

12.0 BIODIVERSITY

12.1 INTRODUCTION

This chapter presents a Biodiversity Impact Assessment of the proposed development and should be read in conjunction with Chapter 3 (Description of the Proposed Development). Details of the assessment methodology and existing site conditions are presented, potential impacts are assessed, and mitigation measures are recommended, where required.

The aims of this assessment were to:

- To obtain baseline ecological data and record environmental conditions at the proposed development site and surrounding environs;
- To determine the ecological value and sensitivity of the identified ecological receptors;
- To assess the significance of effects of the potential impacts, including direct, indirect and secondary impacts, which may result from the proposed development during construction, operation and/or decommissioning;
- To recommend mitigation measures to avoid and/or reduce the significance of the identified impacts; and
- To identify any residual impacts post mitigation and restoration measures.

The potential impacts of the proposed development on European sites (sites designated as Special Areas of Conservation [SACs] or Special Protection Areas [SPAs] that form part of the Natura 2000 network) within the Zone of Influence (Zoi) of the proposed development have been evaluated as required under Article 6(3) and 6(4) of the Habitat Directive. This appraisal is presented separately in the form of a Screening for Appropriate Assessment (which accompanies the Planning Application documentation).

12.2 STATEMENT OF AUTHORITY

This chapter was prepared by Áine Sands B.Sc. (Hons), Senior Ecologist with TOBIN. Áine has seven years post-graduate experience in ecology and environmental consultancy. Áine has predominantly been involved in large public and private infrastructure projects where she has carried out numerous Screenings for Appropriate Assessments, Natura Impact Statements and Ecological Impact Assessments for the proposed developments. Áine has a strong understanding of National and European legislation associated with biodiversity and is cognisant of relevant rulings by the Court of Justice of the European Union (CJEU). Áine also has experience with undertaking ecological surveys for protected habitats and species.

This chapter was senior reviewed by Laura Kennedy (M.Sc), Associate Director and Lead Ecologist in TOBIN's Environment and Planning section. She is a qualified and experienced environmental consultant with over 14 years' experience in environmental sciences and environmental consulting. Laura's expertise includes; Project Management, Environmental Impact Assessment Reporting, Appropriate Assessments, terrestrial, ornithological and aquatic ecological surveying, data analysis, environmental monitoring, and preparing technical reports. Laura has a strong technical background as an aquatic ecologist and has extensive field experience in biological and chemical water quality assessment. She has also conducted bird and nest surveys, bat surveys, amphibian surveys, and carried out fish habitat assessments, which included electrofishing, minnow trapping and fish identification.

12.3 METHODOLOGY

12.3.1 Legislation, Plans, Policies and Guidance

The following legislation was considered in this chapter of the Environmental Impact Assessment Report (EIAR), where relevant:

- European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011), as amended. With particular reference to the Third Schedule of the European Communities Regulations 2011 (S.I. No. 477 of 2011) which deals with invasive species;
- The EIA Directive 2011/92/EU, as amended by Directive 2014/52/EU;
- European Union (EU) (Environmental Impact Assessment and Habitats) (No. 2) Regulations 2015 (S.I. No. 320/2015);
- Environmental Liabilities Directive (2004/35/EC);
- Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora, herein referred to as the Habitats Directive;
- Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the Conservation of Wild Birds, herein referred to as the Birds Directive;
- The EU Water Framework Directive (2000/60/EC);
- The Wildlife Acts 1976 to 2022 (as amended), herein referred to as the Wildlife Acts;
- The Flora (Protection) Order 2022 (S.I. No. 235 of 2022);
- Relevant fisheries legislation up to and including the Inland Fisheries Acts 1959-2017, as amended.

The following plans and their objectives and policies have also been considered in this chapter:

- Objectives and policies relevant to ecology and biodiversity in the South Dublin County Development Plan 2022-2028¹;
- Relevant policies in Ireland's 3rd National Biodiversity Action Plan, 2017 - 2021 produced by the Department of Culture, Heritage and the Gaeltacht²;
- Climate Action Plan 2023 (CAP23)³.

The potential for effects on key ecological receptors (KERs⁴) was assessed, taking into consideration the habitats and species that are likely to be affected by the proposed development. This approach included consideration (as appropriate) of the following guidance documents:

- Fossitt (2000). A Guide to Habitats in Ireland. The Heritage Council;
- Environmental Protection Agency (EPA) (2022). Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester;
- Bird Species of Medium and High Conservation Concern Listed in the Publication Birds of Conservation Concern in Ireland (BoCCI) 2020 - 2026 (Gilbert *et al.*, 2021);
- SNH (2016). Assessing Connectivity with Special Protection Areas (SPAs);

¹ <https://www.sdcc.ie/en/devplan2022/adopted-plan/county-development-plan-written-statement/county-development-plan-written-statement.pdf>

² <https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf>

³ Accessed [December 2022] via <https://www.gov.ie/en/publication/7bd8c-climate-action-plan-2023/>

⁴ KERs are those biodiversity receptors within the Zol of the proposed development which are "both of sufficient value to be material in decision making and likely to be affected significantly" i.e. with an ecological value of local importance (higher value) or greater.

- NRA (2005). Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes;
- NRA (2006a). Guidelines for the Treatment of Otters prior to the Construction of National Roads Schemes. National Roads Authority, Dublin;
- NRA (2006b). Best Practice Guidance for the Conservation of Bats in the Planning of National Road Schemes;
- NRA (2008). Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes;
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes. (Revision 2, National Roads Authority);
- NRA (2010). Guidelines on the Management of Noxious Weeds and Non-Native Plant Species on National Roads;
- Transport Infrastructure Ireland (2020). The Management of Invasive Alien Plant Species on National Roads – Technical Guidance; and
- Smith, G. F., O'Donoghue, P., O'Hora, K., & Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping. Ireland's Heritage Council: Kilkenny, Ireland.

12.3.2 Study Area

As discussed in Chapter 3 of this EIAR (Description of Development), the proposed development includes the development of a 110kV electrical substation (hereafter referred to as the Baldonnell substation) and associated grid connection to provide a connection from the adjacent gas fired peaking power plant to the existing electricity transmission system, at a site located in Profile Park, Dublin 22.

The study area for this Biodiversity Assessment comprised the proposed Baldonnell substation site and associated network infrastructure, plus the wider surrounding hinterland. The wider surrounding environment comprises a mixture of industrial developments and agricultural and amenity grasslands. The study area comprises all lands located within the Zol of the proposed development. The Zol is described hereunder.

12.3.2.1 Zone of Influence

The current guidance on ecological assessments (CIEEM, 2018) states that:

“The ‘zone of influence’ for a project is the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site, for example where there are ecological or hydrological links beyond the site boundaries” and that “The zone of influence will vary for different ecological features depending on their sensitivity to an environmental change.”

The Zol has therefore been defined through a desk-based assessment with regard to the sensitivity of habitats and species possibly present / previously recorded in the locality of the proposed development, areas with connectivity (physical, hydrological or ecological) to the proposed development site boundary and potential impacts which may arise. How the Zol was established is summarised hereunder:

- On the basis of the desk-based assessment, the main habitats located within the proposed development site and surrounding lands were found to likely comprise a mixture of grassland and commercial developments. Given the location of the proposed development site, and having regard to the habitats likely to be present (determined through the desktop assessment) the following protected species were considered likely to occur within the surrounding environs; badger (*Meles meles*), otter (*Lutra lutra*), bat (*Chiroptera spp.*) and common farmland bird species.

- The outer extent of the Zol for protected mammal species was therefore defined with regard to the NRA (2005) and the NRA (2006a) guidelines which both state that noise impacts from construction works can impact breeding badger setts / otter holts within 150m of construction works. Other protected mammal species likely to be present in the locality will have a smaller Zol, as impacts are predominantly associated with habitat damage and will therefore be captured within the 150m Zol. The Zol for bats relates to their commuting / foraging routes and location of roost sites; the potential for which is determined through field assessment. An assessment of potential roost sites within the footprint of the works was undertaken (Section 12.5.2.11).
- The extent of the Zol for protected bird species was established through potential impacts to birds from the proposed development. The main impacts to birds include; habitat loss, fragmentation of habitat, and disturbance. The Zol for birds was therefore defined as the proposed development site boundary to account for habitat loss and several hundred meters from the site boundary to account for displacement and/or disturbance. Cutts *et al.* (2013) notes that different types of disturbance stimuli are characterised by different avifaunal reactions, however as a general rule of thumb, a distance of 300m can be used to represent the maximum likely disturbance distance for waterfowl. Notwithstanding, bird species will elicit differing behavioural responses to disturbance at different distances from the source of disturbance, therefore all bird species will be assessed individually.
- The Zol of potential impacts on surface water quality in the receiving freshwater environment are likely to be confined to the Baldonnell Stream (Liffey_170) (IE_EA_09L012100) and the downstream environment. The Baldonnell Stream occurs approximately 120m east of the proposed development. The stream flows in a northerly direction before discharging into the River Liffey (Liffey_180) (IE_EA_09L012350) approximately 6.5km downstream.

12.3.2.2 Consultations

Consultation with various state agencies and environmental Non-Governmental Organisations (NGOs) was undertaken in December 2022 to inform this EIAR. Ecologically associated state agencies and NGOs, relevant to the proposed development, were contacted in order to obtain any additional information and data, which may have been useful in informing this assessment. The following organisations were contacted:

- Environmental Protection Agency (EPA);
- Development Application Unit (DAU); and
- Inland Fisheries Ireland (IFI).

At the time of writing this report, no response was received from the above-mentioned state agencies. Despite the lack of responses, it is considered that a robust assessment was undertaken using publicly available data and field survey data and final conclusions were not impeded.

12.3.2.3 Desk Study

An ecological desk study of the proposed development was undertaken to inform the assessment. Principal sources of information utilised for the desktop assessment included:

- Existing relevant mapping and databases e.g. species and habitat distribution from the following sources:
 - the National Parks and Wildlife Services [NPWS] website via;
<https://www.npws.ie/> (Accessed December 2022);

- the National Biodiversity Data Centre [NBDC] website via: <https://biodiversityireland.ie> (Accessed December 2022);
 - the Environmental Protection Agency [EPA] website via: <https://gis.epa.ie/EPAMaps/> (Accessed December 2022);
 - The Water Framework Directive (WFD) Map Viewer via: <https://www.catchments.ie/> (Accessed December 2022).
- Published and unpublished NPWS reports on protected habitats and species including Irish Wildlife Manual Reports, Species Action Plans and Conservation Management Plans;
 - A review of all designated sites and their site synopses for sites within the Zol of the proposed development;
 - Conservation Status Assessment Reports (CSARs), Backing Documents and Maps prepared in accordance with Article 17 of the Habitats Directive;
 - A review of published data and documents from Bat Conservation Ireland (BCIreland), Botanical Society of Britain (BSBI) and IFI;
 - A review of Ordnance Survey maps and aerial photography in order to determine the broad habitats that occur within the study area and thus typical bird communities; and
 - A review of relevant ecological reports previously completed for the study area.

12.3.2.4 Field Survey

A multi-disciplinary ecological survey of the proposed development site was undertaken by a qualified and experienced TOBIN ecologist on the 5th of January 2023. The data collected was robust and allowed TOBIN to draw accurate, definitive and coherent conclusions on the possible impacts of the proposed development on ecological receptors. A description of the surveys undertaken is provided hereunder.

- A habitat and botanical survey were undertaken within the proposed development site following methods outlined within Smith *et al.* (2011) guidance: '*Guidance for Habitat Survey and Mapping*'. Habitats were classified according to Fossitt (2000) with reference made to the '*Interpretation Manual of European Union Habitats*' (EC, 2013) as appropriate. The proposed development site was also searched for evidence of invasive plant species listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011.
- A terrestrial mammal survey was carried out in line with guidance outlined in the NRA (2008): '*Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes*'. Target surveys for specific protected species were also undertaken as follows:
 - Otter surveys were undertaken along waterbodies (which included rivers, ponds and drainage ditches) within the proposed development site plus a 150m buffer, following methodologies outlined within the NRA (2006a) guidelines, and Chanin (2003) '*Monitoring the Otter Lutra Lutra*'. Any evidence of otter such as tracks, spraints, couches, slides, feeding remains or holts, were recorded.
 - Badger surveys were undertaken within the proposed development site plus a 150m buffer of the site. The survey followed methodologies outlined in '*Surveying Badgers*' (Harris *et al.*, 1989) and guidance outlined in the NRA guidance (NRA, 2005). Any evidence of badger activity such as setts, trails, latrines and feeding signs were recorded.
 - A bat roost assessment of all trees and structures within the proposed development site was carried out in accordance with the NRA (2006b) guidelines '*Best practice guidance for the Conservation of Bats in the Planning of National Road Schemes*' and Collins (2016) '*Bat surveys for Professional Ecologists: Good*

Practice Guidelines. The daytime ground level visual assessment was carried out in order to determine potential roost features in trees.

- Observations of ornithological activity within the study area were recorded with regards to the Countryside Bird Survey guidelines CBS Manual, ‘*Guidelines for Countryside Bird Survey Participants*’ (CBS, 2012).
- An aquatic habitat assessment was carried out along the stretch of the Baldonnell Stream located within the proposed development site and in the receiving environment directly downstream, using the methodology provided in the Scottish Environment Protection Agency ‘*River Habitat Survey in Britain and Ireland Field Survey Guidance Manual: 2003 Version*’ (Environment Agency, 2003).

12.3.2.5 Survey Limitations

The habitat and botanical surveys were undertaken in January, which lies outside the optimal survey period (Smith *et al.*, 2011). There is therefore potential that protected or invasive plant species may not have been present at the time of the survey. The surveys were therefore supported with a robust desktop assessment, which included reviews of previous habitat surveys undertaken within the area, as well as a thorough review of plant species recorded to ensure all species were correctly identified. It was therefore considered that no protected or invasive plant species were missed during the survey. Notwithstanding, a pre-construction invasive species surveys will be carried out by the appointed Contractor, prior to the construction works commencing.

12.4 BASELINE EVALUATION CRITERIA

Ecological resources/receptors were evaluated following the NRA (2009) guidelines (Table 12-1), which set out the importance of the ecological resource/receptor in a geographic context. These guidelines are consistent with the approach recommended in CIEEM guidance (CIEEM, 2018).

The information gathered from desk studies and field surveys was used to carry out an Ecological Impact Assessment (EclA) of the proposed development upon the identified ecological receptors and classification of their ecological importance, according to the NRA (2009) guidelines. Those features identified as being of high local importance or greater were given particular focus in the ecological evaluation as KERs when considering the potential for significant impacts and subsequent requirement for appropriate mitigation.

In addition, all potential impacts were assessed and characterised in accordance with the guidance produced by the EPA, *Guidelines on the information to be contained in Environmental Impact Assessment Report* (EPA, 2022 – Table 12-2). Via this approach, a scientific, robust, and repeatable method was applied whereby all aspects of a potential impact were considered.

Table 12-1: Site Evaluation Criteria

| Importance | Ecological Valuation |
|---------------------------------|--|
| International Importance | <ul style="list-style-type: none"> • European sites including Special Area of Conservation (SAC), Site of Community Importance (SCI), Special Protection Area (SPA), proposed Special Area of Conservation (pSAC), proposed Special Protection Area (pSPA), and/or Site that fulfils the criteria for designation as a ‘European Site’ (see Annex III of the Habitats Directive, as amended). • Features essential to maintaining the coherence of the Natura 2000 Network. • Site containing ‘best examples’ of the habitat types listed in Annex I of the Habitats Directive. |

| Importance | Ecological Valuation |
|----------------------------|--|
| | <ul style="list-style-type: none"> • Resident or regularly occurring populations (assessed to be important at the national level) of the following: <ul style="list-style-type: none"> ○ Species of bird listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; and/or ○ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive. • Ramsar Site (Convention on Wetlands of International Importance Especially Waterfowl Habitat 1971). • World Heritage Site (Convention for the Protection of World Cultural & Natural Heritage, 1972). • Biosphere Reserve (UNESCO Man & The Biosphere Programme). • Site hosting significant species populations under the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals, 1979). • Site hosting significant populations under the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats, 1979). • Biogenetic Reserve under the Council of Europe. • European Diploma Site under the Council of Europe. • Salmonid water designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988, (S.I. No. 293 of 1988). |
| National Importance | <ul style="list-style-type: none"> • Site designated or proposed as a Natural Heritage Area (NHA). • Statutory Nature Reserve. • Refuge for Fauna and Flora protected under the Wildlife Acts. • National Park. • Undesignated site fulfilling the criteria for designation as an NHA, Statutory Nature Reserve; Refuge for Fauna and Flora protected under the Wildlife Acts; and/or a National Park. • Resident or regularly occurring populations (assessed to be important at the national level) of the following: <ul style="list-style-type: none"> ○ Species protected under the Wildlife Acts; and/or ○ Species listed on the relevant Red Data list. • Site containing 'viable areas' of the habitat types listed in Annex I of the Habitats Directive. |
| County Importance | <ul style="list-style-type: none"> • Area of Special Amenity. • Area subject to a Tree Preservation Order. • Area of High Amenity, or equivalent, designated under the County Development Plan. • Resident or regularly occurring populations (assessed to be important at the County level) of the following: <ul style="list-style-type: none"> ○ Species of bird, listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; ○ Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; ○ Species protected under the Wildlife Acts; and/or ○ Species listed on the relevant Red Data list. • Site containing area or areas of the habitat types listed in Annex I of the Habitats Directive that do not fulfil the criteria for valuation as of International or National importance. • County important populations of species or viable areas of semi-natural habitats or natural heritage features identified in the National or Local Biodiversity Action Plan (BAP), if these have been prepared. • Sites containing semi-natural habitat types with high biodiversity in a county context and a high degree of naturalness, or populations of species that are uncommon within the county. |

| Importance | Ecological Valuation |
|--|--|
| | <ul style="list-style-type: none"> Sites containing habitats and species that are rare or are undergoing a decline in quality or extent at a national level. |
| Local Importance (Higher Value) | <ul style="list-style-type: none"> Locally important populations of priority species or habitats or natural heritage features identified in the Local BAP, if this has been prepared. Resident or regularly occurring populations (assessed to be important at the Local level) of the following: <ul style="list-style-type: none"> Species of bird listed in Annex I and/or referred to in Article 4(2) of the Birds Directive; Species of animal and plants listed in Annex II and/or IV of the Habitats Directive; Species protected under the Wildlife Acts; and/or Species listed on the relevant Red Data list. Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality; Sites or features containing common or lower value habitats, including naturalised species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value. |
| Local Importance (Lower Value) | <ul style="list-style-type: none"> Sites containing small areas of semi-natural habitat that are of some local importance for wildlife. Sites or features containing non-native species that are of some importance in maintaining habitat links. |

Table 12-2: Description of Effects

| Description of Effect | Definition |
|-------------------------|--|
| Quality of Effects | <p>Positive Effects A change which improves the quality of the environment (for example, by increasing species diversity; or the improving reproductive capacity of an ecosystem, or by removing nuisances or improving amenities).</p> |
| | <p>Neutral Effects No effects or effects that are imperceptible, within normal bounds of variation or within the margin of forecasting error.</p> |
| | <p>Negative/Adverse Effects A change which reduces the quality of the environment (for example, lessening species diversity or diminishing the reproductive capacity of an ecosystem; or damaging health or property or by causing nuisance).</p> |
| Significance of Effects | <p>Imperceptible An effect capable of measurement but without significant consequences.</p> |
| | <p>Not Significant An effect which causes noticeable changes in the character of the environment but without significant consequences.</p> |
| | <p>Slight Effects An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p> |
| | <p>Moderate Effects An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends</p> |
| | <p>Significant Effects An effect which, by its character, magnitude, duration or intensity, alters a sensitive aspect of the environment</p> |
| | <p>Very Significant</p> |

| Description of Effect | Definition |
|---------------------------------------|--|
| | An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment. |
| | Profound Effects An effect which obliterates sensitive characteristics |
| Describing the Probability of Effects | Likely Effects The effects that can reasonably be expected to occur because of the planned project if all mitigations measures are properly implemented. |
| | Unlikely Effects The effects that can reasonably be expected not to occur because of the planned project if all mitigation measures are properly implemented |
| Duration and Frequency of Effects | Momentary Effects Effects lasting from seconds to minutes |
| | Brief Effects Effects lasting less than a day |
| | Temporary Effects Effects lasting less than a year |
| | Short-term Effects Effects lasting one to seven years |
| | Medium-term Effects Effects lasting seven to fifteen years. |
| | Long-term Effects Effects lasting fifteen to sixty years. |
| | Permanent Effects Effects lasting over sixty years |
| | Reversible Effects Effects that can be undone, for example through remediation or restoration |
| | Frequency of Effects Once, rarely, occasionally, frequently, constantly – or hourly, daily, weekly, monthly, annually |

12.5 EXISTING ENVIRONMENT

12.5.1 Output of Desk Study

The findings of the desk study are detailed hereunder.

12.5.1.1 Designated Conservation Sites

12.5.1.2 Sites of International Importance

The Birds Directive (2009/147/EC) and the Habitats Directive (92/42/EEC) put an obligation on EU Member States to establish the Natura 2000 network. The Natura 2000 network comprises sites of the highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises SACs and SPAs, where SACs are selected for the conservation of Annex I habitats (including priority types, which are considered threatened) and Annex II species (other than birds). SPAs are selected for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats.

Nine European sites (six SACs and three SPAs) occur within a 15km⁵ radius of the proposed development site and are listed in Table 12-3 and are illustrated on Figure 12-1 below. The

⁵ Guidance in Appropriate Assessment of plans and projects in Ireland notes that a distance of 15km is recommended for the identification of relevant European sites in the first instance (EHLG, 2010).

European sites; North Dublin Bay SAC (000206), South Dublin Bay SAC (000210), South Dublin Bay and River Tolka Estuary SPA (004024) and North Bull Island SPA (004006) are all hydrologically connected to the proposed development site via the Baldonnell Stream and the River Liffey (hydrological route ca. 30km downstream).

12.5.1.3 Sites of National Importance

Natural Heritage Areas (NHA) are the basic wildlife designation in Ireland. These areas are considered nationally important for the habitats present, or which holds species of plants and animals whose habitats need protection. Under the Wildlife Acts, NHAs are legally protected from damage from the date they are formally proposed for designation (source: www.npws.ie). Proposed Natural Heritage Areas (pNHA) were published on a non-statutory basis in 1995 and have not since been statutorily proposed or designated.

There are no NHAs located within 15km, or with a hydrological link, to the proposed development site.

Fifteen pNHAs occurs within 15km of the proposed development site and are listed in Table 12-3 below. Four pNHAs; Liffey Valley pNHA (000128), North Dublin Bay pNHA (000206), South Dublin Bay pNHA (000210) and Dolphin Docks pNHA (000201) are all hydrologically connected to the proposed development site via the Baldonnell Stream and the River Liffey (hydrological route ca. 30km downstream). All pNHAs are listed in Table 12-3 below and are illustrated on Figure 12-1.

12.5.1.4 Other Sites of Conservation Interest

Other sites of conservation interest within the Zol or within 15km of the proposed development site are discussed hereunder:

- There are no National Parks located within 15km of the study area.
- There are no Nature Reserves located within 15km of the study area.
- Two RAMSAR sites; Sandymount Strand/Tolka Estuary (RAMSAR_Code: 832) and North Bull Island (RAMSAR_Code: 406) are located within Dublin Bay and therefore are hydrologically connected the proposed development site.

Table 12-3: Designated Conservation Sites within 15km of the Proposed Development

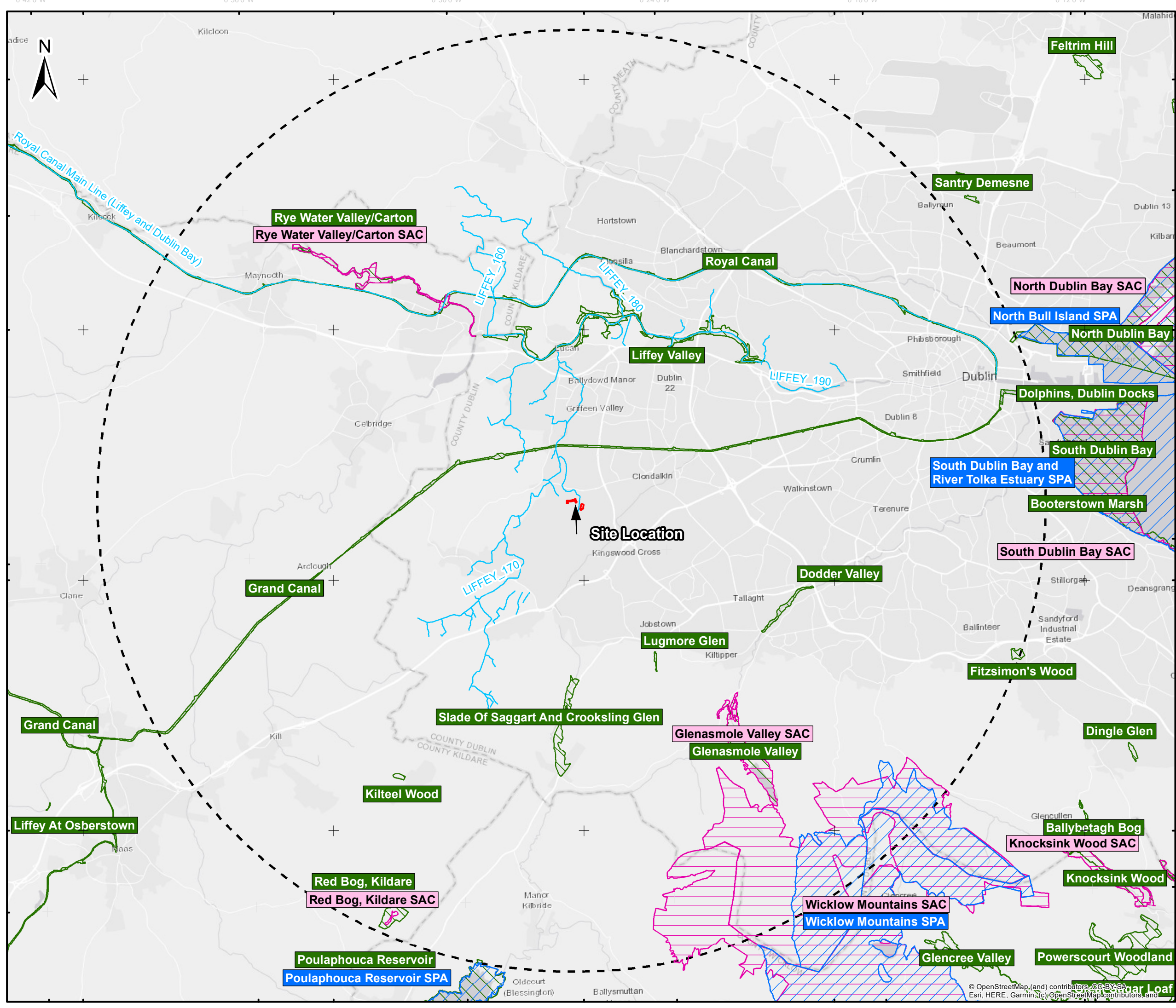
| Name | Site Code | Approximate distance from the Proposed Development Site (km) | Pathway (Yes or No) |
|---|--|--|---|
| International Sites (European Sites) | | | |
| Rye Water Valley/Carnton SAC (001398) | <ul style="list-style-type: none"> • Petrifying springs with tufa formation (Cratoneurion) [7220] • <i>Vertigo angustior</i> (Narrow-mouthed Whorl Snail) [1014] • <i>Vertigo moulinsiana</i> (Desmoulin's Whorl Snail) [1016] | Ca. 6.1km north-west of the proposed development site | No – no viable pathway between the proposed development and the SAC |
| Glenasmole Valley SAC (001209) | <ul style="list-style-type: none"> • Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites) [6210] • Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>) [6410] • Petrifying springs with tufa formation (Cratoneurion) [7220] | Ca. 7.8km south-east of the proposed development site | No – no viable pathway between the proposed development and the SAC |
| Wicklow Mountain SAC (002122) | <ul style="list-style-type: none"> • Oligotrophic waters containing very few minerals of sandy plains (<i>Littorelletalia uniflorae</i>) [3110] • Natural dystrophic lakes and ponds [3160] • Northern Atlantic wet heaths with <i>Erica tetralix</i> [4010] • European dry heaths [4030] • Alpine and Boreal heaths [4060] • Calaminarian grasslands of the <i>Violetalia calaminariae</i> [6130] • Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230] • Blanket bogs (* if active bog) [7130] • Siliceous scree of the montane to snow levels (<i>Androsacetalia alpinae</i> and <i>Galeopsietalia ladani</i>) [8110] • Calcareous rocky slopes with chasmophytic vegetation [8210] • Siliceous rocky slopes with chasmophytic vegetation [8220] | Ca. 9.5km south-east of the proposed development site | No – no viable pathway between the proposed development and the SAC |

| Name | Site Code | Approximate distance from the Proposed Development Site (km) | Pathway (Yes or No) |
|-------------------------------|--|---|--|
| | <ul style="list-style-type: none"> • Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] • <i>Lutra lutra</i> (Otter) [1355] | | |
| Red Bog, Kildare SAC (000397) | <ul style="list-style-type: none"> • Transition mires and quaking bogs [7140] | Ca. 15km south-west of the proposed development site | No – no viable pathway between the proposed development and the SAC |
| Wicklow Mountain SPA (004040) | <ul style="list-style-type: none"> • Merlin (<i>Falco columbarius</i>) [A098] • Peregrine (<i>Falco peregrinus</i>) [A103] | Ca. 12.8km south-east of the proposed development site | No – no viable pathway between the proposed development and the SAC |
| North Dublin Bay SAC (000206) | <ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] • Humid dune slacks [2190] • <i>Petalophyllum ralfsii</i> (Petalwort) [1395] | Ca. 15km east of the proposed development site and is hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |
| South Dublin Bay SAC (000206) | <ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Salicornia and other annuals colonising mud and sand [1310] • Embryonic shifting dunes [2110] | Ca. 15.5km east of the proposed development site and hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |

| Name | Site Code | Approximate distance from the Proposed Development Site (km) | Pathway (Yes or No) |
|---|---|---|--|
| South Dublin Bay and River Tolka Estuary SPA (004024) | <ul style="list-style-type: none"> • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] • Ringed Plover (<i>Charadrius hiaticula</i>) [A137] • Grey Plover (<i>Pluvialis squatarola</i>) [A141] • Knot (<i>Calidris canutus</i>) [A143] • Sanderling (<i>Calidris alba</i>) [A144] • Dunlin (<i>Calidris alpina</i>) [A149] • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] • Redshank (<i>Tringa totanus</i>) [A162] • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] • Roseate Tern (<i>Sterna dougallii</i>) [A192] • Common Tern (<i>Sterna hirundo</i>) [A193] • Arctic Tern (<i>Sterna paradisaea</i>) [A194] • Wetland and Waterbirds [A999] | Ca. 15km east of the proposed development site and hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |
| North Bull Island SPA (004006) | <ul style="list-style-type: none"> • Light-bellied Brent Goose (<i>Branta bernicla hrota</i>) [A046] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Teal (<i>Anas crecca</i>) [A052] • Pintail (<i>Anas acuta</i>) [A054] • Shoveler (<i>Anas clypeata</i>) [A056] • Oystercatcher (<i>Haematopus ostralegus</i>) [A130] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • Grey Plover (<i>Pluvialis squatarola</i>) [A141] • Knot (<i>Calidris canutus</i>) [A143] • Sanderling (<i>Calidris alba</i>) [A144] • Dunlin (<i>Calidris alpina</i>) [A149] • Black-tailed Godwit (<i>Limosa limosa</i>) [A156] • Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] • Curlew (<i>Numenius arquata</i>) [A160] • Redshank (<i>Tringa totanus</i>) [A162] • Turnstone (<i>Arenaria interpres</i>) [A169] • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] | Ca. 18km north-east of the proposed development site and is hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |

| Name | Site Code | Approximate distance from the Proposed Development Site (km) | Pathway (Yes or No) |
|--|---|--|--|
| | <ul style="list-style-type: none"> Wetland and Waterbirds [A999] | | |
| National Sites | | | |
| Grand Canal pNHA (002104) | <ul style="list-style-type: none"> Otter, Smooth newt (<i>Lissotriton vulgaris</i>), Opposite-leaved pondweed (<i>Groenlandia densa</i>) | Ca. 1.6km north of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Liffey Valley pNHA (000218) | <ul style="list-style-type: none"> River habitat and species | Ca. 4.6km north of the proposed development site | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |
| Lugmore Glen pNHA (001212) | <ul style="list-style-type: none"> Woodland habitat | Ca. 5.3 north-east of the proposed development | No – no viable pathway between the proposed development and the pNHA |
| Slade of Saggart and Crooksling Glen pNHA (000211) | <ul style="list-style-type: none"> Wooded river valley and wetland system | Ca. 5.5km south of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Rye Water Valley /Carton pNHA (001398) | No site synopsis available | Ca. 6.1km north-west of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Royal Canal pNHA (002103) | <ul style="list-style-type: none"> Canal habitat and species | Ca. 6.4km north of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Dodder Valley pNHA (000991) | <ul style="list-style-type: none"> River habitat and species | Ca. 7.4km south-east of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Glenasmole Valley pNHA (001209) | No site synopsis available | Ca. 7.8km south-east of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Kilteel Wood pNHA (001394) | <ul style="list-style-type: none"> Woodland habitat | Ca. 10.5km south-west of the proposed development site | No – no viable pathway between the proposed development and the pNHA |

| Name | Site Code | Approximate distance from the Proposed Development Site (km) | Pathway (Yes or No) |
|-------------------------------------|--|---|--|
| Red Bog, Kildare pNHA (000397) | No site synopsis available | Ca. 15km south-west of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Poulaphouca Reservoir pNHA (000731) | No site synopsis available | Ca. 15km south of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| Fitzsimon's Wood pNHA (001753) | <ul style="list-style-type: none"> Woodland habitat | Ca. 15km south-east of the proposed development site | No – no viable pathway between the proposed development and the pNHA |
| North Dublin Bay pNHA (000206) | No site synopsis available | Ca. 15km east of the proposed development site and is hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |
| South Dublin Bay pNHA (000210) | No site synopsis available | Ca. 15.5km east of the proposed development site and is hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |
| Dolphin Dublin Docks pNHA (000201) | No site synopsis available | Ca. 17km east of the proposed development site and is hydrologically connected via the Baldonnell Stream and River Liffey (hydrological route ca. 25km) | Yes – a hydrological pathway exists via Baldonnell Stream and the River Liffey |



Legend

- Planning Application Boundary
- - - 15km Buffer from Substation boundary
- WFD - River Water Bodies - Hydrological Route
- ▨ Special Protection Area (SPA)
- ▨ Special Area of Conservation (SAC)
- ▨ proposed Natural Heritage Area (pNHA)
- ▨ Natural Heritage Area (NHA)

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDANCE SURVEY DATUM AT MALIN HEAD

| Rev | Date | Description | By | Chkd. |
|-----|------------|-------------|-----|-------|
| A | 23/05/2023 | Final issue | S.P | C.N |

Client:

Project: Profile Park power plant - Substation Application

Title: Figure 12-1: Designated Sites

Scale @ A3: 1:111,166

Prepared by: S.Pezzetta Checked by: C.Naughton Date: May 2023

TOBIN
CONSULTING ENGINEERS
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11069-003-D.S-BUFF15-TOB-A Draft: A

12.5.1.5 Data from Ecological Stakeholders

The desk study included a review of available data from ecological stakeholders and NGOs and the findings are summarised hereunder.

12.5.1.6 National Biodiversity Data Centre

A search of the NBDC database⁶ was undertaken in December 2022, for protected flora and fauna, and plant species listed under the Third Schedule of the Birds and Natural Habitats Regulations (2011) within the 2km Irish Grid square O03F, which encompasses the proposed development site (refer to Table 12-3).

Table 12-4: Previous Records of Protected Fauna and Flora within the 2km grid square, O03F

| Species | Date of last record | Designation | Location in Relation to the Proposed Development Site |
|--|---------------------|---------------------------------------|---|
| Black-headed Gull (<i>Larus ridibundus</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Great Black-backed Gull (<i>Larus marinus</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Great Cormorant (<i>Phalacrocorax carbo</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Herring Gull (<i>Larus argentatus</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Lesser Black-backed Gull (<i>Larus fuscus</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Little Grebe (<i>Tachybaptus ruficollis</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Mallard (<i>Anas platyrhynchos</i>) | 31/12/2011 | Annex II, Annex III, WA, Amber Listed | Previously recorded within the 2km square grid (O03F) which encompasses the proposed development site |
| Mute Swan (<i>Cygnus olor</i>) | 31/12/2011 | WA, Amber Listed | Previously recorded within the 2km square grid (O03K) which encompasses the proposed development site |
| Northern Lapwing (<i>Vanellus vanellus</i>) | 31/12/2011 | Annex II, WA, Red Listed | Previously recorded within the 2km square grid (O03K) which encompasses the proposed development site |
| Tufted Duck (<i>Aythya fuligula</i>) | 31/12/2011 | Annex II, Annex III, WA, Amber Listed | Previously recorded within the 2km square grid (O03K) which encompasses the proposed development site |
| Daubenton's Bat (<i>Myotis daubentonii</i>) | 19/08/2013 | Annex IV, WA | A number of previous recordings located ca. 500m east, 800m south and 700 north-west of the proposed development site |
| Brown Long-eared Bat (<i>Plecotus auritus</i>) | 25/08/2002 | Annex IV, WA | A number of previous recordings located ca. 500m east, 800m south and 700 north-west of the proposed development site |

⁶ Accessed [December 2022] via: <https://maps.biodiversityireland.ie/Map>

| Species | Date of last record | Designation | Location in Relation to the Proposed Development Site |
|---|---------------------|--------------|---|
| Lesser Noctule (<i>Nyctalus leisleri</i>) | 25/08/2002 | Annex IV, WA | A number of previous recordings located ca. 500m east, 800m south and 700 north-west of the proposed development site |
| Pipistrelle (<i>Pipistrellus pipistrellus sensu lato</i>) | 25/08/2002 | Annex IV, WA | A number of previous recordings located ca. 500m east, 800m south and 700 north-west of the proposed development site |
| Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>) | 19/08/2013 | Annex IV, WA | A number of previous recordings located ca. 500m east and 700 north-west of the proposed development site |
| Pine Marten (<i>Martes martes</i>) | 25/06/2020 | WA | A previous recording of the species recorded ca. 1.4km north of the proposed development site. |
| West European Hedgehog (<i>Erinaceus europaeus</i>) | 03/05/2012 | WA | Closest previous recording located ca. 800m south of the proposed development site |

12.5.1.7 Bat Landscape Tool

A review of the Bat Landscapes Tool⁶ was utilised to determine the habitat suitability of the study area to support protected bat species. The bat ‘habitat suitability’ index is the research outcome of a study by Lundy *et al.* (2011) examining the relative importance of landscape and habitat associations across Ireland for bats. The ‘habitat suitability’ index ranges from 0 to 100 with 0 being least favourable and 100 most favourable for various bat species. The results of the Bat Landscape Tool are also shown in Table 12-5. The habitat suitability score for all bat species was 26.67 (moderate suitability).

A score of 26.67 lies within the middle rating (21.33 to 28.11) of the habitat suitability index for all bat species⁶⁶. This rating suggests that there is moderate suitable habitat and roosting sites for bats within the proposed development site. This however was checked during field surveys (Section 12.5.2.11).

Table 12-5: Results of the Bat Landscape Tool

| Species | Landscape Suitability Index |
|--|-----------------------------|
| All Bat species | 26.67 |
| Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) | 35 |
| Brown long-eared bat (<i>Plecotus auratus</i>) | 40 |
| Common pipistrelle (<i>Pipistrellus pipistrellus</i>) | 41 |
| Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) | 0 |
| Lesser noctule (<i>Nyctalus leisleri</i>) | 41 |
| Whiskered bat (<i>Myotis mystacinus</i>) | 19 |
| Daubenton’s bat (<i>Myotis daubentoniid</i>) | 19 |
| Nathusius’s pipistrelle (<i>Pipistrellus nathusli</i>) | 19 |
| Natter’s bat (<i>Myotis nattereri</i>) | 26 |

12.5.1.8 Surface Water Features – Water Framework Directive

The Baldonnell Stream (Liffey_170) is located approximately 120m east of the proposed development site. The watercourse is assigned ‘Poor’ WFD status for the 2016-2021 period. The Baldonnell Stream flows in a northerly direction before flowing into the Grifeen River (Liffey_170) (IE_EA_09L12100) approximately 2km downstream of the proposed development

site. The watercourse then flows into the River Liffey (Liffey_180), approximately 6km downstream, which is also assigned 'Poor' WFD status for the 2016-2021 period. The River Liffey discharges into the Liffey Estuary, approximately 24km downstream of the proposed development site, and is assigned 'Good' WFD status 2016-2021 at the Liffey Estuary Upper (IE_EA_090_0400) and 'Moderate' WFD status at the Liffey Estuary Lower (IE_EA_090_0300).

12.5.1.9 Inland Fisheries Ireland

Inland Fisheries Ireland undertook electrofishing at 60 sites within the River Liffey catchment in 2019 to assess the status of fish stocks (IFI, 2019)⁷. Two survey sites were undertaken along the Grifeen River (Liffey_170) at Vesey Park (Site - 52) (ca. 5.4km downstream) and at Grifeen Avenue (Site - 53) (ca. 3.6km downstream of the proposed development). Fish species recorded at the two sites included brown trout (*Salmo trutta*), European eel (*Anguilla Anguilla*) and three-spined stickleback (*Gasterosteus aculeatus*), and both sites were assigned 'Moderate' fish ecological status.

12.5.1.10 Review of Previous Ecological Assessments

A review of past ecological surveys which were carried out in proximity to the proposed development was also undertaken and are summarised hereunder.

Profile Park Power Plant (Planning Ref: SD21A/0167)

Green Ideas Limited have been granted planning for the development of a 125 MW dual fuel gas fired power plant located immediately east of the proposed development site. Ecological field surveys were undertaken within the site to inform the planning application (TOBIN, 2021).

- No invasive or protected plant species were recorded within the power plant site during surveys.
- No evidence of protected terrestrial mammal activity was recorded during the surveys.
- A pair of breeding lapwings and their nest were recorded just outside the north-western boundary of the power plant site.
- A bat activity survey was undertaken which found low levels of bat activity around the site.

Kilcarbery Substation and Transmission Lines (Planning Ref: 312793)

Vantage Data Centers Dublin 11 Limited are seeking permission for the development of the Kilcarbery Substation and Transmission Line located immediately west of the proposed development site. Ecological field surveys were undertaken to inform their planning application, and are summarised hereunder (Neo Environmental Ltd, 2021).

- No protected or invasive plant species were recorded within the development site.
- A bat activity survey was undertaken, and a static bat detector was employed, and both surveys concluded that low levels of commuting/foraging bats use the site.
- No evidence of any other protected species was recorded.

Data Centre Development (Planning Ref: SD20A/0121)

Scott Cawley Ltd. were commissioned to undertake an ecological impact assessment to inform an Environmental Impact Assessment Report for the development of a Data Centre located approximately 320m north-west of the proposed development site (Marston Planning

⁷ Accessed [January 2022] via [Eastern River Basin District river surveys 2019 | Inland Fisheries Ireland \(wfdfish.ie\)](https://www.wfdfish.ie/Eastern-River-Basin-District-river-surveys-2019)

Consultancy, 2020). Similarly, a wide suite of ecological surveys were undertaken and the main findings are summarised hereunder.

- The Data Centre development site predominantly comprises agricultural grassland. No Annex I habitats or protected plant species were recorded within the site. The invasive plant species, Spanish blue bell (*Hyacinthoides hispanica*) was recorded within a garden of a derelict farmhouse, which is located approximately 870m north-west of the development site.
- Otter was recorded swimming in the Baldonnell Stream, approximately 600m north-west of the proposed development site. No bat roosts were confirmed during bat surveys. Two species of bat; Leisler's bat and common pipistrelle were recorded during emergence surveys. No signs of badger or other protected mammal species were recorded during the surveys.
- Notable bird species recorded during their bird surveys included kingfisher (*Alcedo atthis*) and grey wagtail (*Motacilla cinerea*). Two kingfisher were recorded along the Baldonnell Stream located within the Data Centre site. Grey wagtail was regularly recorded along the riverbank during winter surveys.

12.5.2 Output of Field Surveys

The findings of the ecological field surveys undertaken in January are detailed hereunder.

12.5.2.1 Habitats and Flora

All habitats were classified according to Fossitt (2000) during the ecological walkover of the proposed development site. The habitats within the proposed development footprint are described herein and illustrated on Figure 12-2. An assessment of the habitats was undertaken in accordance with the NRA (2009) guidelines.

12.5.2.2 Mosaic of Wet Grassland (GS4) and Spoil and Bare Ground (ED2)

The proposed development site has recently been disturbed by nearby construction works, which has resulted in the clearing of habitat and the stockpiling of sediment and spoil in areas. This has resulted in the site currently comprising of a mosaic of spoil and bare ground (ED2), in areas that have been cleared, and wet grassland (GS4) in areas which have not been disturbed (refer to Photo 1). Plant species recorded within the areas of wet grassland included soft rush (*Juncus effusus*), dandelion (*Taraxacum vulgaria*), ribwort plantain (*Plantago lanceolata*), silverweed (*Potentilla anserina*) and meadowsweet (*Filipendula ulmaria*).

As mentioned in Section 12.5.1.10, it's important to note, that during ecological surveys carried out by TOBIN in 2021, a lapwing nest was recorded within the wet grassland habitat in proximity to the proposed development site. In addition, during the current survey (2023), possible snipe (*Gallinago gallinago*) tracks were recorded adjacent to the proposed development site (refer to Section 12.5.2.13). The wet grassland habitat is therefore likely to support a number of protected bird species such as snipe and lapwing.

Therefore, despite the disturbed nature of the habitat, there is potential that the areas of wet grassland provide suitable habitats for protected bird species and the habitat was assessed as being Local Importance (higher value).



Photo 1: Mosaic of Wet Grassland and Bare Ground

12.5.2.3 Building and Artificial Surfaces (BL3)

The proposed grid connection will be located within the road (Falcon Avenue) located immediately north of the proposed development site. The road comprises tarmacadam and concrete verges.

The habitat was assessed as being of Local Importance (lower value).

12.5.2.4 Dry Meadows and Grassy Verges (GS2)

The proposed construction compound and laydown area currently comprises dry meadow (GS2) (refer to Photo 2). Plant species recorded within the grassland include Yorkshire-fog (*Holcus lanatus*), smooth-meadow grass (*Poa pratensis*), cock's foot (*Dactylis glomerata*), white clover (*Trifolium spp.*) nettle (*Urtica dioica*) and ribwort plantain.

The habitat was assessed as being of Local Value (lower value).



Photo 2: Dry Meadow at the Proposed Construction Compound

12.5.2.5 Hedgerow (WL1) and Treeline (WL2)

A hedgerow (WL1) and treeline (WL2) were recorded along the eastern boundary of the construction compound. They are separated from the dry meadow by a drainage ditch that runs parallel. The hedgerow is roughly 4m in height and starts at the north-eastern corner of the construction compound. The hedgerow then transitions into a treeline, ranging between 5-8m in height, along the border of the construction compound. Both features are dominated with hawthorn (*Crataegus monogyna*) with abundant ash (*Fraxinus excelsior*), bramble (*Rubus fruticosus*) and ivy (*Hedera hibernica*) also present. Both the sections of hedgerow and treeline are well established and dense, with no signs of management.

The well-established and dense nature of the hedgerow and treeline are likely to provide important nesting and foraging habitat for bird species as well as important foraging and commuting habitats for bat species.

Both the hedgerow and treeline habitats were assessed as being of Local Importance (higher value).



Photo 3: Treeline Along the Eastern Boundary of the Construction Compound

12.5.2.6 Depositing Lowland River (FW2)

The Baldonnell Stream (Liffey_170) is located approximately 120m east of the proposed development site. The watercourse flows in a north-westerly direction before discharging into the Grifeen River located approximately 2km downstream of the proposed development site. Within the study area, the Baldonnell Stream is approximately 1m wide with steep banks ranging between 4 to 5m in height. Rock gabion baskets are present along the lower section of the stream bank.

The watercourse has a slow flow and is heavily overgrown with mats of watercress (*Nasturtium officinale*), brooklime (*Veronica beccabunga*) and soft rush (*Juncus effusus*). The stream substrates consist of fine sediment (70%) with some small pebbles (30%) present in areas. The stream has been heavily modified and is culverted to the south of the site underneath the adjacent development, Digital Realty Profile Park, and is also culverted underneath the road located immediately north-east of the proposed development site and again underneath Profile Park Road located approximately 165m north of the proposed development site. The stream at this location was assessed as having low fisheries value due to the heavily modified nature of the watercourse, the presence of culverts and the high level of sedimentation present.

No evidence of otter, including holts and resting sites, were recorded along the watercourse, both 150m upstream and downstream of the proposed development. Considering the highly modified nature of the watercourse, it is likely that the stream, at this location, provides only sub-optimal habitat for otter. In addition, no suitable nesting habitat to support kingfisher was identified along the stream within the proposed development study area.

As noted in Section 12.5.1.10, otter, kingfisher and grey wagtail have all previously been recorded within Baldonnell Stream approximately 900m downstream of the proposed development site (Marston Planning Consultancy, 2020).

The watercourse was assessed as having Local Importance (higher value) as although the stream is considered to be of low ecological value at the proposed development site location, the stream supports a number of protected species further downstream.

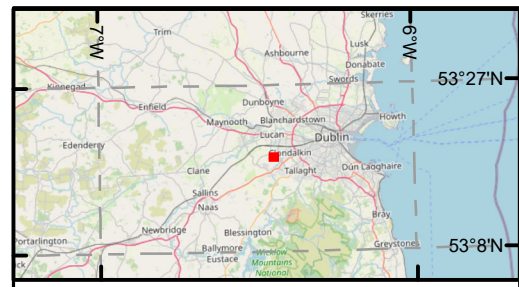
12.5.2.7 Drainage Ditch (FW4)

A drainage ditch runs along the eastern boundary of the proposed construction compound site, parallel to the hedgerow and treeline. The drainage ditch is heavily overgrown with vegetation which included plant species such as willowherb (*Chamaenerion angustifolium*), bramble, soft rush, ivy and several grass species. The drainage ditch was largely dry, with small pockets of stagnant water present in areas. Although none were recorded, there is potential that the drainage ditch might support common frog (*Rana temporaria*).

The habitat was assessed as being of Local Value (higher value).



Photo 4: Drainage Ditch Located at the Eastern Boundary of the Construction Compound



Legend

- Planning Application Boundary
- Habitats**
- FW4 - Drainage ditches
- WL1 - Hedgerows
- WL2 - Treelines
- BL3 - Buildings and artificial surfaces
- ED1 - Exposed sand, gravel or till
- GS4/ED2 - Mosaic of Wet Grassland and Spoil and bare ground
- ED3 - Recolonising bare ground
- GS2 - Dry meadows and grassy verges
- WS1 - Scrub

NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

| Rev | Date | Description | By | Chkd. |
|-----|------------|-------------|-----|-------|
| A | 23/05/2023 | Final issue | S.P | C.N |

Client:

Project: Profile Park power plant - Substation Application

Title: Figure 12-2: Habitats Map

Scale @ A3: 1:3,000

Prepared by: S.Pezzetta Checked by: C.Naughton Date: May 2023

TOBIN
CONSULTING ENGINEERS
Tel: +353-(0)1-8030406
Email: info@tobin.ie
www.tobin.ie

Map Ref: 11069-004-HAB-S.BO-TOB-A Draft: A

12.5.2.8 Fauna

Results of protected fauna species recorded during the field surveys is provided hereunder.

12.5.2.9 Badger

Badgers and their setts are protected under the Wildlife Acts.

No evidence of badger, including their setts, were recorded within the proposed development site boundary, or within a 150m buffer of the development site. There are no hedgerows, treelines or embankments present within the proposed Baldonnell substation site that are the favoured habitat for the establishment of setts by badgers (Smal, 1995 & Byrne *et al.*, 2012). Additionally, there have been no previous records of badger recorded within the site. Therefore, badger are not considered a KER.

12.5.2.10 Otter

Otters and their breeding and resting places are protected under the Wildlife Acts and under the EU Habitat Directive.

An otter survey was undertaken along the Baldonnell Stream, within the proposed development site and 150m upstream and downstream. No evidence of otter or their resting or breeding sites were recorded during the survey. Otter are unlikely to commute and forage along the section of the Baldonnell Stream located in proximity to the proposed development site due to the highly modified nature of the watercourse and the large sections of culverts present both upstream and downstream. There is potential however that otter may occur further downstream. As noted in Section 12.5.1.10, Scott Cawley recorded an otter swimming in the Baldonnell Stream at a location approximately 600m north-west of the proposed development site (Marston Planning Consultancy, 2020).

The local otter population located downstream are assessed as being of Local Importance (higher value).

12.5.2.11 Bats

All bat species and their roost sites are protected under the Wildlife Acts. There is additional protection for lesser horseshoe bat (*Rhinolophus ferrumequinum*) which is listed as an Annex II species under the EU Habitats Directive.

No bat roost features were recorded within the proposed development site. A well-established hedgerow and treeline occurs along the eastern boundary of the proposed construction compound. None of the trees within the hedgerow and treeline were identified as having bat roost potential, however there is potential that bats may forage or commute along this hedgerow and treeline.

The local population of bat was assessed as being of Local Importance (higher value).

12.5.2.12 Other Small Mammals

There is potential that the proposed development site may support other smaller protected mammal species such as hedgehog, pygmy shrew, Irish stoat and Irish hare. No evidence of the above listed species, or any other protected mammal species were recorded during the field

surveys, however, the grassland habitats within the proposed development site may be utilised by these species, at least on occasion.

The local small mammal population was assessed as being of Local Importance (higher value).

Evidence of fox, which included tracks and scat, was recorded to the west of the proposed development site. Fox are not currently protected under National law, however there is an obligation to protect biodiversity within Ireland under the Convention on Biological Diversity.

12.5.2.13 Birds

All wild birds and their nests are protected under the Wildlife Acts. Additionally, a number of bird species are also protected under the EU Birds Directive (79/409/EEC).

During the walkover survey a single buzzard (*Buteo buteo*) was recorded soaring over the proposed development site. Buzzard are Green Listed in Ireland (Gilbert *et al.*, 2021).

Other evidence of bird activity included tracks, likely belonging to snipe (refer to Photo 5), recorded immediately east of the proposed development site. Snipe have previously been recorded using the site and surrounding area (TOBIN, 2021). Snipe are Red Listed in Ireland (Gilbert *et al.*, 2021).

As noted, in Section 12.5.1.10, a lapwing nest with eggs was identified in close proximity to the proposed development during a survey undertaken in 2021 (TOBIN, 2021). As the ecology survey for the proposed development was undertaken in winter, breeding activity by lapwing could not be established. However, the previous record of a nest within the area, suggests the proposed development site is likely to provide suitable nesting habitat for lapwing. Lapwing are Red Listed and exhibit a continued severe population decline in Ireland (Gilbert *et al.*, 2021).

The local breeding and wintering bird population was assessed as being of Local Importance (higher value).



Photo 5: Possible Snipe Tracks

12.5.2.14 Herpetofauna and Reptile Species

The Wildlife Acts provides protection to Ireland's only reptile; common lizard (*Zootoca vivipara*) and two amphibian species, common frog and smooth newt (*Lissotriton vulgaris*).

No suitable habitat to support common lizard, or smooth newt was recorded within the proposed development site. Baldonnell Stream and the drainage ditch, however, are likely to provide some suitable habitat for common frog.

Local common frog population are assessed as being of Local Importance (higher value).

12.5.2.15 Aquatic Species

The Baldonnell Stream was assessed as having no suitable habitat to support protected fish species, white-clawed crayfish or lamprey species. The stream at this location was assessed as having low fisheries value due to the heavily modified nature of the watercourse, the presence of culverts and the high levels of sedimentation present. Further downstream however, within the Grifteen River, the fish species; three-spined stickleback, brown trout, and eel are known to occur (IFI, 2019⁷).

The downstream fish population was assessed as being of Local Importance (higher value).

12.5.3 Summary of Ecological Evaluation

Following a review of the existing environment presented above, KERs within the Zol of the proposed development site were evaluated in accordance with the evaluation criteria set out in Table 12-1 and Table 12-2 Table 12-2 above. Consideration of the existing baseline condition / population stability, conservation status, rarity and legal protection of the KERs was

undertaken. A summary of the ecological valuation and identification of KERs is provided in line with the NRA guidance (NRA, 2009), identified ecological features which are assessed as being below Local Importance (higher value) are not selected as KERs.

Table 12-6. In line with the NRA guidance (NRA, 2009), identified ecological features which are assessed as being below Local Importance (higher value) are not selected as KERs.

Table 12-6: Summary of Key Ecological Receptors

| Site/Habitat/Species | NRA Ecological Evaluation | KER | Rationale for Inclusion |
|---|---------------------------------|-----|--|
| Designated Sites | | | |
| South Dublin Bay SAC (000210) | International | Yes | Hydrological connectivity was identified between the proposed development site and the SAC. |
| South Dublin Bay and River Tolka Estuary SPA (004024) | International | Yes | Hydrological connectivity was identified between the proposed development site and the SPA. |
| North Dublin Bay SAC (000206) | International | Yes | Hydrological connectivity was identified between the proposed development site and the SAC. |
| North Bull Island SPA (004006) | International | Yes | Hydrological connectivity was identified between the proposed development site and the SPA. |
| All other European Sites | International | No | No source-pathway-receptor links exist. |
| Liffey Valley pNHA (000128) | National | Yes | Hydrological connectivity was identified between the proposed development site and the pNHA. |
| South Dublin Bay pNHA (000210) | National | Yes | Hydrological connectivity was identified between the proposed development site and the pNHA. |
| North Dublin Bay pNHA (000206) | National | Yes | Hydrological connectivity was identified between the proposed development site and the pNHA. |
| Dublin Docks pNHA (000201) | National | Yes | Hydrological connectivity was identified between the proposed development site and the pNHA. |
| All other nationally designated sites | National | No | No source-pathway-receptor links exists. |
| Habitats and Flora | | | |
| Mosaic of wet grassland (GS4) and spoil and bare ground (ED2) | Local Importance (higher value) | Yes | The proposed development will result in the permanent loss of habitat. The habitat may support a number of protected bird species. |
| Depositing/ lowland rivers (FW2) | Local Importance (higher value) | Yes | The watercourse supports protected species downstream and occurs within the Zol of the proposed development. |
| Dry meadow (GS2) | Local Importance (lower value) | No | Habitat is of Local Importance (lower value) and is therefore not considered a KER. |
| Building and artificial surfaces (BL3) | Local Importance (lower value) | No | Habitat is of Local Importance (lower value) and is therefore not considered a KER. |
| Hedgerows (WL1) and treelines | Local Importance (higher value) | No | The proposed development will not result in the loss of the habitat. |
| Drainage ditches (FW4) | Local Importance (higher value) | Yes | The watercourse occurs within the Zol of the proposed development. |
| Fauna | | | |
| Otter | Local Importance (High value) | Yes | Hydrological link. Potential for indirect effect via a degradation in water quality. |

| Site/Habitat/Species | NRA Ecological Evaluation | KER | Rationale for Inclusion |
|---------------------------------------|-------------------------------|-----|---|
| Badger | Local Importance (High value) | No | Unlikely to occur within Zol of the proposed development site. |
| Other small, protected mammal species | Local Importance (High Value) | Yes | Potential for the construction works to result in the disturbance of small, protected mammal species. |
| Breeding and wintering bird species | Local Importance (High value) | Yes | Potential for the construction works to result in the disturbance of breeding/wintering bird species. |
| Amphibian species | Local Importance (High value) | Yes | Potential for the construction works to result in impacts on protected amphibian species. |
| Fish species | Local Importance (High value) | Yes | Hydrological link. Potential for indirect impacts via a degradation of water quality. |

12.6 IMPACT ASSESSMENT

The following sections present the assessment of impacts (likely significant effects) on biodiversity within the Zol of the proposed development. Likely significant effects are presented in relation to the construction, operational and decommissioning phases of the proposed development. The likely significant effects described in this section are the ecological impacts predicted due to the proposed development prior to the consideration of any appropriate mitigation measures (refer to Section 12.7 for further details on mitigation measures). As per NRA guidance (NRA, 2009), likely significant effects have only been assessed for KERs as listed in Table 12-6. Residual effects describe potential effects that remain after all impacts and mitigation measures are considered.

12.6.1 Do Nothing Effects

If the proposed development does not take place (do nothing scenario) the existing baseline conditions detailed within Section 12.5 are expected to remain. The proposed development site will continue to contain habitats and species currently present within the study area and will continue to recolonise naturally.

12.6.2 Assessment of Impacts on Designated Sites

12.6.2.1 European Sites

TOBIN prepared an AA Screening Report (which accompanies this EIAR in the Planning Application package) which assessed the potential for the proposed development to have likely significant effects on European sites(s) either alone or in-combination with other plans and projects. The AA Screening Report identified a hydrological pathway between the proposed development and four European sites, namely; South Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, North Dublin Bay SAC and North Bull Island SPA. The AA Screening Report concluded that despite the hydrological connectivity, there is no potential for the proposed development to result in likely significant effects on the qualifying interests/special conservation interest of the four European sites, due to; the separation distance (ca. 120m) between the proposed development site and Baldonell Stream, the lack of any instream works within the watercourse, the significant downstream hydrological distance to the European sites (ca. 30km), coupled with the small scale and temporary nature of the proposed construction works associated with the proposed development.

The screening assessment concluded that the proposed development, either alone or in combination with other plans and projects, will not result in likely significant effects on any European site, in view the conservation objectives of the site, and therefore a stage 2 Appropriate Assessment was not required.

12.6.2.2 National Sites

The proposed development is also hydrologically linked to four nationally designated sites; Liffey Valley pNHA, South Dublin Bay pNHA, North Dublin Bay pNHA and Dublin's Docks pNHA, via the Baldonnell Stream and River Liffey. The four sites are located within the same setting as the above-mentioned Dublin Bay European sites.

Due to the similar location of the national sites to the above mentioned European sites, there is similarly no potential for water quality impacts on the sites due to the lack of instream works, the separation distance (ca. 120m) between the proposed development site and the Baldonnell Stream, the downstream hydrological distance (ca. 30km), coupled with the small scale and temporary nature of the proposed construction works associated with the proposed development. No impacts on the four pNHA sites are anticipated.

No viable source-pathway-receptor links were identified between the proposed development site and any other site of Nature Conservation. Thus, there is no potential for impacts on any nationally protected sites.

12.6.3 Construction Phase Impacts

Impacts associated with the construction phase on the receiving environment are discussed hereunder.

12.6.3.1 Impacts to Habitats and Flora

12.6.3.2 Habitat Loss

The overall proposed development site is approximately 2.6 (ha) in size and will result in the permanent loss of habitat of a similar footprint.

The development of the proposed substation will result in a permanent loss of approximately 0.2ha of the mosaic habitat comprised of wet grassland and bare ground. The temporary construction compound will result in a temporary loss of approximately 1.2ha of dry meadow habitat. Following the completion of the construction phase, the construction compound infrastructure will be dismantled and removed offsite. No areas of treeline or hedgerow will be removed to facilitate the proposed development. No other areas of habitat will be lost to facilitate the proposed development.

Although the mosaic habitat of wet grassland may support some protected bird species such as snipe and lapwing, the habitat is generally considered to be of low value due to the low species diversity and disturbed nature of the habitat. Wet grassland habitat is common and widespread within the surrounding environment, and as such, the loss of the habitats will not result in significant effects on the receiving environment. Similarly, dry meadow habitat is widespread and commonly found within the wider environment.

The permanent loss of habitat within the proposed development site during the construction phase would result in a **permanent, imperceptible, negative effect** on wet grassland and spoil and bare ground habitat at a local geographical scale.

12.6.3.3 Habitat Degradation due to Water Quality Impacts

During the construction phase of the proposed development, there is the risk for accidental spills and leaks of oils, fuels and chemicals from storage areas, plant and equipment to impact surrounding habitats. The pouring of concrete will be required to facilitate the foundation works associated with the development. In addition, site clearance, excavation activities and the stockpiling of material have the potential to result in the runoff of sediment if not appropriately managed. The Baldonnell Stream is located approximately 120m east of the proposed works. Despite the setback distance, the risk of sediment and contaminated runoff discharging to the watercourse cannot be ruled out.

The release of contaminants and increased silt loading in watercourses can stunt aquatic plant growth, limit dissolved oxygen capacity and overall reduce the ecological quality of watercourses, with the most critical period associated with low flow conditions.

Therefore, water quality impacts on the Baldonnell Stream could result in **short-term, slight negative effects** on aquatic KERs present, at a **local geographical scale**.

12.6.3.4 Habitat Degradation due to Air Quality Impacts (Dust)

Construction activities, such as excavation works, moving of material and trackout⁸, can result in the generation of dust. The deposition of dust on flora or habitats can inhibit effective photosynthesis and transpiration (Farmer, 1993). The Institute of Air Quality Management provide guidelines; '*Guidance on the Assessment of Dust from Demolition and Construction*' (Holman *et al.*, 2014), which prescribes potential dust emission risk classes to ecological receptors (i.e. habitats that might be sensitive to dust). Following the guidance characterisation, considering the size of the proposed development, the scale of the earthworks were considered 'Small' (total site area <2,500m²), with less than five earth moving vehicles at one time. The guidelines also indicate that an assessment will be required where there is 'an ecological receptor within 50m of the boundary of a site; or 50m of the route(s) used by construction vehicles'.

There are no ecological receptors within 50m of the proposed development. Habitats within 50m of the proposed development were all assessed as being of Local Importance, and there are no protected habitats located within 50m of the proposed development site. Dust impacts are therefore likely to result in a **short-term, imperceptible negative effect** on the KER habitats at a **local geographic scale**.

12.6.3.5 Habitat Degradation due to dispersion of Invasive Plant Species

No non-native invasive plant species listed under Part 1 of the Third Schedule of S.I No. 477 of 2011 were recorded within the proposed development site during the field surveys. There is potential, however, for the construction works to result in the introduction of invasive non-native species if not appropriately managed. The effects of introducing non-native invasive plant species to ecologically important habitat areas during the construction works, have the potential to result in **medium term, slight negative effects** on KER habitats at a **local geographic scale**.

⁸ Trackout - the transport of dust and dirt from the construction site onto the public road network.

12.6.3.6 Impacts to Fauna

Potential construction phase impacts on fauna within the receiving environment is discussed hereunder.

12.6.3.7 Otter

Loss of Habitats

No evidence of otter, including otter holts or layups/couches, were recorded along the Baldonnell Stream within the Zol of the proposed development. No instream works will occur within the Baldonnell Stream. The proposed works will not result in any loss of important habitat for otter.

Disturbance/displacement

Construction works can result in disturbance impacts for otter to a distance of up to 150m, as per the NRA guidelines (NRA, 2006a). As noted, no otter holts or couches were identified within the Zol of the proposed development site. In addition, Baldonnell Stream was identified as being sub-optimal for otter, due to the modified nature and low fishery value of the watercourse. There is therefore no potential for direct disturbance of otter during the construction works.

There is potential, however, that water quality impacts within Baldonnell Stream may negatively impact otter which forage further downstream. Chanin (2003) notes that '*Otters are not directly affected by water quality and will forage in conditions that seem extremely unpleasant to humans, however, where deterioration in water quality leads to a deterioration in food supply there will clearly be an indirect effect.*'

A degradation of otter feeding resources located downstream would constitute a **short-term, slight negative effect** on otter at a **local geographical scale**.

12.6.3.8 Other Mammal Species

There is potential that the proposed development site may support other small, protected mammal species such as hedgehog, pygmy shrew or Irish hare. However, considering the availability of higher valuable habitat within the surrounding environment and the lack of evidence of such species within the site, it is considered that the proposed development site is unlikely to support significant numbers of protected small mammals.

The proposed construction works have the potential to result in the loss of habitat and disturbance of such species. However, given the low number of species likely to be using the site and the mobile nature of these species, the clearance of vegetation and disturbance is likely to result in **short-term, slight, negative effects** on the local population of small mammal species, at a **local geographical scale**.

12.6.3.9 Breeding and Wintering Bird Species

Loss of Habitat

The proposed construction works will result in the permanent loss of approximately 0.2ha of habitat which currently comprises a mosaic of wet grassland and bare ground. The areas of undisturbed wet grassland may provide some suitable habitat for ground nesting bird species. However, considering the small area of habitat which will be lost and the availability of

alternative habitat within the surrounding area, the loss of 0.2ha habitat is unlikely to significantly impact local bird populations.

The loss of habitat is likely to have a **permanent, imperceptible, negative effect** on the local bird population at a **local geographical scale**.

Disturbance/displacement

Construction related noise and the physical presence of machinery and construction personnel can result in the disturbance of birds from habitats located in close proximity to the proposed development site. The proposed construction works may result in short-term disturbance to breeding and wintering bird species which forage within the surrounding area; however, considering the small scale and short-term nature of the proposed development, it is likely that birds will acclimatise to human presence over time.

The disturbance of bird species is likely to have a **short term, imperceptible effect** on the local bird population at a **local geographical scale**.

12.6.3.10 Fish and Aquatic Species

The Baldonnell Stream is likely to support common frog in proximity to the proposed development site and fish species further downstream. The proposed construction works have the potential to result in a degradation of water quality, in the absence of mitigation measures. A degradation in water quality has the potential to result in **short-term, slight, negative effect** on fisheries and the local frog population at a **local geographical scale**.

12.6.4 Operational Phase Impacts

Details of the operational phase of the proposed development can be found in Chapter 3 (Description of the Development). Impacts on biodiversity associated with the operational phase are discussed hereunder.

12.6.4.1 Habitat Degradation due to Surface Water Quality Impacts

Stormwater

Surface water runoff will be generated from all surfaces within the facility that are exposed to rainwater or to which water is applied in order to clean. All surface water will be collected and will discharge to the proposed soakaway. When the rate of water being collected by the underground pipes exceeds the infiltration rate into the ground, the collected water will then be directed to an overflow pipe which will discharge the excess water into the surface water infrastructure in the neighbouring Gas Fired Plant. Considering the above there is no potential for the stormwater to negatively impact surface water quality in the receiving environment.

Foul Water

Although the proposed substation will be unmanned, any wastewater generated at the proposed development site will arise from a welfare facility, consisting of a sink and toilet for operatives use when on site.

It is proposed to discharge wastewater generated on the site into the permitted new infrastructure on the neighbouring Power Plant site, reducing the number of connections required into the existing network within the Profile Park Campus Falcon Avenue access road. The wastewater layout has been designed in accordance with Irish Water's latest standard

details and code of practice. Thus, there is no potential for water quality impacts from foul water on the receiving environment.

Process Wastewater

There will be no process wastewater generated from the proposed development. Thus, there is no potential for water quality impacts from foul water on the receiving environment.

Maintenance Works

Operational access will be required to the proposed development site for testing, maintenance and deliveries. There will be occasional site visits to the substation site which may lead to occasional accidental emissions, in the form of oil, petrol or diesel leaks, which could cause localised contamination of site drainage/ surface water features, i.e., Baldonnell Stream.

The occasional site visits to the proposed development has the potential to result in **long-term, slight negative effects** on the receiving environment at a **local geographical scale**.

12.6.4.2 Disturbance (Noise and Lighting)

The proposed substation will be operated remotely with occasional site and maintenance visits. As such there will be a minimal increase in vehicular movements to the site and no associated increase in noise, dust or emissions.

During the operational phase, there are no predicted direct noise or vibration impacts from the redeveloped substation, as outlined in Chapter 11 Noise and Vibration. The only operational phase noise from the proposed substation redevelopment will be vehicle noise associated with maintenance visits to the site which will be irregular.

Permanent lighting is proposed within the proposed development with an activation switch. Lighting will only be switched on when maintenance staff are present on site.

Disturbance during the operational phase of the proposed development has the potential to result in **long-term, imperceptible, negative effects** on the local fauna at a **local geographical scale**.

12.6.5 Decommissioning Phase Impacts

The proposed Baldonnell 110kV substation is expected to be operational in accordance with the adjacent gas fired plant. The power plant is expected to be operational for at least 25 years. Impacts during the decommissioning phase are expected to be of similar type and magnitude to those anticipated during the construction phase, but generally of a shorter duration.

12.7 MITIGATION MEASURES

Mitigation measures which will be employed to ensure no significant effects on biodiversity occur as a result of the proposed development, are described hereunder.

Mitigation is prescribed with regard to the 'Mitigation Hierarchy' set out in the EPA 'Guidelines on the Information to be Contained in Environmental Impact Assessment Reports' (EPA 2022), which requires mitigation by avoidance as a first approach. Where this is not achievable, measures to prevent impacts from giving rise to adverse effects will be adopted. Where impacts cannot be avoided (e.g. generation of noise), mitigation by reduction of impact is prescribed to

limit the exposure of the ecological receptor to an acceptable level (often achieved by interrupting the pathway between the source and receptor). When significant effects cannot be prevented, mitigation to counteract the effects is required (i.e. offsetting measures).

12.7.1 Construction Phase Mitigation Measures

Mitigation measures which will be implemented during the construction phase are detailed hereunder.

12.7.1.1 Construction Environmental Management Plan

A Construction Environmental Management Plan (CEMP) has been prepared and is included within this Planning Application. All mitigation measures outlined within this chapter will be included within the CEMP. The CEMP is included in Appendix 3-2 of this EIAR.

12.7.1.2 Appointment of Environmental / Ecological Clerk of Works

A suitably qualified Ecological Clerk of Works (ECoW) will be appointed by the appointed Contractor. The ECoW will oversee all construction works and monitor any possible sources for impacts for the duration of the construction programme. The ECoW will inspect the construction phase of the proposed development is undertaken in strict agreement with the methods prescribed within the CEMP and will have the power to stop the works in case any activities/works are not compliant.

12.7.1.3 Pre-construction Botanical Survey

A pre-construction botanical survey will be carried out within the optimal survey period (April to September) prior to construction works commencing. The survey will be required to determine the presence of any protected or invasive flora, which may occur in the intermediate time or which may have been missed during the initial botanical survey undertaken outside the optimal survey period. In the event that a Flora Protection Order (FPO) or Red Listed plant species is identified within the footprint of the works area, appropriate mitigation such as translocation will be implemented. In the event that an invasive plant species, listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011 is recorded, a site-specific Invasive Species Management Plan will be prepared. Further details on the management of invasive species and pathogens are outlined in Section 12.7.1.56.

12.7.1.4 Clearance of Vegetation

The proposed construction work areas will be demarcated prior to construction works commencing. No clearance of vegetation will be undertaken outside of the demarcated areas within the proposed development site. Construction vehicles will be restricted to designated access tracks to avoid impacting adjacent habitats and to ensure that soil compaction is restricted to these tracks. All temporary disturbed ground will be fully reinstated following the completion of the works.

12.7.1.5 Management of Invasive Species and Pathogens

In order to comply with Regulations 49 and 50 of the European Communities (Birds and Natural Habitat) Regulations (2011), the appointed Contractor will ensure biosecurity measures are implemented throughout the construction phase to prevent the introduction and translocation of invasive species.

The following mitigation measures are prescribed to control the translocation or spread of invasive species and / or pathogens:

- No invasive plant species were recorded within the proposed development, however in the event that proposed construction works are delayed more than 18 months, a pre-construction invasive species survey will be undertaken. In the event that an invasive plant species, listed in Part 1 of the Third Schedule of S.I No. 477/2011 – European Communities (Birds and Natural Habitats) Regulations 2011 is recorded, a site-specific Invasive Species Management Plan (ISMP) will be prepared.
- Prior to arrival all machinery and equipment used during the construction works will be thoroughly cleaned and then dried using a high-pressured steam cleaning, with water >65 °C, in addition to the removal of all vegetation material. Disinfectant, such as a Virkon® Aquatic solution, will be used. The appointed Contractor will establish and clearly delineate a bunded cleaning/washing area.
- No removed material or run-off will be allowed to enter any water bodies (e.g. Baldonnell Stream).
- Evidence that all machinery and equipment has been cleaned will be required to be on file for review by the statutory authorities and the appointed ECoW.

12.7.1.6 Protection of Baldonnell Stream

Measures to prevent accidental spillage/leakage of chemicals and pollutants and uncontrolled runoff of contaminated surface water and sediment are outlined in Chapter 8 - Land, Soils and Geology and in Chapter 9 - Hydrology and Hydrogeology. The implementation of these control measures will ensure that there is no potential for impacts to ecological receptors in the receiving environment. A summary of the sediment and pollution control measures which will be implemented are provided hereunder.

Silt fences will be installed along the eastern boundary of the proposed development to ensure there is no runoff into Baldonnell Stream. Silt fences will be constructed using a permeable filter fabric (Hy-Tex Terrastop Premium silt fence or similar), which will be installed as per the manufacturer's guidelines and will be maintained until vegetation on the disturbed ground has been re-established. Once installed, the silt fence will be inspected regularly (daily) during construction and more frequently (hourly) during heavy rainfall (i.e., if there is a yellow weather warning in place or if the rainfall is greater than 5mm in a 1-hour period).

All concrete will be mixed off site and poured in place at site. All concrete browsers will be washed down at a dedicated concrete washout onsite located within the construction compound or offsite. Concrete washings will not be disposed of onsite to any surface or ground water features. All washings will be removed offsite and treated at a licensed facility. No chemicals that are deleterious to aquatic organisms will be used in cleaning works. All raw, uncured waste concrete must be cured at a designated location within the construction compound or offsite.

Re-fuelling of construction equipment and the addition of hydraulic oil or lubricants to vehicles / equipment will take place in designated hard surface, bunded areas within this construction compound or offsite only. If it is not possible to bring machinery to the refuelling point, fuel will be delivered in a double-skinned mobile fuel bowser. A drip tray will be used beneath the fill point during refuelling operations in order to contain any spillages that may occur. Refuelling will only occur within the construction compound or offsite.

12.7.1.7 Protection of Nesting Birds

The area which provides suitable bird nesting habitat (i.e. wet grassland) will not be removed, cleared or trimmed between the 1st March and 31st August, to avoid impacts on nesting birds protected under the Wildlife Acts and/or Birds Directive. Where the construction programme does not allow this time restriction to be observed, then these areas will be inspected by a qualified ecologist for the presence of breeding birds prior to commencement of the construction works. Where any nests are found, the appointed ECoW will provide recommendations as to whether a licence is required for vegetation removal and will detail the process for obtaining such derogation from the NPWS.

12.7.2 Operational Phase Mitigation

Mitigation measures which will be implemented during the operational phase are detailed hereunder.

12.7.2.1 Surface Water Mitigation

During the operational phase, site personnel will follow best practice measures as outlined in Chapter 9 – Hydrology and Hydrogeology when undertaking site visits and maintenance works.

12.7.2.2 Lighting

All new lighting proposed at the substation site will be designed in accordance with the Bat Conservation Ireland guidelines ‘*Bats and Lighting Guidance Notes: Planners, Engineers, Architects and Developers*’ (BCI, 2010). Lighting will only be switched on when manned; it should be noted the proposed development will comprise a generally unmanned facility. Light shields and directional lighting will be used to minimise light spill. All lighting will be directed away from Baldonnell Stream and away from treelines and hedgerows.

12.7.3 Decommissioning Phase Mitigation Measures

Impacts during the decommissioning phase are expected to be of similar type and magnitude to those anticipated during the construction phase, but generally of a shorter duration. Therefore, the same mitigation measures implemented during the construction phase, will be applied during the decommissioning works.

12.8 CUMULATIVE EFFECTS

Cumulative effects are defined in the EPA (2022) guidance as “*The addition of many minor or insignificant effects, including the effects of other projects, to create larger, more significant effects*”.

Information on relevant projects within proximity to the proposed development is described in Chapter 6 - Planning. The information was sourced from a search of the local authorities planning registers, the EPA website, planning applications, EIAR documents and planning drawings, which facilitated the identification of past and future projects, their activities and their potential environmental impacts. All projects listed in Chapter 6 were reviewed as part of the cumulative effects assessment. Key projects with the potential for cumulative effects on Biodiversity are described further below.

12.8.1 Projects

Profile Park Power Plant (Planning Ref: SD21A/0167)

Green Ideas Limited have been granted planning for the development of a 125 MW dual fuel gas fired power plant located immediately east of the proposed Baldonnell substation. The gas fired power plant was subject to an EIA which included an ecological impact assessment.

The EIA report concluded that following the implementation of the mitigation measures there is no potential for the gas fired power plant to result in significant negative effects on the receiving biodiversity and there is no potential for residual impacts (TOBIN, 2021). There is therefore no potential for cumulative negative effects on biodiversity with the proposed development under appraisal in this report.

Kilcarbery Substation (Planning Ref: 312793)

Vantage Data Centers Dublin 11 Limited are seeking permission for the development of the Kilcarbery Substation and Transmission Line located immediately west of the proposed substation site. An EIAR of the proposed Kilcarbery substation was prepared and included an ecological impact assessment. The EIAR concluded that the proposed Kilcarbery substation would not result in any likely significant effects on the receiving biodiversity and there was no potential for residual effects. Considering the above, there is therefore no potential for cumulative negative effects on biodiversity with the proposed development under appraisal in this report.

12.8.2 Plans

The South Dublin Development Plan 2022-2028⁹ indicates that the proposed development site is located within Enterprise and Employment zoned lands. The development plan indicates that Enterprise and Employment zoned lands will accommodate low to medium intensity enterprise employment uses.

The County Development Plan also indicates policies and objectives associated with the protection of biodiversity and European sites (Objectives: NCBH2, NCBH3, NCBH4, NCBH5, etc.). All new plans and projects proposed within the local administrative area must adhere to the above-mentioned objectives. Adherence to the Council's policies and objectives will therefore ensure that all plans and projects proposed within the area will not result in significant effects on biodiversity and international and national sites. There is, therefore, no potential for significant cumulative effects on biodiversity with the proposed development.

12.9 RESIDUAL EFFECTS

The design of the proposed development has considered the existing ecological conditions within the receiving environment. It is anticipated that with the implementation of mitigation measures (as outlined above), the construction, operational and decommissioning phases of the proposed development, will not result in significant residual effects on biodiversity. This conclusion is further described hereunder.

⁹ Accessed [January 2023] via: <https://www.sdcc.ie/en/devplan2022/adopted-plan/county-development-plan-written-statement/county-development-plan-written-statement.pdf>

12.9.1 Construction Phase

The proposed development will result in a permanent loss of habitat, approximately 0.2ha in size. Considering the small area of habitat which will be permanently lost, and the availability of alternative, similar habitat in the surrounding area, the permanent loss of the habitat will not result in significant effects on the receiving environment. In addition, with the proposed construction related mitigation measures as outlined above, the existing biodiversity can be protected. Mitigation measures are based on best available scientific evidence, therefore confidence can be placed in their likely success. Thus, there will be no significant residual effects arising from the construction phase of the proposed development.

12.9.2 Operational Phase

With the proposed mitigation measures in place (as outlined above), the existing biodiversity can be protected. Mitigation measures are based on best available scientific evidence, therefore confidence can be placed in their likely success. Thus, there will be no significant residual effects arising from the operational phase of the proposed development.

12.9.3 Decommissioning Phase

Due to the limited extent of the works required for decommissioning, and the implementation of the mitigation measures listed above, the existing biodiversity can be protected. Mitigation measures are based on best available scientific evidence, therefore confidence can be placed in their likely success. Thus, there will be no significant residual effects arising from the decommissioning phase of the proposed development.

12.10 REFERENCE

- Bat Conservation Ireland (BCI) (2010). Guidance Notes for: Planners, engineers, architects and developers. December 2010.
- Byrne, A., Sleeman, D, O'Keefe, J., (2012). The Ecology of the European Badger (*Meles meles*) in Ireland: a review. Biology and Environment: Proceedings of the Royal Irish Academy 112B.
- Chanin P (2003). Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough
- Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Countryside Bird Survey (2012). CBS Manual, Guidelines for Countryside Bird Survey Participants.
- Cutts, N., Hemingway, K., Spencer, J., (2013). Waterbird Disturbance Mitigation Toolkit Informing Estuarine Planning and Construction Projects.
- Environment Agency (2003). River Habitat Survey in Britain and Ireland Field Survey Guidance Manual: 2003 Version.
- Environment, Heritage and Local Government (2010). Appropriate Assessment of Plans and Projects in Ireland, Guidance for Planning Authorities.
- Farmer A. (1993). The effects of dust on vegetation-a review. Environ Pollut. 1993;79(1):63-75. doi: 10.1016/0269-7491(93)90179-r. PMID: 15091915.
- Gilbert, G., Stanbury, A., Lewis, L. (2021). Birds of Conservation Concern in Ireland 2020-2026. Irish Birds.
- Harris, S., Cresswell, P., Jefferies D (1989). Surveying Badgers. Mammal Society – No. 9.
- Holman, C., Barrowcliffe, R., Birkenshaw, D., Dalton, H., Gray, G., Harker, G., Brett, P., Laxen, D., Marnier, B., Marsh, D. and Prismall, F., (2014). IAQM Guidance on the Assessment of Dust from Demolition and Construction. Institute of Air Quality Management, London (accessed 11.03.14). www.laqm/wpcontent/uploads/guidance/dust_assessment. Pdf.
- Lundy, M.G., Aughney, T., Montgomery, W.I., & Roche, N., (2011). Landscape conservation for Irish bats & species roosting characteristics. Bat Conservation Ireland.
- Marston Planning Consultancy (2020). Environmental Impact Assessment Report, Data Centre Development Grange Castle South Business Park. (Unpublished Report).
- Neo Environmental Limited (2021). Appropriate Assessment Screening, Kilcarbery Substation and Transmission Lines. (Unpublished Report).
- NRA (2005). Guidelines for the Treatment of Badgers prior to the Construction of National Road Schemes

NRA (2006a). Guidelines for the Treatment of Otters prior to the Construction of National Roads Schemes. National Roads Authority, Dublin.

NRA (2006b). Best practice guidance for the Conservation of Bats in the Planning of National Road Schemes.

O'Neil, K., Jennings, S., Forsyth, L., Carey, R., Portig, A., Preston, J., Langton, T. & McDonald, R. (2004) The Distribution and status of smooth newts in Northern Ireland. Environmental & Heritage Service, Belfast. (Unpublished).

Scottish Natural Heritage (2017). Recommended bird survey methods to inform impacts assessment of onshore windfarms. Version 2.

Smal, C., (1995). The Badger and Habitat Survey of Ireland.

Smith, G. F., O'Donoghue, P., O'Hora, K., & Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping. Ireland's Heritage Council: Kilkenny, Ireland.

TOBIN Consulting Engineers (TOBIN) (2021). Profile Park Power Plant, Environmental Impact Assessment Report (EIAR). Volume II – EIAR Main Report, June 2021.