260] European dry heaths [4030] Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430] Petrifying springs with tufa formation (*Cratoneurion)* [7220] Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] *Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* [91E0] *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]	12.22km south	Ecological

		Margaritifera margaritifera (Freshwater Pearl Mussel) [1029] *Austropotamobius pallipes* (White-clawed Crayfish) [1092] *Petromyzon marinus* (Sea Lamprey) [1095] *Lampetra planeri* (Brook Lamprey) [1096] *Lampetra fluviatilis* (River Lamprey) [1099] *Alosa fallax fallax* (Twaite Shad) [1103] *Salmo salar* (Salmon) [1106] *Lutra lutra* (Otter) [1355] *Trichomanes speciosum* (Killarney Fern) [1421]		
000685	Lough Ennel SAC	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. [3140] Alkaline fens [230]	14.17km north	None
Ramsar sites				
3IE019	Clara Bog Ramsar site	See qualifying features of the Clara Bog SAC	8.12km northwest	None
3IE002	Raheenmore Bog Ramsar site	See qualifying features of the the Raheenmore Bog SAC	5.16km northeast	None

5.5. As shown in **Table 5-1**, the Proposed Development Site is not located within or directly adjacent to any European Designated site.

5.6. The Proposed Development Site is hydrologically connected to Charleville Wood SAC. There is a shared hydrological pathway linking elements of the Proposed Development (grid connection, substation, interconnection cables and HDD) to the Charleville Wood SAC. Ballyteige Little, a stream that runs parallel with the west and north facing flanks of the substation boundary area flows into the Corndarragh Stream, a tributary of the Tullamore River. This river continues to flow eventually through Charleville Wood SAC.

The hydrological pathway leading from the grid connection begins with the Corndarragh stream that flows underneath the Kilmurry road in a southward direction where it flows into the Tullamore River where it flows through the Charleville Wood SAC. As such the Charleville Wood SAC will be considered further for **hydrological connectivity** with the Proposed Development Site.

5.7. The Proposed Development Site is not hydrologically connected to the River Barrow and River Nore SAC as the SAC lies within a separate river catchment therefore qualifying features that are aquatic in nature have been scoped out for any significant impact and do not require further assessment. Ecological connectivity has been assessed with specific focus given to the semi -aquatic mobile species, otter. It is important to note that when assessing otter for connectivity the SAC is at a higher elevation, streams traversing the Proposed Development Site flow west towards Tullamore and lie within a separate river catchment to the River Barrow. Habitats within the Proposed Substation Site boundary provide limited ecological value in the form of commuting and foraging habitat. The remaining terrestrial qualifying features (habitats) have also been assessed, no pathway for connectivity exists. It is considered that there is ecological connectivity between the SAC and the Proposed Substation Site due to the qualifying mobile species, otter. As such the River Barrow and River Nore SAC will be considered further for **ecological connectivity** with the Proposed Substation Site.

5.8. Clara Bog SAC, Split Hills and Long Hill Esker SAC and Raheenmore Bog SAC are all located upstream of the Proposed Development Site, therefore there is no hydrological pathway for the development to impact upon these SACs. Each of these sites are not designated for mobile species and therefore, there is no pathway for ecological connectivity. Therefore, there is no pathway for impacts. As a result, **these SACs have been scoped out and have not been assessed any further within this report.**

5.9. Lough Ennel SAC just falls within the 15km study area. There is no hydrological or ecological pathway that connect this SAC to the Proposed Development Site. Therefore, there is no pathway for impacts. As a result, **this SAC has been scoped out and has not been assessed any further within this report.**

5.10. This AA Screening Assessment has concluded that, **in the absence of mitigation**, **there is potential for the Proposed Development to have significant impacts** on the Charleville Wood SAC due to hydrological connectivity. In addition, **in the absence of mitigation, there is potential for the Proposed Development to have significant impacts** on the River Barrow and River Nore SAC due to ecological connectivity. Therefore, further assessment is required to assess potential impacts on the integrity of this European designated site.

5.11. As both the Ramsar sites in **Table 5-1** overlap SACs, conclusive statements regarding connectivity between the SACs and the Proposed Substation Site apply to each associated Ramsar site. No hydrological or ecological connectivity exists between the Proposed Substation Site and the Clare Bog SAC and Raheenmore Bog SAC, therefore associated

Ramsar sites have been scoped outed and have not been assessed any further within this report.

6. STAGE 2: NATURA IMPACT STATEMENT

6.1. This Section discusses and evaluates the likely impacts of the Proposed Development affecting the European Designated sites which are within the Zone of Influence ("ZoI") of the Proposed Substation Site (i.e. there is some connection between the Proposed Substation Site and the European Designated site).

6.2. Two sites have been brought forward for further assessment due to connectivity with the Proposed Development Site. These are the River Barrow and River Nore SAC due to potential for ecological connectivity, and the Charlesville Wood SAC for potential for hydrological connectivity.

6.3. The Charleville Wood SAC has been brought forward for further assessment due to hydrological connectivity with the Proposed Development Site, which may require mitigation.

6.4. Potential impacts for ecological features associated with a European Designated site from the construction and operation of the Proposed Development may occur from the contamination of surface and/or ground waters. Those features (species) which are ecologically connected to the Proposed Development Site, and are mobile, may be impacted through disturbance as well as loss of habitat through contamination of surface waters.

6.5. Aquatic systems and the species/habitats which are dependent on these systems are sensitive to pollution/contamination of surface waters. Pollution can result from any of the following entering a body of surface or groundwater:

- Poisonous, noxious or polluting matter;
- Waste matter (including silt, cement, concrete, oil, petroleum spirit, chemicals, solvents, sewage and other polluting matter);
- Other harmful activities detrimentally affecting the status of a waterbody.

6.6. The status of a waterbody can be affected not only by chemical pollution, but also by activities directly or indirectly affecting ecology, including changes in physio-chemical parameters such as temperature and turbidity or physical modification to the hydrology of a waterbody.

6.7. Table 6-1 below details common water pollutants and their effect on the aquatic environment (*Table extracted from Ciria guidance*[10]).

[10] Ciria (2015) Environmental good practice on site guide, fourth edition

Table 6-1: Common water pollutants and their effects on the aquatic environment

Potential polluting activity within {Proposed Development Site	Common Water Pollutants	Adverse effect on aquatic environment
Landworks involving top soil removal and excavation	Silt.	Reduces water quality, clogs fish gills, covers aquatic plants, impacts aquatic invertebrates, leads to a reduction in prey for species and leads to degradation of habitat.
Landworks involving top soil removal and excavation	Bentonite (very fine silt)	Reduces water quality, clogs fish gills, covers aquatic plants, impacts aquatic invertebrates, leads to a reduction in prey for species and leads to degradation of habitat
Construction & operational activities	Cement or concrete wash water (highly alkaline)	Changes the chemical balance, is toxic to fish and other wildlife. This can lead to direct impacts for aquatic species (including otter), or indirect through loss of prey resources
Cleaning including wheel washing and boot washing stations. Cleaning of construction vehicles	Detergent	Removed dissolved oxygen, can be toxic to fish and other wildlife present within the aquatic environment
Oil and fuel leaks from construction vehicles and refuelling stations.	Hydrocarbons (e.g. oil, diesel)	Suffocates aquatic life, damaging to the wildlife (e.g. birds), and to water supplies including industrial abstractions
Leaks from restroom facilities	Sewage	Reduces water quality, is toxic to aquatic wildlife, and damages water supplies

6.8. Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Proposed Development. This is to ensure compliance with planning conditions and environmental regulations.

6.9. The Site Manager is responsible for ensuring that all monitoring is carried out according to the Environmental Monitoring Programme, summarised in Table 6-2.

Table 6-2: Environmental Monitoring

Environmental Aspect	Monitoring Location	Monitoring Frequency	Monitoring Arrangements
Site housekeeping	Entire site	Daily	Visual inspection
Surface water courses	All water courses	After periods of rain Weekly, if no rain	Visual inspection
Fuels and chemicals – appropriate storage	Entire site	Daily	Visual inspection

6.10. These records and results will be maintained by the Site Manager and will be stored on site during the construction phase.

Charleville Wood SAC

6.11. Charleville Wood SAC is designated for its importance for the following Annex I habitats and Annex II species:

- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) [91E0]
- *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]

Conservation Objectives for Charleville Wood SAC[11]

6.12. The main conservation objectives of the SAC are "to restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* in Charleville Wood SAC."

6.13. This objective is defined by the following list of attributes and targets:

- Habitat Area - Area stable or increasing, subject to natural processes.

[11] NPWS (2021) Conservation objectives for Charleville Wood SAC [000571]. Version 1. Department of Culture, Heritage and the Gaeltacht.

- Occurrence - No decline, subject to natural processes.
- Woodland size - Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size.
- Woodland structure: cover and height - Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%.
- Woodland structure: community diversity and extent - Maintain diversity and extent of community types.
- Woodland structure: natural regeneration - Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy.
- Hydrological regime: flooding depth/height of water table - Appropriate hydrological regime necessary for maintenance of alluvial vegetation.
- Woodland structure: dead wood - At least 19 stems/ha of dead wood of at least 20cm diameter.
- Woodland structure: veteran trees – No decline.
- Woodland structure: indicators of local distinctiveness - No decline in distribution and, in the case of red listed and other rare or localised species, population size.
- Woodland structure: indicators of overgrazing - All five indicators of overgrazing absent.
- Vegetation composition: native tree cover - No decline. Native tree cover at least 90% of canopy; target species cover at least 50% of canopy.
- Vegetation composition: typical species - At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present.
- Vegetation composition: negative indicator species - Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent.
- Vegetation composition: problematic native species - Cover of common nettle (Urtica dioica) less than 75%.

6.14. The second conservation objective for this SAC is "maintain the favourable conservation condition of Desmoulin's Whorl Snail (*Vertigo moulinsiana*) in Charleville Wood SAC"

6.15. This objective is defined by the following list of attributes and targets:

- Distribution - No decline, subject to natural processes. There is one known site for this species in the SAC within N3122.
- Occurrence in suitable habitat - No decline, subject to natural processes. A baseline figure of 50% positive samples is set.
- Density within habitat - No decline, subject to natural processes; at least 67% of samples should have more than 20 individuals.
- Habitat area - Area of suitable habitat stable or increasing, subject to natural processes; no less than 5ha of at least sub-optimal habitat.
- Tree canopy extent - Tree canopy cover around lake stable at current levels, subject to natural processes.
- Habitat quality: water levels - Maintain at current levels, subject to natural processes.

Character of the Qualifying Interests of the Charleville Wood SAC

Table 6-3: Qualifying Habitats of the Charleville Wood SAC and their extent within the site

Code	Qualifying Habitats	Extent and Character (%)
N06	Inland water bodies (Standing water, Running water)	7
N14	Improved grassland	3
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	1
N07	Bogs, Marshes, Water fringed vegetation, Fens	7
N16	Broad-leaved deciduous woodland	79
N20	Artificial forest monoculture (e.g. Plantations of poplar or Exotic trees)	3
Total Habitat Cover		100

Threats and Pressures on the Charleville Wood SAC

6.16. Table 6-4 lists the threats, pressures and activities impacting Charleville Wood SAC.

Table 6-4: Threats, pressures and activities impacting Charleville Wood SAC

Code	Threats and Pressures	Rank	+/-	Inside/Outside
G02.09	Wildlife watching	L	-	I
G01.02	Walking, horseriding and non-motorised vehicles	H	-	B
G01	Outdoor sports and leisure activities, recreational activities	H	-	B
F03.02.03	Trapping, poisoning, poaching	H	-	I
F04	Taking / Removal of terrestrial plants, general	L	-	I
F05.04	Poaching	L	-	I
F03.02.04	Predator control	H	+	I
B02	Forest and Plantation management & use	H	+	I
F03.02.04	Predator control	H	+	O

(Rank: H = High, M = Medium, L = Low, I = inside, O = outside, B = both &+/- = Positive/Negative Impact)

Assessment of Likely Impacts Affecting the Charleville Wood SAC

6.17. Charleville Wood is a large area of ancient woodland. The qualifying habitat of the SAC, Alluvial forests, are not present within the Proposed Development Site. Desmoulin's Whorl Snail are restricted to wetlands (usually bordering lakes and river, or in fens). Suitable habitat for supporting this species are not found within the Proposed Development Site.

6.18. The Proposed Development has a direct hydrological pathway to Charleville Wood SAC via the grid connection and substation elements of the Proposed Development. Ballyteige Little, a stream that runs parallel with the west and north facing flanks of the substation boundary flows into the Corndarragh Stream, a tributary of the Tullamore River. The hydrological pathway leading from the grid connection begins with the Corndarragh stream that flows underneath the Kilmurry road in a southward direction where it flows into the Tullamore River. The Tullamore then flows through Charleville Wood SAC. As a

result, it is considered that there is potential for the occurrence of contaminates outlined within Table 6-1 above to enter the SAC.

6.19. Potential contaminates are capable of undermining water quality and therefore the conservation objectives of each qualifying habitats within the SAC that is located downstream.

6.20. No works will occur within or directly adjacent to waterways. Protection buffers of 10m along OPW watercourse have been incorporated into the design of the Proposed Development. Other Adopted Design Principles included within the Proposed Substation site include SuDS and the use of silt traps within the ditches, which will minimise any effects from pollution. Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Proposed Substation site by the Site Manager as outlined in Table 6-2 above.

6.21. The potential occurrence of contaminates outlined within Table 6-1 above and their capability of affecting water quality have been considered during the various phases of the Proposed Development.

6.22. Measures have been included within the Proposed Substation sit Design to prevent pollution entering the aquatic environment. These are outlined below:

- Silt/Bentonite
    - During the construction phase, ground disturbance is limited to the Proposed Substation Site. As part of the Proposed Development design, Sustainable Drainage Systems (SuDS) will be implemented to control surface water movement and prevent silt/bentonite entering the aquatic environment. These have been incorporated into the design of the Proposed Development and are required due to relevant regional drainage policies in light of the objectives of the Water Framework Directive and associated water quality Directives and Regulations.
    - This includes the use of silt traps at drainage ditches throughout the site.
- Cement or concrete wash water
    - Best practice pollution prevention measures will be followed during the use of these materials during the construction phase, which will ensure cement/concrete wash water does not enter the aquatic environment.
    - This includes no use of wet concrete within 20m of the drainage ditch within the site.
- Detergent
    - This material will not be used within the Proposed Development Site.

- Hydrocarbons (e.g. oil, diesel)
    - During the construction phase, all work will be undertaken following best practice pollution prevention measures, which include suitable storage of oil/fuels and correct refuelling processes. This will prevent hydrocarbons entering the aquatic system.
- Sewage

6.23. The only potential sewage produced within the Proposed Substation Site will be from the welfare facilities provided for staff during the construction phase. These facilities shall include an appropriate storage facility for sewage, which shall be collected regularly by a licensed waste contractor. Therefore, sewage will not enter the local environment, including aquatic habitats.

6.24. An **Outline Construction Environmental Management Plan (OCEMP)** has been produced in support of this application (please see **Technical Appendix 8**), and this report outlines design and best practice measures for protecting the local environment, including terrestrial and aquatic habitats.

6.25. It is considered that due to the adopted design principles, best practice and mitigation measures the Proposed Development **will not result in significant adverse effects** for the Annex 1 Habitats of the SAC. Ecological constraints relating to the above-named watercourses were considered during the design of the Proposed Development, as a result changes were made to reduce proximity to said watercourses (Ballyteige little connected to the western point of the substation and the Corndarragh stream that flows underneath the Killmurry road) to further reduce any potential for contamination to occur.

6.26. Further details on mitigation measures proposed for the drainage arrangements and waste management during the construction phase of the development are outlined below in **Section 7**.

6.27. With the implementation of best practice pollution prevention measures, integral design measures and proposed mitigation measures, it is considered any effects on the ecological receptors of the SAC would be **negligible,** and there is **no significant risk of hydrological contamination** on any of the Annex 1 habitats of the Charleville Wood SAC.

6.28. With the implementation of best practice, design measures and mitigation, the Proposed Development **will not result in significant adverse effects** to the integrity of the Charleville Wood SAC.

River Barrow and River Nore SAC

6.29. River Barrow and River Nore SAC is designated for its importance for the following Annex I habitats and Annex II species:

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]
- Reefs [1170]
- Salicornia and other annuals colonising mud and sand [1310]
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) [1330]
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]
- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation [3260]
- European dry heaths [4030]
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]
- Petrifying springs with tufa formation (*Cratoneurion*) [7220]
- Old sessile oak woods with *Ilex and Blechnum* in the British Isles [91A0]
- Alluvial forests with *Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)* [91E0]
- *Vertigo moulinsiana* (Desmoulin's Whorl Snail) [1016]
- *Margaritifera margaritifera* (Freshwater Pearl Mussel) [1029]
- *Austropotamobius pallipes* (White-clawed Crayfish) [1092]
- *Petromyzon marinus* (Sea Lamprey) [1095]
- *Lampetra planeri* (Brook Lamprey) [1096]
- *Lampetra fluviatilis* (River Lamprey) [1099]
- *Alosa fallax fallax* (Twaite Shad) [1103]
- *Salmo salar* (Salmon) [1106]
- *Lutra lutra* (Otter) [1355]
- *Trichomanes speciosum* (Killarney Fern) [1421]

- *Margaritifera durrovensis* (Nore Pearl Mussel) [1990]

Conservation Objectives for River Barrow and River Nore SAC[12]

6.30. The main conservation objectives of the SAC are to "to maintain the favourable conservation condition of Estuaries in the River Barrow and River Nore SAC."

6.31. This objective is defined by the following list of attributes and targets:

- Habitat Area - The permanent habitat area is stable or increasing, subject to natural processes.
- Community distribution - community types in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex; Fine sand with Fabulina fabula community; Sheltered to moderately exposed intertidal reef community complex.
- Community structure: extent - Conserve the extent of Sabellaria alveolata reef community, subject to natural processes.
- Community structure: quality - Conserve the high quality of the Sabellaria alveolata reef community, subject to natural processes.

6.32. "To maintain the Favourable conservation condition of the Mudflats and sandflats not covered by seawater at low tide in the River Barrow and River Nore SAC"

6.33. This objective is defined by the following list of attributes and targets:

- Habitat area - The permanent habitat area is stable or increasing, subject to natural processes.
- Community distribution - Conserve the following community types in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex.

6.34. "To maintain the Favourable conservation condition of Reefs in River Barrow and River Nore SAC"

6.35. This objective is defined by the following list of attributes and targets:

- Habitat area - The permanent area is stable or increasing, subject to natural processes.

[12] NPWS (2025) Conservation objectives for River Barrow and River Nore SAC [002162]. Version 2. Department of Culture, Heritage and the Gaeltacht.

- Distribution - The distribution of reefs is stable or increasing, subject to natural processes.
- Community extent - Conserve the following community type in a natural condition: Sheltered to moderately exposed intertidal reef community complex in a natural condition, subject to natural processes.
- Community structure: extent - Conserve the extent of Sabellaria alveolata reef community, subject to natural processes.
- Community structure: quality - Conserve the high quality of the Sabellaria alveolata reef community, subject to natural processes.

6.36. "To maintain the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in the River Barrow and River Nore SAC"

6.37. This objective is defined by the following list of attributes and targets:

- Habitat area - Area stable or increasing, subject to natural processes, including erosion and succession. For the one sub-site mapped: Ringville - 0.03ha.
- Habitat distribution - No decline, subject to natural processes.
- Physical structure: sediment supply - Maintain or where necessary restore natural circulation of sediments and organic matter, without any physical obstructions.
- Physical structure: flooding regime - Maintain natural tidal regime.
- Physical structure: creeks and pans - Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession.
- Vegetation structure: zonation - Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession.
- Vegetation structure: vegetation height - Maintain structural variation within sward.
- Vegetation structure: vegetation cover - Maintain more than 90% of area outside creeks vegetated.
- Vegetation composition: typical species and subcommunities - Maintain range of subcommunities with typical species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009).

- Vegetation structure: negative indicator species: Spartina anglica - No significant expansion of Spartina. No new sites for this species and an annual spread of less than 1% where it is already known to occur.

6.38. "To restore the Favourable conservation condition of Atlantic salt meadows in the River Barrow and River Nore SAC"

6.39. This objective is defined by the following list of attributes and targets:

- Habitat Area - Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Dunbrody Abbey - 1.25ha, Killowen - 2.59ha, Rochestown - 17.50ha, Ringville - 6.70ha.
- Habitat distribution - No decline, subject to natural processes.
- Physical structure: sediment supply - Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions.
- Physical structure: flooding regime - Maintain natural tidal regime.
- Physical structure: creeks and pans - Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession.
- Vegetation structure: zonation - Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession.
- Vegetation structure: vegetation height - Maintain structural variation within sward.
- Vegetation structure: vegetation cover - Maintain more than 90% of area outside creeks vegetated.
- Vegetation composition: typical species and subcommunities - Maintain range of subcommunities with typical species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009).
- Vegetation structure: negative indicator species: Spartina anglica - No significant expansion of Spartina. No new sites for this species and an annual spread of less than 1% where it is already known to occur.

6.40. "To restore the favourable conservation condition of Mediterranean salt meadows in the River Barrow and River Nore SAC."

6.41. This objective is defined by the following list of attributes and targets:

- Habitat area - Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Dunbrody Abbey - 0.08ha, Rochestown - 0.04ha, Ringville - 6.70ha.
- Habitat distribution - No decline, subject to natural processes.
- Physical structure: sediment supply - Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions.
- Physical structure: flooding regime - Maintain natural tidal regime.
- Physical structure: creeks and pans - Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession.
- Vegetation structure: zonation - Maintain range of saltmarsh habitat zonations including transitional zones, subject to natural processes including erosion and succession.
- Vegetation structure: vegetation height - Maintain structural variation within sward.
- Vegetation structure: vegetation cover - Maintain more than 90% of area outside creeks vegetated.
- Vegetation composition: typical species and subcommunities - Maintain range of subcommunities with typical species listed in Saltmarsh Monitoring Project (McCorry & Ryle, 2009).
- Vegetation structure: negative indicator species: Spartina anglica - No significant expansion of Spartina. No new sites for this species and an annual spread of less than 1% where it is already known to occur.

6.42. "To maintain the Favourable conservation condition of Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation in the River Barrow and River Nore SAC."

6.43. This objective is defined by the following list of attributes and targets:

- Habitat area - The permanent area is stable or increasing, subject to natural processes.
- Distribution - The distribution of reefs is stable or increasing, subject to natural processes.
- Hydrological regime: river flow - Maintain appropriate hydrological regimes.

- Hydrological regime: groundwater discharge - The groundwater flow to the habitat should be permanent and sufficient to maintain tufa formation.
- Substratum composition: particle size range - The substratum should be dominated by large particles and free from fine sediments.
- Water chemistry: minerals - The groundwater and surface water should have sufficient concentrations of minerals to allow deposition and persistence of tufa deposits.
- Water quality: suspended sediment - The concentration of suspended solids in the water column should be sufficiently low to prevent excessive deposition of fine sediments.
- Water quality: nutrients - The concentration of nutrients in the water column should be sufficiently low to prevent changes in species composition or habitat condition.
- Vegetation composition: typical species - Typical species of the relevant habitat sub-type should be present and in good condition.
- Floodplain connectivity - The area of active floodplain at and upstream of the habitat should be maintained.

6.44. "To maintain the favourable conservation condition of European dry heaths in the River Barrow and River Nore SAC"

6.45. This objective is defined by the following list of attributes and targets:

- Habitat distribution - No decline from current habitat distribution, subject to natural processes.
- Habitat area - Area stable or increasing, subject to natural processes.
- Physical structure - No significant change in soil nutrient status; no increase or decrease in area of natural rock outcrop.
- Vegetation structure - Cover of characteristic sub-shrub indicator species at least 25% (e.g. gorse, bilberry, woodrush).
- Vegetation structure - Cover of senescent gorse less than 50%.
- Vegetation structure - Long shoots of bilberry showing browsing collectively less than 33%.
- Vegetation structure - Cover of scattered native trees and shrubs less than 20%.

- Vegetation composition - At least two positive indicator species present (e.g. gorse and associated dry heath/acid grassland flora).
- Vegetation structure: positive indicator species - – Cover of positive indicator species at least 60%, including characteristic dry heath species such as gorse, bilberry and associated acid grassland flora.
- Vegetation composition: bryophyte and non-crustose lichen species - At least 2 bryophyte or non-crustose lichen species present.
- Vegetation composition: bracken - Cover of bracken less than 10%.
- Vegetation structure: weedy negative indicator species - Cover of agricultural weed species less than 1%.
- Vegetation composition: non-native species - Cover of non-native species less than 1%.
- Vegetation composition: rare/scarce heath species - No decline in distribution or population size of rare, threatened or scarce species (e.g. Greater Broomrape, Clustered Clover).
- Vegetation structure: disturbed bare ground - Cover of disturbed bare ground less than 10% (or <5% on peat soils).
- Vegetation structure: burning - No signs of burning within sensitive areas.

6.46. "To maintain the favourable conservation condition of Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels in the River Barrow and River Nore SAC"

6.47. This objective is defined by the following list of attributes and targets:

- Habitat distribution - No decline, subject to natural processes.
- Habitat area - Area stable or increasing, subject to natural processes.
- Hydrological regime: flooding depth/height of water table - Maintain appropriate hydrological regimes.
- Vegetation structure: sward height - 30-70% of sward is between 40 and 150cm in height.
- Vegetation composition: broadleaf herb: grass ratio – Broadleaf herb component of vegetation between 40 and 90%.

- Vegetation composition: typical species - At least 5 positive indicator species present.
- Vegetation composition: negative indicator species - Negative indicator species, particularly non-native invasive species, absent or under control- NB Indian balsam (Impatiens glandulifera), monkeyflower (Mimulus guttatus), Japanese knotweed (Fallopia japonica) and giant hogweed (Heracleum mantegazzianum).

6.48. "To maintain the Favourable conservation condition of Petrifying springs with tufa formation (Cratoneurion) in the River Barrow and River Nore SAC"

6.49. This objective is defined by the following list of attributes and targets:

- Habitat area - Area stable or increasing, subject to natural processes
- Habitat distribution - No decline.
- Hydrological regime: height of water table; water flow - Maintain appropriate hydrological regimes.
- Water quality - Maintain oligotrophic and calcareous conditions .
- Vegetation composition: typical species - Maintain typical species.

6.50. "To restore the favourable conservation condition of Old oak woodland with Ilex and Blechnum in the River Barrow and River Nore SAC"

6.51. This objective is defined by the following list of attributes and targets:

- Habitat Area - Area stable or increasing, subject to natural processes, at least 85.08ha for sub-sites surveyed.
- Habitat distribution – No decline.
- Woodland Size - Area stable of increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size.
- Woodland structure: cover and height - Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semimature trees and shrubs; and well-developed herb layer.
- Woodland structure: community diversity and extent - Maintain diversity and extent of community types.
- Woodland structure: natural regeneration - Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy.

- Woodland structure: dead wood - At least 30m³/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter.
- Woodland structure: veteran trees – No decline.
- Woodland structure: indicators of local distinctiveness – No decline.
- Vegetation composition: native tree cover - No decline. Native tree cover not less than 95%.
- Vegetation composition: typical species - A variety of typical native species present, depending on woodland type, including oak (Quercus petraea) and birch (Betula pubescens).
- Vegetation composition: negative indicator species - Negative indicator species, particularly non-native invasive species, absent or under control.

6.52. ” To restore the Favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in the River Barrow and River Nore SAC”

6.53. This objective is defined by the following list of attributes and targets:

- Habitat Area - Area stable or increasing, subject to natural processes, at least 181.54ha for sites surveyed.
- Habitat distribution – No decline.
- Woodland size - Area stable of increasing. Where topographically possible, "large" woods at least 25ha in size and “small” woods at least 3ha in size.
- Woodland structure: cover and height - Diverse structure with a relatively closed canopy containing mature trees; subcanopy layer with semimature trees and shrubs; and well-developed herb layer.
- Woodland structure: community diversity and extent - Maintain diversity and extent of community types.
- Woodland structure: natural regeneration - Seedlings, saplings and pole age-classes occur in adequate proportions to ensure survival of woodland canopy.
- Hydrological regime: flooding depth/height of water table - Appropriate hydrological regime necessary for maintenance of alluvial vegetation.

- Woodland structure: dead wood - At least 30m³/ha of fallen timber greater than 10cm diameter; 30 snags/ha; both categories should include stems greater than 40cm diameter (greater than 20cm diameter in the case of alder).
- Woodland structure: veteran trees – No decline.
- Woodland structure: indicators of local disctinctiveness – No decline.
- Vegetation composition: native tree cover - No decline. Native tree cover not less than 95%.
- Vegetation composition: typical species - A variety of typical native species present, depending on woodland type, including ash (Fraxinus excelsior) alder (Alnus glutinosa), willows (Salix spp) and locally, oak (Quercus robur).
- Vegetation composition: negative indicator species - Negative indicator species, particularly non-native invasive species, absent or under control.

6.54. ”To maintain the Favourable conservation condition of Desmoulin’s whorl snail in the River Barrow and River Nore SAC”

6.55. This objective is defined by the following list of attributes and targets:

- Distribution: occupied sites - No decline. Two known sites: Borris Bridge, Co. Carlow S711503; Boston Bridge, Kilnaseer S338774, Co. Laois.
- Population size: adults - At least 5 adults snails in at least 50% of samples.
- Population density - Adult snails present in at least 60% of samples per site.
- Area of occupancy - Minimum of 1ha of suitable habitat per site.
- Habitat quality: vegetation - 90% of samples in habitat classes I and II as defined in Moorkens & Killeen (2011).
- Habitat quality: soil moisture levels - 90% of samples in moisture class 3-4 as defined in Moorkens & Killeen (2011).

6.56. ”To restore the Favourable conservation condition of the Freshwater pearl mussel (Margaritifera margaritifera) in River Barrow and River Nore SAC”

6.57. This objective is defined by the following list of attributes and targets:

- Distribution: Ballymurphy – Restore distribution at 3.91km.
- Distribution: Mountain - Restore distribution at 9.45km.

- Distribution: Nore - Restore distribution at 21.13km.
- Population size: Ballymurphy - Restore Ballymurphy population to at least 1,000 adult mussels.
- Population size: Mountain - Restore Mountain population to at least 4,000 adult mussels.
- Population size: Nore - Restore Nore population to at least 5,000 adult mussels.
- Population structure: recruitment - Restore to at least 20% of population no more than 65mm in length; and at least 5% of population no more than 30mm in length.
- Population structure: adult mortality. Ballymurphy - No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution.
- Population structure: adult mortality. Mountain - No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution.
- Population structure: adult mortality. Nore - No more than 5% decline from previous number of live adults counted; dead shells less than 1% of the adult population and scattered in distribution.
- Suitable habitat: extent - Restore suitable habitat in more than 3.91km in the Ballymurphy, 5.3km in the Mountain and 16.72km in the Nore system (see map 8) and any additional stretches necessary for salmonid spawning.
- Suitable habitat: condition - Restore condition of suitable habitat.
- Water quality: macroinvertebrate s and phytobenthos (diatoms) - Restore water quality macroinvertebrates: EQR greater than 0.90 (Q4-5 or Q5); phytobenthos: EQR greater than 0.93.
- Substratum quality: filamentous algae (macroalgae); macrophytes (rooted higher plants) - Restore substratum quality- filamentous algae: absent or trace (less than 5%); macrophytes: absent or trace (less than 5%).
- Substratum quality: sediment - Restore substratum quality- stable cobble and gravel substrate with very little fine material; no artificially elevated levels of fine sediment.

- Substratum quality: oxygen availability - Restore to no more than 20% decline from water column to 5cm depth in substrate.
- Hydrological regime: flow variability - Restore appropriate hydrological regime.
- Host fish - Maintain sufficient juvenile salmonids to host glochidial larvae.
- Fringing habitat: area and condition - Restore the area and condition of fringing habitats necessary to support the population.

6.58. ”To maintain the Favourable conservation condition of White-clawed crayfish in the River Barrow and River Nore SAC”

6.59. This objective is defined by the following list of attributes and targets:

- Distribution - No reduction from baseline.
- Population structure: recruitment - Juveniles and/or females with eggs in at least 50% of positive samples.
- Negative indicator species - No alien crayfish species.
- Disease - No instances of disease.
- Water quality - At least Q3-4 at all sites sampled by EPA.
- Habitat quality: heterogeneity - No decline in heterogeneity or habitat quality.

6.60. ”To restore the Favourable conservation condition of Sea lamprey in the River Barrow and River Nore SAC”

6.61. This objective is defined by the following list of attributes and targets:

- Distribution: extent of anadromy - Greater than 75% of main stem length of rivers accessible from estuary.
- Population structure of juveniles - At least three age/size groups present.
- Juvenile density in fine sediment - Juvenile density at least 1/m^2.
- Extent and distribution of spawning habitat - No decline in extent and distribution of spawning beds.
- Availability of juvenile habitat - More than 50% of sample sites positive.

6.62. ”To restore the favourable conservation condition of Brook lamprey in the River Barrow and River Nore SAC”

6.63. This objective is defined by the following list of attributes and targets:

- Distribution - Access to all watercourses down to first order streams.
- Population structure of juveniles - At least three age/size groups present.
- Juvenile density in fine sediment - Juvenile density at least 2/m².
- Extent and distribution of spawning habitat - No decline in extent and distribution of spawning beds.
- Availability of juvenile habitat - More than 50% of sample sites positive.

6.64. ”To restore the Favourable conservation condition of River lamprey in the River Barrow and River Nore SAC”

6.65. This objective is defined by the following list of attributes and targets:

- Distribution: extent of anadromy - Greater than 75% of main stem length of rivers accessible from estuary.
- Population structure of juveniles - At least three age/size groups present.
- Juvenile density in fine sediment - Juvenile density at least 2/m².
- Extent and distribution of spawning habitat - No decline in extent and distribution of spawning beds.
- Availability of juvenile habitat - More than 50% of sample sites positive.

6.66. ”To restore the favourable conservation condition of Twaite shad in the River Barrow and River Nore SAC,”

6.67. This objective is defined by the following list of attributes and targets:

- Distribution: extent of anadromy - Greater than 75% of main stem length of rivers accessible from estuary.
- Population structure: age classes - More than one age class present.
- Extent and distribution of spawning habitat - No decline in extent and distribution of spawning habitats.
- Water quality: oxygen levels - No lower than 5mg/l.

- Spawning habitat quality: Filamentous algae; macrophytes; sediment - Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plants) growth.

6.68. ”To restore the favourable conservation condition of Salmon in the River Barrow and River Nore SAC”

6.69. This objective is defined by the following list of attributes and targets:

- Distribution: extent of anadromy - 100% of river channels down to second order accessible from estuary.
- Adult spawning fish - Conservation limit (CL) for each system consistently exceeded.
- Salmon fry abundance - Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling.
- Out-migrating smolt abundance - No significant decline.
- Number and distribution of redds - No decline in number and distribution of spawning redds due to anthropogenic causes.
- Water quality - At least Q4 at all sites sampled by EPA.

6.70. ”To restore the favourable conservation condition of Otter in the River Barrow and River Nore SAC”

6.71. This objective is defined by the following list of attributes and targets:

- Distribution – No significant decline.
- Extent of terrestrial habitat - No significant decline. Area mapped and calculated as 122.8ha above high water mark (HWM); 1136.0ha along riverbanks / around ponds.
- Extent of marine habitat - Extent of marine habitat.
- Extent of freshwater (river) habitat - No significant decline. Length mapped and calculated as 616.6km.
- Extent of freshwater (lake) habitat - No significant decline. Area mapped and calculated as 2.6ha.
- Couching sites and holts - No significant decline.
- Fish biomass available - No significant decline.

6.72. "To maintain the Favourable conservation condition of Killarney Fern in the River Barrow and River Nore SAC"

6.73. This objective is defined by the following list of attributes and targets:

- Distribution - No decline. Three locations known, with three colonies of gametophyte and one sporophyte colony.
- Population size - Maintain at least three colonies of gametophyte, and at least one sporophyte colony of over 35 fronds.
- Population structure: juvenile fronds - At least one of the locations to have a population structure comprising sporophyte, unfurling fronds, 'juvenile' sporophyte and gametophyte generations.
- Habitat extent - No loss of suitable habitat, such as shaded rock crevices, caves or gullies in or near to, known colonies. No loss of woodland canopy at or near to known locations.
- Hydrological conditions: visible water - Maintain hydrological conditions at the locations so that all colonies are in dripping or damp seeping habitats, and water is visible at all locations.
- Hydrological conditions: humidity - No increase. Presence of dessicated sporophyte fronds or gametophyte mats indicates conditions are unsuitable.
- Light levels: shading - No changes due to anthropogenic impacts.
- Invasive species - Absent or under control.

Character of the Qualifying Interests of the River Barrow and River Nore SAC

6.74. Table 6-5 outlines the habitat types available within the River Barrow and River Nore SAC and identifies the percentage of various habitat types within the SAC.

Table 6-5: Habitats present in River Barrow and River Nore SAC[13]

Habitat Code	Habitats of River Barrow and River Nore SAC	Extent (%)
N10	Humid grassland, Mesophile grassland	17
NO4	Coastal sand dunes, Sand beaches, Machair	1
NO7	Bogs, Marshes, Water fringed vegetation, Fens	10
N12	Extensive cereal cultures (including rotation cultures with regular fallowing)	4
N14	Improved grassland	15
N16	Broad-leaved deciduous woodland	5
N02	Tidal rivers, estuaries, mud flats, sand flats, lagoons (including saltwork basins)	20
N03	Salt marshes, Salt pastures, Salt steppes	1
N15	Other arable land	1
N17	Coniferous woodland	3
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	1
N05	Shingle, Sea cliffs, Islets	1
N08	Heath, scrub, maquis and garrigue, phygrana	5

[13] River Barrow and River Nore SAC. Natura 2000 - Standard Data Form. Available at: https://natura2000.eea.europa.eu/Natura2000/SDF.aspx?site=IE0002162

N23	Other land (including towns, villages, roads, waste places, mines, industrial sites)	1
N19	Mixed woodland	5
N06	Inland water bodies (Standing water, running water)	10

Threats and Pressures on River Barrow and River Nore SAC

6.75. The **European Designated form**[14] for the River Barrow and River Nore SAC outlines the following pressures and activities impacting the SAC:

Table 6-6: Threats, pressures and activities impacting the River Barrow and River Nore SAC.

Code	Threats and Pressures	Rank	+/-	Inside/ Outside
J02.06	Water abstractions from surface waters	M	-	I
B05	Use of fertilizers (forestry)	M	-	I/O
J03.02.01	Reduction in migration/ migration barriers	M	-	I
M01	Changes in abiotic conditions	M	-	I
C01.03	Peat extraction	M	-	O
A04.01.01	Intensive cattle grazing	M	-	I
C01.01.01	Sand and gravel quarries	L	-	I/O
A10.01	Removal of hedges and copses of scrub	L	-	I
EO2	Industrial and commercial areas	L	-	O
K01.01	Erosion	H	-	I
J02.02.01	Dredging/ removal of limnic sediments	M	-	I

[14] Available at: https://www.npws.ie/sites/default/files/protected-sites/natura2000/NF002162.pdf

F01.01	intensive fish farming, intensification	L	-	I
A02.01	Agricultural intensification	H	-	I/O
I01	Invasive non-native species	M	-	I
D03.01	Shipping lanes, ports, marine constructions 'port areas	L	-	I
B07	Other forestry activities not referred to above	M	-	I/O
J02	Human induced changes in hydraulic conditions	M	-	I
F02.01.02	Netting	L	-	I
H01	Pollution to surface waters (limnic, terrestrial, marine and brackish)	H	-	I/O
F02	Fishing and harvesting aquatic resources	M	-	O
F02.03	Leisure fishing	L	-	I
J02.05.02	Modifying structures of inland water courses	H	-	I
J02.12.02	Dykes and flooding defence in inland water systems	H	-	I
B02	Forest and Plantation management & use	M	-	I/O
B02.01.01	Forest replanting (native trees)	L	+	I/O

Assessment of Likely Impacts Affecting the River Barrow and River Nore SAC

6.76. River Barrow and River Nore SAC comprise the catchments of River Barrow and River Nore stretching from Waterford Harbour to Offaly. The Proposed Development is located 12.22km from the River Barrow, the northern most point of the SAC.

6.77. The coastal habitats of the SAC (Estuaries, Mudflats and sandflats not covered by seawater at low tide, Reefs, Salicornia and other annuals colonising mud and sand, Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) and Mediterranean salt meadows (*Juncetalia maritimi*)) are located over 100km from the Proposed Development Site.

6.78. There is no hydrological pathway between the Proposed Development and the SAC. There will be no loss or contamination of any of the qualifying habitats of the SAC from the Proposed Development.

6.79. River lamprey (*Lampetra fluviatilis*), sea lamprey (*Petromyzon marinus*), brook lamprey (*Lampetra planeri*), twaite shad (*Alosa fallax fallax*), Atlantic salmon (*Salmo salar*), white-clawed crayfish (*Austropotamobius pallipes*) and Nore pearl mussel (*Margaritifera durrovensis*) and freshwater pearl mussel (*Margaritifera margaritifera*) are species confined to the aquatic environment. As the Proposed Development is not hydrologically connected to the SAC there will be no significant effect on these qualifying species.

6.80. Otter is a highly mobile species and can hold territories from 2km to 20km. Although there is not a direct hydrological pathway, there are streams and habitats that offer limited commuting and limited foraging areas and connect to the boundary of the Proposed Development Site, and otter are capable of traversing overland to suitable habitat for feeding and resting. Although considered unlikely, there is potential that otter from the SAC could occasionally use the area comprising of the substation element of the Proposed Development. Other rivers and watercourses between the SAC and the site offer more suitable habitat and therefore it is unlikely they would commute as far as the Proposed Development Site. The section of the grid connection where the Corndarragh stream bisects does not provide foraging or commuting habitat for otter.

6.81. No evidence of otter was noted during the site walkover, however, suitable areas in the form of limited foraging/commuting habitat was noted in the survey area. It is therefore considered that any potential impacts for this species would be limited to foraging/commuting otter.

6.82. Potential impacts for otter include the loss of habitat, disturbance, fragmentation of habitat and pollution.

6.83. Best practice pollution prevention measures and integral design measures have been adopted minimise any effects from pollution. The Proposed Development design includes

2m buffers from all field drains, 5m from boundary watercourse and 10m buffer from OPW watercourses.

6.84. Post-construction, the Proposed Development will ensure the retention of habitats throughout the lifetime of the of the Proposed Development. As part of the planning application for the Proposed Development, a Biodiversity Management Plan (BMP) will be submitted (See **Appendix 2D of Technical Appendix 2: EcA**) which will ensure the enhancement of the Proposed Substation Site post-construction and will increase the potential prey sources for otter. Post-construction, the Proposed Development will ensure the retention of habitats throughout the lifetime of the Proposed Development.

6.85. Although otter is unlikely to be significantly impacted by the Proposed Development and only at the construction stage, a pre-commencement survey is recommended as a precautionary measure prior to the commencement of works. As part of the Proposed Development design, security fencing is to have mammal gates to allow free movement of otter through the site. All excavations during the construction phase of the Proposed Development will be securely covered. Where this is not possible, a means of escape (such as a ramp) and daily checks must be included to allow safe exit from the excavation. This will prevent the accidental trapping of this species.

6.86. It is considered that due to the adopted design principles, best practice and mitigation measures;

- The Proposed Development **will not result in significant adverse effects** for the above qualifying features of this SAC.
- The Proposed Development **will not result in significant adverse effects** to the integrity of the River Barrow and River Nore SAC.

Summary of Potential Impacts on European Designated Sites within 15km

6.87. Potential impacts from the Proposed Development **will not be significant** or have a detrimental effect for the qualifying features of the European Designated sites outlined within this report. The Proposed Development **will not affect** the integrity of any European Designated site.

MITIGATION MEASURES

6.88. Mitigation measures are outlined below in relation to the features of the European Designated Sites assessed which have been identified as having potential to be impacted by the Proposed Development: otter, the aquatic environment, and the qualifying species it supports.

Table 6-7: Design, best practice and mitigation measures

SITE/ SPECIES	POTENTIAL DEVELOPMENT IMPACTS	PHASE OF DEVELOPMENT	MEASURES IMPLEMENTED
INTEGRAL DESIGN MEASURES			
Aquatic environment	Pollution	Construction	2m buffer around drainage ditches 5m from boundary watercourse 10m buffer from OPW watercourse
Otter	Exclusion from commuting habitat	Construction	Security fencing to have mammal gates to allow free movement of otter through the site.
STANDARD BEST PRACTICE MEASURES			
Aquatic environment	Pollution	Construction	Best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment.
Aquatic species	Pollution	Construction	Best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment.
Otter	Accidental trapping within excavations	Construction	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day.

MITIGATION MEASURES			
Otter	Disturbance	Pre-construction	Pre-commencement survey (Measures dependant on survey findings).

6.89. The measures outlined above will implemented prior to or during the construction phase of the development. The pre-construction otter survey must be undertaken within 48 hours prior to the commencement of construction activities. Otter surveys can be carried out at any time of year but should be avoided following periods of prolonged heavy rainfall when spraints and other signs of otter may be washed away.

Pollution Prevention

6.90. Relevant guidance will be adhered to prior to and throughout the construction phase to prevent contaminants entering the aquatic environment. The following CIRIA (Construction Industry Research and Information Association) Guidance Documents have been considered:

- CIRIA Technical Note 138 'Planning to Reduce Noise Exposure in Construction' – a good source of guidance on design and assessment for noise control (ISBN 0 86017 317 8).
- Control of Water Pollution from Construction Sites (C532)
- Control of Water Pollution from Linear Construction Projects: Technical Guidance (C648)
- Environmental Good Practice on Site (C692)

6.91. Suitable protection for watercourses potentially affected by the works will be installed prior to relevant works proceeding. These measures will be in-line with Environmental Protection Agency (EPA) Pollution Prevention Guidelines. Protection measures will include:

- Plant and equipment will be stored on dedicated hardstanding within the construction compound. This will minimise the risk of pollution caused by leakages occurring out of hours. Drip trays will be used where appropriate.
- Plant and equipment will be regularly checked to ensure their correct operation and verify no leakages.
- All plant and equipment will utilise biodegradable hydraulic oil.
- Spill kits will be readily available to all personnel. The spill kits will be of an appropriate size and type for the materials held on site.

- Diesel fuel will be stored in a bunded diesel bowser which will be located within a fenced off area in the construction compound.
- Refuelling and maintenance of vehicles and plant will take place in designated areas of hardstanding.
- All other chemicals will be stored in a secure area with an accompanying COSHH Datasheet.
- Wastewater from the temporary staff toilets and washing facilities will be discharged to sealed containment systems and disposed via licensed contractors.

6.92. All staff on site will be made aware of the pollution prevention measures being implemented throughout the construction phase using appropriate toolbox talks and the site induction.

Noise and Vibration

6.93. Operating plant noise will be kept within the standards and time periods dictated for the site. Any noncomplying plant will be stopped and stood down until it can be rectified or removed from the site.

- The British Standard which gives guidance on noise from construction and mineral working sites is BS 5228. This document does not specify absolute noise limits relating to construction activities; however, it does provide detailed guidance on the steps that can be taken to minimise potential noise & vibration effects. Reasonable mitigating measures are as follows: vehicles and machinery will be switched off when not in use.
- Operation of plant, including fitting and proper maintenance of silencers and/or enclosures, avoiding excessive and unnecessary revving of engines and parking of equipment in locations which avoid possible effects on residential properties.

6.94. All traffic movements will be carried out between the hours of 07.00 to 19.00 on Monday to Friday and 08.00 to 16.00 on Saturdays. Outside of these times works are limited to:

- Abnormal loads will likely be delivered outside of these times and will be subject to prior approval with the council;
- works which do not require significant noise eg, distribution of materials, assembly of structures and modules, commissioning and testing and
- Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment, provided the developer

retrospectively notifies the County Council of such works within 24 hours of their occurrence.

- Public holidays will be observed unless otherwise agreed with the local planning authority.
- When loading and unloading material, attempts shall be made not to drop material from a height.

6.95. Any noise complaints shall immediately be directed to the site agent. Depending on the nature of the complaint, the initial response could be to immediately cease the activity until suitable mitigation measures have been put in place and agreed with the affected individual.

Dust

6.96. In order to control, prevent and minimise dirt on the access route and emissions of dust and other airborne contaminants during the construction works, the following measures will be implemented:

- Wheel washing equipment will be available and used on-site, as required to prevent the transfer of dirt and stones onto the public highway. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site. Wheel washing will likely be a water bowser and power spray. It will not have any cleaning additives and will drain into the temporary drainage feature at the site compound.
- During windy conditions, any dust generating activities will be avoided or minimised, where practical.
- Any soil stockpiles will be covered when left for extended periods of time.
- Driving practices which minimise dust generation will be adopted.
- Loads into and out of the site will be covered where required.

Drainage Management Plan

6.97. The measures described below will be adopted during the construction phase in order to manage on-site drainage in accordance with current best practice and legislation.

Emergency Spill or Pollution Response

6.98. In the event of a liquid spill occurring on a construction site, the Contractor shall cease work immediately in the vicinity. Contractor's trained personnel shall do an appropriate PPE and as follows:

- Locate the source of the pollution and stop/contain any further flow if possible;
- If spillage is flammable, extinguish all ignition sources;
- Immediately deploy the spill kit in accordance with the manufacturer's instructions;
- Clean up the spill; and
- All used spill kit materials should be disposed of in the proper manner as outlined in spill summary procedures.

6.99. The Site Manager shall contact:

- The Client;
- Environmental Protection Agency ("EPA") 24-hour emergency incident line 1890 33 55 99; and
- Inland Fisheries 24-hour pollution line 1890 34 74 24. The pollution hotline number shall be referenced in the construction site rules and displayed in the Site Office and in the 'Emergency Preparedness and Response Plan'.

6.100. Each Contractor working with controlled substances shall supply appropriate spill kits which shall be kept on site. The spill kits shall be made accessible at all times to all site personnel.

6.101. In the event of a fire, all personnel must evacuate the site and assemble at the site entrance. The Site Manager is responsible for calling the Fire Service, who will handle the emergency.

Proposed Drainage Arrangements

6.102. SuDS will be installed prior to the construction of the site. This SuDS feature will take the form of a soakaway channel which will treat and attenuate surface water runoff before infiltrating into the soils below.

Construction Phase

- Due to the addition of the temporary construction compounds during the construction phase, additional drainage measures will be implemented to help attenuate the increase in surface water flows from the construction compound.
- Runoff from these areas is anticipated to have high silt loading due to mobilised soils from excavated surfaces, fines from track aggregate and sludge due to traffic.
- Hardstanding runoff will be directed to a swale/soakaway on the site's lowest boundary. This drainage scheme will be removed at the end of the construction stage and the area reinstated.

Operational Phase

- Any existing on-site drainage ditches or features will be retained in their existing state and will continue to intercept overland flows from the site.
- It is proposed to construct multiple filter drains/soakaways and within the Proposed Substation Site. The location of the schemes has been chosen on the downward slope or near to existing watercourses or drainage features, see **Figure 4.3: Appendix 4A** of **Technical Appendix 4**. The idea is to capture any overland flow in the SuDS device before infiltrating into the surrounding soils. Calculations are included in **Appendix 4C of Technical Appendix 4.**
- The SuDS features will be implemented during the construction phase of the Proposed Development, and the swales will be planted with vegetation to protect against soil erosion. They will be maintained throughout the lifespan of the Proposed Development, generally in accordance with the recommendations in the appropriate guidance.

6.103. Additional drainage measures to be implemented on-site include the following:

- Laydown areas: Laydown areas are to be unpaved and constructed from local stone. Temporary swales or similar shall be utilised to collect runoff from access tracks with discharge to ground through percolation areas. Where swales are utilised, frequent checks of dams formed from gravels and other excavated material should be undertaken.

Drainage Mitigation

Clean Water Diversion

6.104. Where feasible, clean water (e.g. water that has yet to come into contact with any disturbed construction or working areas), will be kept separate from the watershed or intercepted by the construction drainage.

6.105. Up-gradient cut-off ditches and water diversion measures will be installed in order to intercept and divert clean water around construction compound area. These measures will be installed ahead of the main construction works. This will reduce or prevent the amount of potential silt-laden or polluted water that might require treatment.

6.106. Clean runoff that has been diverted around an area of working should be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques.

6.107. Sediment control measures, such as silt traps, gravel, sand bags, anchored straw bales or silt fencing might be required at the discharge point to prevent erosion at the outlet and aid dispersion of the diverted water.

Silt Control

6.108. Silt-laden runoff should be expected from any areas of recently exposed soil or rock. There is also potential for pollution to occur from machinery used in the construction.

6.109. Any introduced or artificial materials required (e.g. silt fencing, straw bales, sand bags etc.) that might need to be deployed onsite, will be removed on completion of the works.

6.110. Discharge from the silt control measures will be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques or discharged into the existing drainage network within the Proposed Substation Site.

Waste Segregation and Storage

6.111. A specific segregation area within each of the temporary site construction compounds will be identified where the separation of materials will take place during the construction phase. This area will allow for the separation of materials into those which can be reused, recycled or disposed.

6.112. All waste containers should be appropriate to the nature of the substances stored and should be secure to ensure no waste can escape. In addition, all waste containers should be appropriately labelled to ensure that it is clear to all construction staff what types of waste can be stored in each container. These containers should be located appropriately to reduce any potential hazards and to ensure no waste is released into the external environment.

6.113. Relevant waste and resource management procedures will be communicated to all construction operatives during the initial site induction, which is mandatory for all staff working on site. This will include instruction on the segregation, handling, re-use and return methods to be used by all parties at all appropriate stages of development. Where possible, waste will be eliminated, re-used or recycled as per the requirements of the waste hierarchy.

Storage of Fuels and Chemicals

6.114. As per Best Practice Guidance (BPGCS005)[15] all fuels, oils and chemicals on site will have a secondary containment system of 110% capacity and be located more than 20m from any watercourse (i.e. outside of the water course buffer).

6.115. A bunded diesel bowser will be located inside a fenced off area within the temporary construction compound. Any other chemicals will be stored within a storage container with an accompanying Control of Substances Hazardous to Health ("COSHH") Datasheet in accordance with health and safety regulations. If generators are used on site, these shall be bunded (the bund shall be capable of containing 110% of the fuel tank's capacity). The bund shall be kept empty of water.

6.116. Where chemicals are required on site, they must be placed in an appropriate bund to prevent ground contamination. All chemicals must be stored in a correctly marked container clearly identifying the contents. Where labels are worn off, they must have a new label placed on them or the contents transferred to a correctly marked container. All safety data sheets for all chemicals should be filed on site as part of the CEMP.

6.117. Spill kits will be on site and, for ease of access, located in the site office. Contingency plans will be in place for dealing with a spillage should a spillage occur.

Refuelling

6.118. During construction, fuel and oil deliveries shall take place within the designated refuelling area within the Temporary Construction Compounds only, the location of this area falls outside the watercourse buffers (discussed subsequently). The Contractor shall supervise site deliveries to ensure that the correct amount of material is delivered to the correct tank and the level is checked prior to refilling to avoid spillage.

6.119. Where refuelling of vehicles on site is necessary, the following guidelines will be strictly adhered to:

- Mobile plant will be filled in a designated area, on an impermeable surface well away from any drains or watercourses;

[15] *Best Practice Guide BPGCS005 - Oil Storage Guidelines*. Available at http://www.envirocentre.ie/includes/documents/OilStorageBPG.pdf;

- A spill kit will be stored (and clearly marked) near refuelling areas;
- A bunded tank / bowser will be used with capacity of the bund to be 110% of the fuel storage capacity;
- Vehicles will never be left unattended during refuelling and drip trays should be located under all static plant vehicles;
- Hoses and valves will be checked regularly for signs of wear, and will be turned off and securely locked when not in use;
- Vehicles will not be left running unnecessarily and low emission fuels will be used where possible; and
- Diesel pumps and similar equipment will be checked regularly and any accumulated oil removed for appropriate disposal.

Excavation and Earthworks

6.120. All excavation and earthworks will be carried out in accordance with BS6031:2009 Code of Practice for Earthworks.[16] Soil handling, extraction and management will be undertaken with regard to best practice guidelines such as Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012.[17]

6.121. The following practices will be followed in relation to the excavation of cable trenches, topsoil stripping and any other earthworks:

- Any excavated material will be stored and re-used to infill excavations. Where the soil is to be re-used, this will be side casted. All side casted soil to be kept a minimum of 20m from any watercourse.
- Although unlikely, if any contaminated earth is uncovered, this will be stored separately and disposed of accordingly once the contaminant has been identified.
- Efforts will be made to ensure that water does not accumulate in excavated areas.
- All topsoil and subsoil will be stored separately, and care will be given to ensure the structure and quality of the soil is not damaged.

[16] British Standards Institute (BSI), 2009. BS 6031:2009 Code of Practice for Earthworks

[17] Environmental Protection Agency (EPA) 2012. Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012. Available at www.epa.ie

- The amount of exposed ground and soil stockpiles will be kept to a minimum and any stockpiles in place for an extended period of time will be allowed to re-vegetate naturally.
- Earthworks shall not occur during unsuitable weather conditions, including when soils are waterlogged or very dry.
- The proposed substation is expected to be built in line with an overage of the existing ground level across the footprint of the Proposed Development.
- Any excavated soil which is not re-used or dispersed across the site and shall be stored on the impermeable surface at the construction compounds and covered to prevent silt runoff and dust creation.

Trenching

- The Contractor, and their appointed Site Manager, will prepare a targeted Method Statement concisely outlining the construction methodology and incorporating all mitigation and control measures included within the Planning Application and accompanying reports;
- All existing underground services shall be identified on site prior to the commencement of construction works;
- The proposed grid connection is circa 7.5km in length (with the majority on public roads) and is to be installed along private agricultural land, public roads, and ESB owned land.
- The excavated trench will be approximately 825mm in width and approximately 1315mm deep.
- The base of the excavated trench will be lined with Cement Bound Granular Mixture B (CBGM B). The UGC will consist of 3 No. 160mm diameter HDPE power cable ducts, 2 No. 125mm diameter HDPE communications duct and 1 no. 125mm diameter earth continuity duct. It is anticipated that this work along the public road will be carried out on the carriageway apart from the joint bays which will be situated within the verge and public road;
- At watercourse crossings, the contractor will be required to adhere to the proposed typical culvert undercrossing drawing (051064-DR-117 P3), typical culvert

overcrossing (051064-DR-118 P2) and environmental control measures outlined within the Planning Application and accompanying reports, the detailed Construction Environmental Management Plan (CEMP) to be prepared prior to the commencement of construction, and best practice construction methodologies;

- Where the cable route or cable interconnection intersects any small culverts, bridges or dry canals, the culvert, bridges or dry canals will remain in place and the ducting will be installed above/below it and provide minimum separation distances in accordance with ESB/ Eirgrid, Irish Water and Waterways Ireland specifications;
- The proposed development does not involve the draining or modifying of any of the minor or major tributary watercourses;
- No installation will take place during extreme weather warnings. No construction personnel, operation or maintenance personnel will be permitted to carry out any works during extreme flood events;
- No more than a 100m section of trench will be opened at any one time. The second 100m section will only be excavated once the majority of reinstatement has been completed on the first;
- The excavation, installation and reinstatement process will take an average of one day to complete a 100m section;
- Following the installation of ducting, pulling the cable will take approximately one day between each joint bay; and
- Where required, grass will be reinstated by either seeding or by replacing with grass turf.

Horizontal Directional Drilling (HDD) for interconnection

HDD Methodology

- A works area of circa 40m2 for the HDD entry side and circa 20m2 on the HDD exit side will be required for the HDD equipment and vehicles. These areas will be fenced off during the HDD implementation.

- The drilling rig and fluid handling units will be located on the entry side to the north of the L60051-1 (Wood of O) and will be appropriately bunded using sandbags, which will contain any fluid spills and stormwater run-off.
- Entry and exit pits (2m x 3m x 1m) will be excavated; the excavated material will be temporarily stored within the works area and used for reinstatement or disposed to a licensed facility.
- The HDD pilot bore will be undertaken using a wireline guidance system. Assembly will be set up by the drilling team and steering engineer.
- The pilot bore will be drilled to the pre-determined profile and alignment under the dry canal and Wood of O road.
- The steering engineer and drill team will monitor the drilling works to ensure that modelled stresses and pressures are not exceeded.
- The drilled cuttings will be flushed back by drilling fluid to the entry and exist pits and recycled for re-use.
- Once the first pilot hole has been completed a hole-opener or back reamer will be fitted in the exit side which will then be pulled back to the entry side as part of the pre-reaming/hole opening process to enlarge the hole to the correct size.
- When the pre-reaming/hole opening/hole cleaning has been completed, a reamer of slightly smaller diameter than the final cut will be installed on the drill string to which the ducts will be attached for installation.
- The drilling fluid will be disposed of to a licensed facility.
- The ducts will be cleaned and proven and their installed location surveyed.
- The entry and exit pits will be reinstated to the specification of ESB Networks and any requirements of Offlay County Council.
- During periods of forecasted rain, HDD will not be performed.

HDD Mitigation

6.122. The use of horizontal directional drilling can pose indirect risks such as sediment and pollution risks. As such, HDD-specific mitigation is required to avoid adverse effects on ecological receptors and maintain habitat integrity.

6.123. The following best-practice measures will be implemented along areas of HDD where appropriate:

- Drill entry and exit pits will be located a minimum of 10m from dry channels, with all excavated spoil also stockpiled at least 10m away to reduce the risk of runoff or sediment transport.
- Silt barriers, consisting of fencing fitted with geotextile fabric, will be constructed along the base of any spoil stockpiles and positioned on sloped ground to prevent surface water runoff.
- Filter fabric will be trenched into the ground to trap coarse particles in surface water, particularly during periods of heavy rainfall.
- The drill path will be designed to maintain a depth of at least 3m beneath the canal bed, to minimise the risk of ground fracture (frac-out) and to ensure the cable remains protected from any future re-watering or natural erosion.
- Although the canal is dry, an Ecological Clerk of works will be assigned to monitor the HDD alignment during drilling activities to detect any potential frac-out or surface migration of drilling fluid. If any signs are observed, all drilling will cease immediately.
- A precautionary containment boom will be placed downslope (if applicable) to intercept any accidental spills or drilling residues.
- Any groundwater or drilling fluid extracted from the pits will be temporarily stored in baffled settlement tanks and discharged to adjacent grassed areas, avoiding direct discharge into drainage channels or the canal bed.
- Excess drilling lubricant will be tankered off-site for recycling, with a tractor and tanker on standby at the entry pit throughout operations.

Road Widening

6.124. Two pinch points were identified along the haul route, one at the L1025/L60051-1 junction and one along the L60051-1. The works required to ensure the largest construction vehicle can access the Proposed Substation Site include: Temporary Road widening with a load bearing surface, temporary hedgerow removal (21m), telegraph pole relocation and permanent widening of road.

Monitoring

6.125. Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Development. This is to ensure compliance with planning conditions and environmental regulations.

Residual impact

6.126. Once all the above-mentioned mitigation measures are in place, the likelihood of the Proposed Development impacting the designated sites is lowered. It can therefore be concluded that the Proposed Development will not have a significant effect upon any qualifying features or Conservation Objective of the aforementioned European Designated sites, and no residual impact is expected.

CUMULATIVE ASSESSMENT

6.127. As well as singular effects, cumulative effects also need to be considered. Article 6 of the EU Habitats Directive and Regulation 15 of the European Communities (Natural Habitats) Regulations state that any plan or project that may significantly affect a European Designated site, either alone or in combination with other plans or projects, should be the subject of an Appropriate Assessment.

6.128. Cumulative impacts can be an issue when multiple proposals have a small impact on European Designated sites. If other proposals have a small impact, the combined result can have a significant impact on the Natura site.

6.129. The European Commission Habitats Directive and the Habitats Regulations 2011 require that the impacts on European sites be assessed for the plan or project in question and also in the presence of other plans and projects that could affect the same European Designated sites.

6.130. This Natura Impact Statement has identified other plans and projects that could act in combination with the Proposed Development and its associated future elements, to identify if they pose likely significant effects on European sites.

Plans

6.131. A review of the following plans was undertaken:

National Planning Framework 2040

6.132. National The National Planning Framework 2040 is a high-level, national vision and provides the strategic framework and principles to manage future population and economic growth in Ireland over the next 20 years. It informs the parameters for the preparation of Regional Spatial and Economic Strategies (RSESs) by each of the three Regional Assemblies, established under the Local Government Reform Act 2014.

6.133. In order to comply with the requirements of Article 6(3) of the EU Habitats Directive, an Appropriate Assessment screening was undertaken at an early stage in the drafting of the National Planning Framework.

6.134. Adopting the precautionary principle, it was concluded that a Natura Impact Statement (NIS) should be prepared. An NIS was prepared by RPS on behalf of the Minister for Housing, Planning and Local Government. The Natura Impact Report (NIR) considered the potential for the NPF to adversely affect the integrity of any Natura 2000 site(s) with regard to their qualifying interests, associated conservation status, the structure/function of the site(s) and the overall site(s) integrity. This was done in a two-stage process, initially

assessing the draft NPF and subsequently assessing the changes made post-consultation for the NPF.

6.135. The Minster of Housing, Planning and Local Government, having considered the AA and its conclusions, determined that:

"the adoption and publication of the NPF as a replacement of the National Spatial Strategy for the purposes of section 2 of the Planning Development Act 2000 will not individually or in combination with any other plan or project adversely affect the integrity of any European Site (as defined)."

6.136. Thus, the in-combination impacts from the National Planning Framework, with the Proposed Development, are not predicted to result in any Likely Significant Effects to any European site(s).

Regional Spatial and Economic Strategy for the Eastern and Midland Region

6.137. In order to comply with the requirements of Article 6 (3) of the EU Habitats Directive and Part XAB of the Planning and Development Act 2000 (as amended), the process of Screening for AA was undertaken at an early stage in the drafting of the RSES.

6.138. The AA Screening undertaken by ecologists at RPS on behalf of the Eastern and Midland Regional Assembly, assessed whether the RSES was likely to have significant effects on any European Sites within the Natura 2000 network, either alone or in combination with other plans and projects.

6.139. The screening concluded that an AA of the RSES was required, as the Plan is not directly connected with or necessary to the management of the sites as European sites and as it cannot be excluded, on the basis of objective information, that the Plan, individually or in combination with other plans or projects, would have a significant effect on a European site.

6.140. Therefore, adopting the precautionary principle, it was concluded that a NIR should be prepared. The NIR (prepared by RPS on behalf of the Eastern and Midland Regional Assembly) considered the potential for the RSES to adversely affect the integrity of any Natura 2000 site(s), with regard to their qualifying interests, associated conservation status, the structure/function of the site(s) and the overall site(s) integrity.

6.141. The Assembly determined that pursuant to Article 6(3) of the Habitats Directive and Part XAB of the Planning and Development Act 2000-2018, that the adoption and publication of the RSES as a replacement for the "Regional Planning Guidelines" for the purposes of Section 24 (4) of the Planning and Development Act 2000 (as amended) would not either individually or in combination with any other plan or project adversely affect the integrity of any European Site.

Offaly County Development Plan 2021-2027

6.142. A consolidated Natura Impact Report (NIR) has been prepared in support of the Appropriate Assessment (AA) of the Offaly County Development Plan 2021-2027[18] in accordance with the requirements of Article 6(3) of Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

6.143. All projects within the Plan area and receiving environment were considered in combination with any and all lower tiers projects that may arise due to the implementation of the Plan. Given the uncertainties that exist with regard to the scale and location of developments facilitated by the Plan, it is recognised that the identification of in-combination effects is limited, and that the assessment of in-combination effects will need to be undertaken in a more comprehensive manner at the project-level.

6.144. The effects that could arise from the Plan were examined in the context of several factors that could potentially affect the integrity of any European site. On the basis of the findings of this Screening for AA, it is concluded that the Plan:

- Is not directly connected with or necessary to the management of any European site; and
- May, if unmitigated, have significant effects on 38 (no.) European sites.

6.145. Consequently, a Stage 2 AA was required for the Plan. This assessed whether the Plan alone, or in-combination with other plans, programmes, and/or projects, would result in adverse impacts on the integrity of the 38 European sites brought forward from screening.

6.146. The Assessment of potential impacts on European sites was conducted utilising a standard source-pathway model (see approach referred to under Sections 1.3 and 3). The 2001 European Commission AA guidance outlines the following potential changes that may occur at a designated site, which may result in effects on the integrity and function of that site: loss/reduction of habitat area; habitat or species fragmentation; disturbance to key species; reduction in species density; changes in key indicators of conservation value (water quality etc.); and climate change.

6.147. The risks to the safeguarding and integrity of the qualifying interests, special conservation interests and conservation objectives of the European sites have been addressed by the inclusion of mitigation measures that will prioritise the avoidance of effects in the first place and mitigate effects where these cannot be avoided. In addition, all lower level plans and projects arising through the implementation of the Draft Plan will themselves be subject to AA/screening for AA when further details of design and location are known.

[18]CAAS Ltd, Consolidated Natura Impact Report in support of the Appropriate Assessment for the Offaly County Development Plan 2021-2027 (2021). Available at: https://www.offaly.ie/eng/Services/Planning/County-Development-Plan-2021-2027/Stage-2-Draft/Draft-Offaly-County-Development-Plan-2021-2027.html

In-combination effects from interactions with other plans and projects was considered in the assessment and the mitigation measures incorporated into the plan are seen to be robust to ensure there will be no significant effects as a result of the implementation of the Draft Plan either alone or in combination with other plans/projects.

6.148. With the incorporation of mitigation measures, it is concluded that the Draft Offaly County Development Plan is not foreseen to give rise to any significant effects on designated European sites, alone or in combination with other plans or projects

6.149. The above plan **is not predicted to result in any significant effects** to any European Designated site and there will be **no effects on European Designated sites from the Proposed Development**. Therefore, it has been concluded from the above assessments that there will be no in combination effect from the reviewed plans with the Proposed Development and associated future elements.

Projects

6.150. There is no standard prescriptive method for assessing cumulative and combined effects of planning applications within a given area. Planning applications considered within this cumulative assessment have been screened by distance, scale and nature, and further determined by comparing potentially overlapping zones of influence from other regarding species, habitats and designated sites.

6.151. There are numerous applications and developments within the 5km buffer. The vast majority of these relate to residential developments (chiefly improvements to dwellings and housing extensions). Given the small scale of these residential projects and a lack of connectivity and impacts to designated sites, it is not reasonably likely that any of these would result in significant cumulative effects on designated sites.

The 'zone of influence' for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change[19]

6.152. When considering cumulative effects, the detail to which the effects of other developments can be assessed quantitatively is dependent on the level of information available. Where environmental assessment information regarding other developments is not available, data deficient or uncertain, the assessment and screening of planning applications is conducted is on a qualitative level.

[19]CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3

6.153. In specific regard to this cumulative impact assessment, following relevant guidance[2021] a zone of influence/cumulative impact assessment radius of 5km from the Proposed Development Site's boundary has been established.

6.154. A search of the Offaly County Council online planning portal was undertaken to identify any Projects or developments within 5km that have been approved or are currently in planning or associated with this development, which could impact, either alone or in combination with the Proposed Development with any European Designated Sites. These developments are outlined in Table 6-8.

Table 6-8: Cumulative Developments to within 5km

Planning Reference	Project Type	Planning Status	Distance and Direction	Date Granted
2198	Ballyteige Solar Farm – 50.53-hectare solar development and substation building	Conditional	0.00km	03/03/2022
Amendment to Planning Ref (2198)	Amendment to the previously consented Ballyteige Solar Farm – 50.53-hectare solar development and substation building	N/A	0.00km	N/A
218	Battery Energy Storage System – Solar farm, battery storage and grid connection	Conditional	2.7km northeast	12/01/2022
1711	A 10 year permission (to construct development). the development will consist of a solar farm comprising: the installation of photovoltaic panels on ground mounted frames in rows on a site of c. 17.7 hectares	Conditional	3.15km northwest	31/08/2017
18167	0.84-hectare Battery Storage unit	Conditional	0.27km east	10/07/2018
16356	82 no. residential units comprising 66 no. houses (6 no. 2-storey 2-bed terraced / end of	Conditional	1.55km southwest	10/07/2017

[20]CIEEM (2024) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3

[21]CIEEM (2018) Guidelines for Preliminary Ecological Appraisal – Second addition.

	terrace / semi-detached, 20 no. 2-storey 3-bed terraced / end of terrace, 28 no 2-storey 3-bed semi-detached, 2 no, 2-storey 3 bed detached, 10 no. 3-storey 4-bed semi-detached), and 8 no. 3-bed duplexes			
20465	Amendments to permitted residential development, (under reg. Ref. 1175 and as extended under reg. Ref. Ex16007) by the replacement of permitted 22 no. Dwellings (bungalows & dormer bungalows) with 30 no. Dwellings comprising 4 no. 2 storey 4 bedroom	Conditional	1.4km northwest	07/01/2021
22378	A period of 10 years to construct and complete a solar pv energy development with a total site area of 73.9 hectares, to include a control building, inverter substations, modules, solar pv ground mounted on support structures, temporary construction compounds, internal access tracks, security fencing, electrical cabling and ducting, CCTV and other ancillary infrastructure, drainage, additional landscaping and habitat enhancement as required and associated site development works relating to access of the site. A natura impact assessment (nis) has been submitted with this application. The solar farm will be operational for 35 years.	Conditional	0.80km east	24/08/2023
22523	A large-scale residential development (lrd). The proposed development will consist of 102	Conditional	1.00km south	16/05/2023

	no. Dwellings in a mix of houses, duplex and apartment dwellings.			
23112	Amendments to a previously permitted development, under abp-301489-18, which consisted of the construction of 12 two storey dormer semi-detached houses, 1 detached two storey dormer house and 7 terraced two storey dormer houses, roads, footpaths, sewers, and all ancillary services on a site at Daingean road, Puttaghaun, Tullamore, Co. Offaly. The amendments sought are for alterations to previously permitted floor plans and elevations, under abp-301489-18, to house types and for minor alterations to site layout and parking arrangements	Conditional	1.00km southwest	03/08/2023
23315	The replacement of a permitted single storey terminal electrical station and separate permitted switchgear enclosure (both previously permitted as part of a solar farm permission by Offaly County Council under planning ref. 17/11) with 1 no. proposed single storey 20kv substation building on the site of the previously permitted terminal station and switchgear enclosure.	Conditional	3.25km northwest	04/10/2023
2460250	The construction of a solar PV development with an installed capacity of up to 2.6 MWdc (MEC=0) to provide electrical power to the existing distillery comprising approximately 4,100 no. photovoltaic panels on ground mounted frames	Conditional	3.8km south	13/11/2024

20579	A compound containing 2 no. Energy storage containers with a capacity of up to 10mw and associated transformers, inverters, a switchroom building of approximately 88m2 (containing switch and control rooms), internal cabling, electrical and communications	Conditional	3.5km south	09/02/2021
2360059	A Large-Scale Residential Development (LRD). The proposed development consists of 126 no. residential units comprised of 102 no. dwelling houses and 24 no. apartments and a childcare facility/creche. The houses are arranged as 7 no. two-story, detached houses (5 no. 3-bedroom, and 2 no. 4-bedroom), 50 no. two-storey, semi-detached houses (2 no., 4-bedroom, 44 no. 3-bedroom and 4 no. 2-bedroom), 21 no. two-storey terraced houses (in 7 terraces each with 3 no. 2-bedroom houses) and 24 no. three-story (third floor in roof/dormer space), semi-detached houses (containing 4 bedrooms).	Conditional	1.50km northwest	12/02/2024
2460514	A new prefabricated substation building within the existing car park to cater for 5no. electric car charging points for 10no. electric car parking spaces, along with all associated ancillary site works	Conditional	2.1km south	18/02/2025
ABP Number	**Development**	**Planning Status**	**Distance and Direction**	**Date Granted**
309488	A renewable biogas facility on a 2.1379-hectare site to produce	Conditional	3.00km west	17/02/2022

	renewable energy and organic fertiliser.			
311741	349 no. residential units (196 no. houses, 153 no. apartments), creche and associated site works.	Live Case	2.85km south	N/A
317341	The construction of 95 no. Houses comprising of 30 no. Two storey three bedroom terrace (house type c), 17no. Two storey three bedroom terrace (house type c1), 9no. Two storey two bedroom terrace (house type c2), 8no. Two storey three bedroom terrace (house type d), 11no. Two storey three bedroom semi-detached/terrace (house type e), 3no. Two storey two bedroom terrace (house type f), 6no. Two storey two bedroom semi-detached/detached (house type g), 1no. Two storey three bedroom semi-detached (house type h), 4no. Two storey three bedroom detached (house type h1), 3no. Two storey three bedroom semi-detached (house type h2), 3no. Single storey one bedroom terrace (house type k) and all associated siteworks	Conditional	1.85km southwest	04/03/2024
311101	Development of 4 storey nursing home, step down facility and rehabilitation and convalescence unit to accommodate a total of 244 bedrooms, communal spaces, dining areas, administration, ancillary service spaces and meeting and consulting rooms. Site to accommodate 197 car park spaces, new site entrance, security kiosk, pump station,	Conditional	0.20km west	09/12/2021

	plant rooms and associated site works.			
318041	A period of 10 years to construct and complete a solar PV energy development with a total site area of 73.9 hectares, to include a control building, inverter substations, modules, solar PV ground mounted on support structures, temporary construction compounds, internal access tracks, security fencing, electrical cabling and ducting, CCTV and other ancillary infrastructure, drainage, additional landscaping and habitat enhancement as required and associated site development works relating to access of the site. A natura impact assessment (NIS) has been submitted with this application. The solar farm will be operational for 35 years.	Conditional	0.00km east	26/06/2024
22387	10 year permission (to construct development) for a solar farm comprising the installation of photovoltaic panels on ground mounted frames in rows on an area of c.83.55ha and all associated infrastructure. The application seeks permission for the solar farm to remain for 40 years and for permanent permission for the substation	Conditional	1.87km northwest	06/11/2024
318339	Construction of Large-Scale Residential Development (LRD) comprising 148 residential units and creche.	Conditional	0.15km southwest	26/01/2024

6.155. The majority of planning applications within the surrounding area of the Proposed Development are residential or agricultural developments of a smaller scale. A selection

of relevant projects with potential for in-combination effects have been recorded above and include other substation developments.

6.156. The proposed solar development located approximately 1.55km northeast of the Proposed Amendment was not live at the time of this assessment and therefore has not yet been submitted for statutory assessment. However, as this development will be subject to its own Environmental Impact Assessment and Appropriate Assessment screening processes at the application stage, it is anticipated that any relevant mitigation will be considered suitable to avoid in-combination effects on European sites. From a desk-based assessment there does not appear to be any potential for this development to give rise to LSEs on the Charleville Wood SAC due to the absence of suitable hydrological pathways. In the context of the current Proposed Amendment and considering the limited preliminary information available, no additional in-combination effects are expected.

6.157. Given its location, Ballyteige Solar farm (**Planning consent 2198**) assessed the Charleville Wood SAC for its hydrological connectivity with the site and the River Barrow and River Nore SAC for its ecological connectivity in respect to otter in the form of an AA Screening report. When assessing potential impacts for ecological features associated with European Designated site via a hydrological route, it was found any negative impacts would not be significant or effect the integrity of the Charleville Wood SAC as a result of construction mitigation measures and integral design measures, which include 2m buffers from field drains, 5m from boundary watercourse and 10m OPW drain buffers. Regarding the River Barrow and River Nore SAC, particularly its qualifying species of otter, potential impacts of Planning Consent 2198 for otter included loss of habitat, disturbance, fragmentation of habitat and pollution. It was deduced that given the nature and design of the Proposed Development the potential impacts for the qualifying features of the SAC would not be significant and the development would therefore **not affect the integrity** of the River Barrow and River Nore SAC.

6.158. It has therefore been concluded for **Planning consent 2198**, that with mitigation measures implemented and design measures adhered to, there is unlikely to be **significant cumulative impacts on** European Designated sites, their conservation objectives, or qualifying interests, in combination with the Proposed Development.

6.159. The adjacent Ballytiege solar farm (2198) is proposed for amendment, and this will be submitted at the same time as this application. An updated ecological assessment and Natura Impact Statement have been submitted alongside this application. There were no additional European Sites identified and the potential hydrological pathway to Charleville Wood SAC and ecological pathway with qualifying otter species of the River Barrow and River Nore SAC have been reassessed with appropriate implemented mitigation. An updated walkover has been completed and with the proposed design, best practice and mitigation it has been concluded there will be no changes from the conclusions of the original submission. In line with the consented solar farm, as there are no further impacts anticipated prom the proposed amendment **it was determined that this development**

would not have any significant impacts on any sensitive ecological receptors. An assessment of in-combination effects was also undertaken, and it was found that, in combination with other projects, this development would not have a significant cumulative impact.

6.160. Planning Consent 218 involved a Battery Energy Storage System and Solar Farm, an NIS was produced to review any potential direct, indirect or cumulative impacts the development may have on European Designated Sites or their designated species or habitats. This NIS concluded that with the implementation of the mitigation measures and further measures within the CEMP report, any adverse effects which could impact the integrity of any European Designated site as a result of the development would not be significant.

6.161. Solar farms have a relatively minor footprint, due to the panels being mounted on piles and are designed to prevent biodiversity loss. Biodiversity Management Plans (BMPs) were included in the planning applications for both Planning consent 2198 and Planning Consent 218. The implementation of BMPs provides suitable habitat and management regime to enhance the solar farms ecological value for local wildlife, which include herptile hibernacula, bat boxes, pollinator rich grass and wildflower areas and enhancement of pre-existing hedgerow to name a few. Therefore, alongside the BMP submitted as part of this application (see Appendix 2D of Technical Appendix 2: Ecological Appraisal) there will be no cumulative loss of habitat if the Proposed Development is consented.

6.162. Planning Consent 2198 and 218 were assessed for likelihood of impact on associated European Designated sites, and both were determined to have no likely significant impact on their conservation objectives or qualifying interests. In-combination effects were also considered in these assessments, and it was found that, in combination with other projects, there was unlikely to be any significant cumulative impact.

6.163. Planning Consent 1711 involved a conditionally consented solar farm on a site of c.17.7ha. An ecological report, including an Appropriate Assessment was produced to review any potential direct, indirect or cumulative impacts the development may have on European Designated sites or their qualifying interests. The ecology report concluded that with the implementation of mitigation measures, no significant negative effects were predicted upon internationally designated sites. The ecology report assessed Charleville Wood SAC but discounted it due to its lack of hydrological connectivity to the proposed development site. The ecological report also proposed a number of enhancement measures including hedgerow and woodland planting with the introduction of nesting and insect boxes.

6.164. It can therefore be concluded that Planning Consent 1711 is unlikely to have significant cumulative impacts on European Designated sites, their conservation objectives, or qualifying interests, in combination with the Proposed Development.

6.165. Planning Consent 18167 is a battery storage unit over 4km northwest of the substation location and approximately 200m east of the proposed grid route. Appropriate

Assessment Screening report was produced in order to assess the potential impacts on European Designated sites. It was deduced that **no negative effects would result from the development though direct habitat loss or damage**, **no negative effects for the qualifying species of the European Designated designation sites** and **no negative effects on these designated sites arising from water quality impacts.** Furthermore, it was stated there would be **no potential negative impacts** on European Designated sites as a result of **Planning Consent 18167** in combination with other plans and projects.

6.166. **Planning Consent 16356** consists of 82 residential units with 66 houses, 8 3-bed Duplexes and 8 apartments, with all associated works, and a car park. The development was granted permission with conditions and was put through Appropriate Assessment Stage 1 Screening. It was found that the development was **unlikely to have any significant impacts on European Designated sites, their conservation objectives or their qualifying interests.** It was also stated that the **in-combination effects of this development and its contribution to cumulative impacts would be insignificant due to a lack of surrounding projects.** Planning Consent 20465 involves amendments to permitted residential development, (under reg. ref. 1175 and as extended under reg. ref. ex16007). A Stage 1 Appropriate Assessment Screening was carried out and it was concluded that **there was unlikely to be any significant effects on European Designated sites, their conservations objectives or qualifying interest from the development.** In-combination effects were also considered, and it was found that **contribution to cumulative impact would be non-existent due to lack of surrounding developments due to a lack of surrounding projects**. **Planning Consent 22378 (ABP-318041)** involves the construction of a solar farm comprising of photovoltaic panels mounted on support structures, access tracks, construction compounds, security fencing, electric cabling, and all other associated works. A Natura Impact Statement was produced which states that, with the implementation of mitigation measures, this development **will not have a significant impact on any European Designated sites, their conservation objectives or qualifying interests.** A cumulative impact assessment was also undertaken which determined that **this development, in combination with other surrounding projects, will not have a significant cumulative impact on any European Designated sites due to a lack of surrounding projects**.

6.167. **Planning Consent 22523 (ABP-317318)** involves the construction of a large-scale development consisting of 102 dwellings, with a mix of houses, duplex and bungalows, and a creche, as well as all other associated works. A Natura Impact Assessment was produced which stated that, with the implementation of mitigation and restrictive measures, **this development is unlikely to have a significant effect on any European Designated sites, their conservation objectives, and qualifying interests**. An assessment of in-combination effects was undertaken, and it was determined that **this development, in combination with other surrounding projects, would not have a significant cumulative effect due to a lack of surrounding projects**.

6.168. **Planning Consent 23112** involves construction a previously permitted development which involves the construction of 20 houses, with a mix of semi-detached, detached and

dormer houses, as well as roads and footpaths, sewers and all other ancillary and associated works. An Appropriate Assessment Stage 1 Screening was conducted, and it was determined that **there would be no significant impact on any European Designated sites, their conservation objectives, or qualifying interests.** In-combination effects were also considered and determined that **this development, in combination with other surrounding projects, was unlikely to have a significant cumulative impact due to a lack of surrounding projects. Planning Consent 23315** involves the replacement of a permitted electrical station and permitted switchgear enclosure with a proposed substation. An Appropriate Assessment Stage 1 Screening was carried out and it was determined that **there would be no likely effects on the conservation objectives or qualifying interests of any European Designated sites.** In-combination effects were assessed, and it was **found that, in combination with other projects, this development was unlikely to have a significant cumulative impact sue to a lack of surrounding projects.**

6.169. **Planning Consent 2460250** involves the construction of a solar PV development with an installed capacity of up to 2.6 MWdc (MEC=0) to provide electrical power to the existing distillery comprising approximately 4,100 no. photovoltaic panels on ground mounted frames. An Appropriate Assessment Stage 1 Screening was carried out and it was determined that **there would be no likely effects on the conservation objectives or qualifying interests of any European Designated sites.** In-combination effects were assessed, and it was **found that, in combination with other projects, this development was unlikely to have a significant cumulative impact sue to a lack of surrounding projects.**

6.170. **Planning Consent 20579** involves a compound containing 2 no. Energy storage containers with a capacity of up to 10mw and associated transformers, inverters, a switchroom building of approximately 88m2 (containing switch and control rooms), internal cabling, electrical and communications. An Appropriate Assessment Stage 1 Screening was conducted, and it was determined that **this development would not have any significant impact of the conservation objectives or qualifying interests of any European Designated sites**. In-combination effects were also considered, and it was **found that, in combination with other projects, there would be no cumulative impact due to a lack of surrounding projects**.

6.171. **Planning consent 2360059** involves a large-scale residential development consisting of 126 residential units composed of houses and apartments, as well as a creche and other ancillary works. An Appropriate Assessment Stage 1 Screening was conducted, and it was determined that **this development would not have any significant impact of the conservation objectives or qualifying interests of any European Designated sites**. In-combination effects were also considered, and it was **found that, in combination with other projects, there would be no cumulative impact due to a lack of surrounding projects**. **Planning Consent 2460514** involves a new prefabricated substation building within the existing car park to cater for 5no. electric car charging points for 10no. electric car parking spaces, along with all associated ancillary site works. Due to the nature and scale of the development, an Appropriate Assessment Stage 1 Screening was not required for the development. As the Proposed Development will include mitigation measures, it

is **unlikely that in-combination effects from these developments will have a significant cumulative impact due to a lack of surrounding projects.**

6.172. **ABP-309488 (Planning Consent 20321)** involves the construction of a renewable biogas facility for the production of renewable energy and organic fertiliser. This development will include site entrances, grid injection unit, feedstock reception hall, boiler and plant room, weighbridge, storage tanks, and all other ancillary and associated works. An Appropriate Assessment for this development was conducted and **it was determined that the conservation objectives or qualifying interests of surrounding European Designated sites would not be affected by the development. In**-combination effects were also considered, and **it was found that, in combination with other developments, this development was unlikely to have a significant cumulative impact due to the lack of surrounding developments. ABP-311741** involves the construction of 349 residential units comprising of 196 houses and 153 apartments, a crèche and all other ancillary and associated works. A Natura Impact Assessment was produced for this development and within this report, **it was concluded that this development would not have a significant impact on the conservation objectives or qualifying interests of any European Designated sites.** In-combination effects were also considered, and **it was determined that this project, in combination with other developments, would not have a significant cumulative impact.**

6.173. **ABP-317341** involves the construction of 95 residential unts comprising of terraced and semi-detached houses and all other associated siteworks. An Appropriate Assessment Stage 1 Screening was conducted, and **it was determined that this site would not adversely impact the conservation objectives or qualifying interests of any European Designated sites**. In-combination effects were also considered, and **it was concluded that this project, in combination with other projects, would not have a significant cumulative impact. ABP-311101** involves the construction of a nursing home, facility and rehabilitation and convalescence unit with 224 bedrooms, a communal space, dining area and other facilities, a car park, site entrance, pump station and other associated works. An Appropriate Assessment Stage 1 Screening was carried out and **it was concluded that this development would not have any significant impact on the conservation objectives or qualifying interests of any European Designated sites**. In-combination effects were also considered during assessment, and **it was determined that, in combination with other projects, there would be no significant cumulative impact.**

6.174. **ABP-318041** involves the construction of a solar farm containing mounted photovoltaic panels, a substation, control building, inverter substations, temporary construction compounds, access tracks, security fencing and other associated works, which will remain in place for a period of 35 years. A Natura Impact Assessment was produced for this development, and **it was concluded that, with implementation of mitigation measures, this development would not have any significant impact on the conservation objectives or qualifying interest of European Designated sites.** In-combination effects were also assessed in this report, and **it was determined that, in combination with other projects, there would be no likely significant cumulative impact.**

6.175. ABP-22387 involves the construction of a solar farm comprising the installation of photovoltaic panels on ground mounted frames in rows on an area of c.83.55ha and associated infrastructure. A Stage 1 AA screening report was produced for this development, and **it was concluded that, the development has no potential pathways for connectivity to impact any European Sites and Stage 2 AA was not required.** In-combination effects were also assessed in this report, and **it was determined that, in combination with other projects, there would be no likely significant cumulative impact.**

6.176. ABP-318339 involves the **construction of Large-Scale Residential Development (LRD) comprising 148 residential units and creche**. A Stage 1 AA screening report was produced for this development, and **it was concluded that, the development has no potential pathways for connectivity to impact any European Sites and Stage 2 AA was not required.** In-combination effects were also assessed in this report, and **it was determined that, in combination with other projects, there would be no likely significant cumulative impact.**

6.177. The developments listed above were all granted subject to conditions , with the exception of the adjacent amendment. These share the conclusion that there would be no significant effects on European Designated sites. It has been concluded that, due to the nature of the Proposed Development, the conclusive statements for the above developments, that the Proposed Development will **not have any significant direct or indirect cumulative impact on the conservation objectives any associated European Designated site.**

6.178. As described above in the mitigation section above, measures put in place within the Proposed Development site will ensure no impacts to the connected European Designated sites occur.

6.179. **No likely significant cumulative effects** on any European Designated sites are expected as a result of the planning developments listed in **Table 6-8**. Therefore, it is considered that the Proposed Development in combination with other proposed developments in the wider area, will have **no likely significant cumulative effect**.

7. CONCLUSION

7.1. The Proposed Development site does not occur within any European Designated sites. Within the 15km zone of influence surrounding the Proposed Development site there are six Special Areas of Conservation (SACs), namely, Charleville Wood SAC, Raheenmore Bog SAC, Spilt Hills and Long Esker SAC, Clara Bog SAC, River Barrow and River Nore SAC and Lough Ennel SAC. In addition, within the 15km zone of influence surrounding the Proposed Development site there are two Ramsar sites, namely, Clara Bog Ramsar site and the Raheenmore Bog Ramsar site.

7.2. There are no Special Protection Areas (SPAs) identified within the 15km study zone.

7.3. Of the six European Designated sites, it was found that one SAC is hydrologically connected to the Proposed Development Site, and one SAC is ecologically connected to the Proposed Development Site. A hydrological pathway for potential impacts exists between the Proposed Development site and Charleville Wood SAC. An ecological pathway for potential impacts exists between the Proposed Development site and the River Barrow and River Nore SAC

7.4. It is concluded that the Proposed Development will not adversely affect the integrity of any European Designated site due to measures inaugurated during the design phase and following relevant guidance to prevent pollution during the construction and operation phases. Pollution prevention measures, proposed drainage management and waste management measures have too been outlined within this report.

7.5. With the implementation of these measures, along with ongoing monitoring to ensure compliance and the pre-commencement survey work outlined, it is considered that the Proposed Development **will not have a significant effect upon any qualifying features, and therefore the integrity, of the European Designated sites** connected with the Proposed Development Site.

7.6. It is therefore considered that the next stage (Stage 3; Assessment of Alternatives) of the Appropriate Assessment is not required.

8. APPENDICES

Appendix A

- Figure 1 – European Designated Sites Map

An **Origin Enterprises** Company

GLASGOW - HEAD OFFICE

Wright Business Centre, 1 Lonmay Road,
Glasgow, G33 4EL
T: 0141 773 6262

NORTHERN IRELAND OFFICE

83-85 Bridge Street, Ballymena, Co. Antrim,
Northern Ireland, BT43 5EN
T: 0282 565 04 13

BRISTOL OFFICE

Spaces 8th Floor
The Programme Building
The Pithay
Bristol, BS1 2NB
T: 0282 565 04 13

DUBLIN OFFICE

C/O Origin Enterprises PLC
4-6 Riverwalk,
Citywest Business Campus
Dublin 24, D24 DCW0
T: 00 353 (1) 5634900

RUGBY OFFICE

Valiant Office Suites
Lumonics House, Valley Drive,
Swift Valley, Rugby,
Warwickshire, CV21 1TQ
T: 01788 297012

WARRINGTON OFFICE

Lakeview 600, Lakeside Drive
Centre Park Square
Warrington
WA1 1RW
T: 01925 984 682