

SSE Tarbert Next Generation Power Station

Environmental Impact Assessment Report (EIAR)
Volume I
Chapter 09 Biodiversity

SSE Generation Ireland Limited

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9. Biodiversity

9.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) assesses the potential impacts and effects of the construction, operation, and decommissioning phases of the Proposed Development (as presented in EIAR Volume I Chapter 5) on the ecological environment. The 'Site' refers to the redline boundary within which the Proposed Development will be situated, and which lies within the existing SSE Tarbert site.

This chapter describes and considers terrestrial habitats and species and those marine species including bird species that forage in the marine environment, which could be impacted by the Proposed Development. Throughout this chapter, the term 'ecological feature' is used to refer to protected and notable nature conservation sites, habitats, and floral and faunal species as defined in Section 9.3.1.

Where appropriate, it provides details of committed mitigation and / or enhancement measures identified to avoid or reduce, or if necessary, offset for adverse effects on ecological features.

An Appropriate Assessment (AA) Screening report and Natura Impact Statement (NIS) have also been submitted as part of this planning application (Appendix 9B EIAR Vol II) which describe the assessment conducted to determine whether there could be adverse effects on the integrity of European sites, due to the construction, operation and / or decommissioning of the Proposed Development. Where appropriate, reference is made in this chapter to analysis presented in the AA Screening report and NIS.

Throughout this chapter, species are given their common and scientific names when first referred to and their common names only thereafter. All distances are cited as the shortest distance unless otherwise specified.

9.2 Legislation, Policy and Guidance

9.2.1 Relevant Legislation

The Ecological Impact Assessment (EclA) presented in this chapter has been carried out in accordance with the following relevant legislation:

- Council Directive 92/43/EEC (as amended) of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive').
- Directive 2009/147/EC (as amended) on the conservation of wild birds (the 'Birds Directive').
- Directive 2000/60/EC establishing a framework for Community action in the field of water policy (the 'Water Framework Directive').
- EC Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (the 'Invasive Alien Species Regulations').
- Convention on Wetlands of International Importance ('Ramsar Convention').

- The Planning & Development Act 2000 (as amended) (the 'Planning Act').
- European Communities (Bird and Natural Habitats) Regulations 2011 (as amended) (the 'Habitats Regulations').
- The Wildlife Act 1976 and the Wildlife (Amendment) Act 2000 (together known as the 'Wildlife Acts').
- Flora (Protection) Order 2022 (S.I. No. 235 of 2022 (the 'Flora Protection Order' (FPO))); and
- EC Environmental Objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009).

9.2.2 Relevant Planning Policy and Guidance

9.2.2.1 Project Ireland 2040: National Planning Framework

The *Project Ireland 2040: National Planning Framework* (NPF)¹ sets out the Government's planning policies for Ireland and how these should be applied. The NPF sets out that to achieve sustainable development, the planning system must incorporate an environmental objective, which should include:

- integrated planning for green infrastructure and ecosystem services.
- enhancing the conservation status and improve the management of protected areas and protected species.
- use natural resources prudently.
- minimising waste and pollution; and
- mitigating and adapt to climate change, including moving to a low carbon economy.

9.2.2.2 National Biodiversity Action Plan 2017-2021

The *National Biodiversity Plan 2017-2021*² for Ireland outlines six main objectives to meet commitments under the Convention on Biological Diversity (CBD) and EU Biodiversity Strategy. These objectives include:

- mainstream biodiversity into decision-making across all sectors.
- strengthen the knowledge base for conservation, management and sustainable use of biodiversity.
- increase awareness and appreciation of biodiversity and ecosystem services.
- conserve and restore biodiversity and ecosystem services in the wider countryside.
- conserve and restore biodiversity and ecosystem services in the marine environment.
- expand and improve management of protected areas and species; and
- strengthen international governance for biodiversity and ecosystem services.

¹ GOI (2018). *Project Ireland 2040: National Planning Framework*.

² DCHG (2017). *National Biodiversity Plan 2017-2021*.

9.2.2.3 Kerry County Development Plan 2022-2028

The *Kerry County Development Plan (CDP) 2022-2028*³ sets out an overall strategy for the proper planning and sustainable development within the functional area of County Kerry.

Several policies are relevant to biodiversity and the Proposed Development, including:

- *Objective 11-1: Comply with relevant EU and national legislation, including the requirements of the EU Birds and Habitats Directives.*
- *Objective 11-2: Maintain the nature conservation value and integrity of EU and nationally designated sites.*
- *Objective 11-3: Conserve, manage and where possible enhance the County's natural heritage including all habitats.*
- *Objective 11-22: Encourage and facilitate the retention and creation of features of local biodiversity value.*
- *Objective 11-16: Control of Invasive Alien Species.*
- *Objective 11-31: Air and noise pollution; and*
- *Objective 11-42: Lights and biodiversity.*

9.2.2.4 County Kerry Biodiversity Action Plan 2022-2028

The aim of the *County Kerry Biodiversity Action Plan (BAP) 2022-2028* is to conserve, protect and enhance biodiversity, work with a range of stakeholders to achieve this, and increase awareness and appreciation of biodiversity within the county council and the community.

9.2.2.5 Other Guidance

Additional guidance that has been adhered to in the preparation of this EIA of the Proposed Development comprises:

- CIEEM (2019). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.*
- CIEEM (2021). *Advisory Note: Ecological Assessment of Air Quality Impacts.*
- Holman *et al.*, (2019). *A Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites.*

9.3 Methodology

9.3.1 Target Ecological Features

For the purposes of all desk study and field survey, the target ecological features of this EIA comprised:

- designated or proposed nature conservation sites at international, national or local levels.

³ Kerry Co. Co. (2022). *Kerry County Development Plan 2022-2028.*

- habitats and species listed on Annexes I and II, respectively, of the Habitats Directive, which listing indicates importance in a European context and affords protection if designated as Qualifying Interests (QI) of SAC.
- species listed on Annex IV of the Habitats Directive, which are known as European Protected Species (EPS) and are subject to strict protection anywhere they occur.
- species listed on Annex I of the Birds Directive, which listing indicates importance in a European context and affords protection where designated as Special Conservation Interest (SCI) of SPA.
- species listed on the Wildlife Acts.
- Red-listed and Amber-listed birds in the Birds of Conservation Concern in Ireland (BoCCI)⁴;
- plant species listed on the FPO.
- species and habitats listed on the *National Biodiversity Action Plan 2017-2021*.
- species that are Nationally Rare, Nationally Scarce or listed in Red Data Lists, which are published by the National Parks and Wildlife Service (NPWS) in collaboration with relevant Northern Irish agencies (e.g., Marnell *et al.*, 2019; Regan *et al.*, 2010, King *et al.*, 2011, Lockhart *et al.*, 2012, Nelson *et al.*, 2011; and Wyse-Jackson *et al.*, 2016).
- invasive non-native species of plants and animals listed on the Third Schedule of the Habitats Regulations (hereafter referred to as 'scheduled invasive species'), those of EU concern under the EU Invasive Alien Species Regulation, and those listed by the National Biodiversity Data Centre (NBDC) as High Risk in Ireland.

Other species or habitats, that may be rare, scarce or otherwise notable, were included where deemed appropriate through available information and / or professional judgement.

9.3.2 Zone of Influence

The 'zone of influence' (Zol) of the Proposed Development is the area over which ecological features may be subject to significant effects as a result of its construction, operation, decommissioning and / or associated activities. The Zol can extend beyond the boundary of the Site, for example where there are hydrological links extending beyond the Site.

The Zol will vary for different ecological features depending on their sensitivity to an environmental change. It is therefore appropriate to identify different Zol for different ecological features, including designated sites, habitats, and species, see Appendix 9A for the Zol used for this assessment.

As recommended by CIEEM guidance⁵, professionally accredited or published studies, where available, were used to determine the likely Zol, as well as professional judgement. However, CIEEM guidance⁶ also highlights that establishing the Zol should be an iterative process and can be informed by further

⁴ Gilbert *et al.*, (2021). *Birds of Conservation Concern in Ireland 2020-2026*.

⁵ CIEEM (2019). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*.

⁶ CIEEM (2019).

desk study and field survey. Where limited information was available, the Precautionary Principle was applied and a Zol estimated on that basis.

The study areas used for the desk study and field survey, which are described below and in Appendices 9B - 9E EIAR Volume II were designed to allow for sufficient data to be collected to establish the baseline condition of ecological features within the Zol of the Proposed Development. The study areas were therefore generally precautionary.

9.3.3 Consultation

The assessment of impacts from the Proposed Development on ecological features has been informed and influenced by consultation held with NPWS, a statutory stakeholder. A summary of the consultation held, the information / recommendations provided, and details of how this EIA has responded to their feedback is provided in Table 9.1.

Table 9.1: Summary of consultations

Consultee	Date of Consultation	Information / Recommendations Provided	Action taken by this EIA in response
NPWS Regional Management	10/10/2023	Details on ecological receptors in the area, specifically impacts to Birds Directive Schedule I listed species such as the white-tailed sea eagle <i>Haliaeetus albicilla</i> .	Considered all information provided in detail and assessed the potential for impacts to such species.

9.3.4 Desk Study

A desk study was carried out to identify relevant nature conservation designations, and records of protected and notable habitats and species potentially relevant to the Proposed Development. The desk study areas were defined using a stratified approach based on the Zol of the Proposed Development on different ecological features. Accordingly, the desk study sought to identify:

- international nature conservation designations – Special Area of Conservation (SAC) and Special Protection Area (SPA), including candidate designations (cSAC) within the Zol of the Proposed Development (up to 135km to account for mobile marine features) in accordance with Office of the Planning Regulator (OPR) guidance⁷.
- national statutory nature conservation designations and proposed designated sites within 2km of the Site.
- local nature conservation designations within 2km of the Site; and
- records of protected and notable habitats and species within 2km of the Site.

The desk study was carried out using the sources detailed in Table 9.2.

⁷ OPR (2021). *OPR Practice Note PN01: Appropriate Assessment Screening for Development Management*.

Table 9.2: Desk study data sources

Data Source	Date Accessed	Data Obtained
Environmental Protection Agency (EPA) maps: https://gis.epa.ie/EPAMaps/	27 June 2023	<ul style="list-style-type: none"> International statutory designations within the Zol. Other statutory designations within 2 km. Local nature conservation designations within 2 km. Information on watercourses, water quality, soils, and geology.
NPWS Protected Sites in Ireland: https://www.npws.ie/protected-sites	27 June 2023	<ul style="list-style-type: none"> Details on relevant statutory and non-statutory designations.
National Biodiversity Data Centre: https://maps.biodiversityireland.ie/	27 June 2023	<ul style="list-style-type: none"> Biological records within 2 km. Otter and badger records within the same 10 km grid square in which the Site is located (R04). High Risk invasive species in Ireland.
The Status of EU Protected Habitats and Species in Ireland (Article 17 Report): https://www.npws.ie/publications/article-17-reports/article-17-reports-2019	27 June 2023	<ul style="list-style-type: none"> Information on the status of EU protected habitats and species in Ireland.
Irish Red Lists	27 June 2023	<ul style="list-style-type: none"> Conservation status of plants, amphibians, reptiles, freshwater fish, invertebrates, birds and terrestrial mammals (including bats).
Ordnance Survey Ireland maps and aerial photography: https://www.osi.ie/	27 June 2023	<ul style="list-style-type: none"> Habitats and connectivity relevant to interpretation of planning policy and potential protected / notable species constraints.

9.3.5 Field Survey

9.3.5.1 Scope of Field Survey

The scope of survey described in this chapter was informed by the guidance contained within published documents referenced in Section 9.2 and in Appendix 9C - 9E, EIAR Volume II, and on the results of the desk study and the field survey carried out, to establish the baseline ecological conditions.

Based on an initial desk study, including a review of biological records and aerial imagery of the Site, a number of ecological features were excluded from targeted field survey, as set out in Table 9.3.

Table 9.3: Ecological features excluded from field survey

Ecological Feature(s)	Reason(s) for Exclusion from Field Survey
Irish hare <i>Lepus timidus hibernicus</i> , hedgehog <i>Erinaceus europaeus</i> , pygmy shrew <i>Sorex minutus</i> , Irish stoat <i>Mustela erminea Hibernica</i>	Irish hare is present on Site, and it is possible that hedgehog and Irish stoat may occur on Site and / or within the surrounding area. It can be assumed that they are present, and effects of the Proposed Development will be mitigated through standard measures.
Common lizard <i>Zootoca vivipara</i>	The Site has the potential to support this species, which is relatively common and widespread. Common lizard may occur in the grassland and along road verges. Standard mitigation measures to avoid or reduce or, if necessary, compensate for effects of the Proposed Development on this species will be implemented.

A description of the methods adopted for all ecological field surveys is provided under the following sub-headings / accompanying appendices. All ecological field surveys were carried out by experienced AECOM ecologists.

9.3.5.2 Habitat and Flora Survey

Survey for habitats and rare, protected and invasive flora were carried out in June, July and August 2023 by suitably qualified AECOM ecologists with extensive survey experience. The Site habitats were classified according to *A Guide to Habitats in Ireland*⁸. Notes were made for each habitat of dominant, typical and notable plant species, and any relevant ecological characteristics (particularly where relevant to habitat condition), which reflect conditions at the time of survey were recorded. Habitats were also visually assessed to determine their potential value for nesting birds, invertebrates, and other taxa.

Habitat types were mapped in the field with the ESRI Field Maps application on Android tablets. By using the GPS inbuilt within the device and in context with recognisable features on the ground visible from downloaded orthophotography, this allows for accurate locational data of evidence to be recorded. Nomenclature for plant species followed that of Stace guidance⁹.

9.3.5.3 Protected and Notable Species Surveys

Full details of the methods used when conducting surveys for bats and birds for the Proposed Development are provided in Appendices 9C – 9E inclusive, EIAR Volume II, respectively. A summary of the scope of protected / notable species surveys is provided in Table 9.4.

Table 9.4: Summary of species surveys completed for the Proposed Development

Ecological Survey	Date of Survey	Scope of Survey	Appendix
Preliminary Roost Assessment	26 / 27 June 2023	A ground-based, external assessment of the bat roost suitability of all trees and buildings which will be removed. Trees and buildings outside of this area are not expected to be impacted by the Proposed Development and therefore were not surveyed.	Appendix 9C EIAR Vol II
Walked bat transect	07 June 2023 26 June 2023 30 August 2023	A walked bat activity transect route was devised to cover typical examples of all habitats suitable for bat foraging and commuting within the Site, and areas immediately adjacent to the Site, including woodland to the east of the Site, and the road to the south of the inlet leading to the National Oil Reserves Agency (NORA) site.	
Otter <i>Lutra lutra</i> survey	07 June 2023 08 June 2023 30 August 2023	Walkover survey of the Site and coastal sections immediately beyond the Site boundary	Not applicable, described in this chapter.
Badger <i>Meles meles</i> survey	07 June 2023 08 June 2023 30 August 2023	Walkover survey within the Site, and immediately adjacent area.	Not applicable, described in this chapter.
Breeding bird survey	08 June 2023 27 June 2023	Walkover survey to record the breeding bird assemblage within the Site and immediately adjacent areas.	Appendix 9D EIAR Vol II

⁸ Fossitt (2022).

⁹ Stace (2019).

Ecological Survey	Date of Survey	Scope of Survey	Appendix
Wintering bird survey	15 November 2022	Walkover survey to record the wintering bird assemblage within the Site plus a 500 m buffer. Ten survey visits were made between November 2022 and March 2023 inclusive, twice per month to take in high and low tides.	Appendix 9E EIAR Vol II
	16 November 2022		
	14 December 2022		
	15 December 2022		
	24 January 2023		
	25 January 2023		
	15 February 2023		
	15 February 2023		
	06 March 2023		
	07 March 2023		
Marine mammals	15 February 2023	During surveys and time spent on Site. Frequent scans were made over the surrounding coastline and open water to make checks for marine mammals.	Not applicable, described in this chapter.
	7 & 8 June 2023		
	26 & 27 June 2023		
	30 & 31 August 2023		
	2023		

Otter Survey

Otter surveys were carried out on 7 June 2023 and 30 August 2023 within the Site, and surrounding coastal habitat within the survey area, as far as safe access permitted. The survey followed guidance in published literature¹⁰.

Evidence of otter searched for included refuges (holts and lie-ups¹¹), spraints (faeces), footprints, trails and foraging signs. Where found, spraints were recorded as fresh, recent or old, according to their apparent age.

Any evidence of otter found during the survey was mapped on handheld Android tablets and accompanying field notes were taken.

Badger Survey

Badger surveys were carried out within the Site and immediately adjacent suitable habitats, as far as safe access permitted, on 07 June 2023 and 30 August 2023. The survey followed guidance in published literature¹².

Evidence searched for included setts, spoil heaps, bedding, guard hairs, latrines, footprints, trails, scratch marks and foraging activity.

Badger evidence was mapped with the aid of aerial photography and GPS, with accompanying field notes. If present, setts were classed as main, annex, subsidiary or outlier, where possible, and holes described as well-used, partially used or disused.

9.3.6 Ecological Impact Assessment

The method employed for assessment of impacts on ecological features followed that recommended by the Chartered Institute of Ecology and Environmental Management (CIEEM) in the *Guidelines for Ecological Impact Assessment in the UK and Ireland*¹³. CIEEM is the leading professional membership

¹⁰ Chanin (2003). *Monitoring the Otter Lutra lutra, Conserving Natura 2000 Rivers Monitoring Series No. 10*.

¹¹ A holt is a well-enclosed otter refuge, such as a burrow. A lie-up (also known as a 'couch') is semi-enclosed and of lesser importance.

¹² Harris *et al.*, (1989).

¹³ CIEEM (2019).

body for ecologists in both the UK and Ireland. It provides advice to government, upholds standards in professional conduct, and promotes best practice.

The principal steps involved in the CIEEM approach can be summarised as:

- baseline conditions are determined through targeted desk study and field survey to identify ecological features that are both present and might be affected by the Proposed Development (both those likely to be present at the time works begin, and for comparison, those predicted to be present at a set time in the future).
- the importance of identified ecological features is evaluated to place their relative biodiversity and nature conservation value into a geographic context, determining those that need to be considered further within the impact assessment.
- the potential impacts of the Proposed Development on relevant ecological features are described, considering established best practice, legislative requirements and embedded design measures.
- the likely effects (adverse or beneficial) on relevant ecological features are assessed and, where possible, quantified.
- measures to avoid or reduce (or, if necessary, compensate for) any predicted significant effects, if possible, are developed in conjunction with other elements of the design (including mitigation for other environmental disciplines).
- any residual effects of the Proposed Development and their significance are reported; and
- scope for enhancement measures is considered.

Only those ecological features that are ‘important’ and that could be significantly affected by the Proposed Development require detailed assessment – “*it is not necessary to carry out detailed assessment of ecological features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable*”¹⁴. This is consistent with the EIA Directive (Directive 2011/92/EU as amended by Directive 2014/52/EU) which requires investigation of likely significant effects, as accordingly emphasised by the EPA guidelines¹⁵.

Existing data and criteria are considered when determining the importance of ecological features. Where these are lacking, it is necessary to apply professional judgement. Factors considered include:

- rarity, endemism, mobility and geographic range (particularly if this changing).
- size / extent, rate of decline and vulnerability.
- typicalness, species-richness, habitat structure and connectivity/fragmentation.
- function / value to other features (e.g., habitats of notable species or buffers against impacts); and
- restoration potential.

¹⁴ CIEEM (2019).

¹⁵ EPA (2022). *Guidelines on the information to be contained in Environmental Impact Assessment Reports*.

Compliance with legislation is relevant but, along with priority listing, does not necessarily translate to importance. For example, a transitory roost of a single bat would not be afforded the same importance as a regularly occurring maternity roost, although legal obligations must still be met, and areas of priority habitat could be unfavourably small or in poor condition and not practically restorable.

The importance of ecological features is described using a geographic scale. Examples of the types of ecological features which may fall into each category are given in Table 9.5, which is adapted from CIEEM guidelines¹⁶. For the purposes of this assessment 'Local' is defined as the area within 5km of the Site.

Table 9.5: Example of ecological importance

Importance	Examples
International	Internationally designated nature conservation site (or candidate/proposed international site), or site satisfying criteria for such designation, or feature essential to maintaining such sites. Sustainable area (or part of a larger sustainable area) of best examples of Annex I habitat ¹ . A regularly occurring internationally significant population (e.g. 1% of the national population, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of internationally important species listed on Annex I of the Birds Directive or Annex II of the Habitats Directive.
National	Nationally designated nature conservation site (or proposed such site), or site satisfying criteria for such designation. Sustainable area of good quality Annex I habitat not deemed to be of international importance, or of national priority habitat, which is a significant proportion of the resource. Regularly occurring nationally significant population (e.g., 1% of the national population, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of species listed or protected under the Wildlife Acts or Red Data lists, or site supporting one.
County	County designated nature conservation site (or proposed such site). Sustainable area of Annex I habitat or national priority habitat not deemed to be of higher importance (e.g., lower quality, highly fragmented, small and / or low restoration potential), or priority habitat under a Local Biodiversity Action Plan if this exists and applies at county level. Regularly occurring County significant population (e.g., 1% of county resource, or potentially less for critical parts of wider populations or those at a critical life-cycle stage) of species listed or protected under the Habitats/Birds Directives, Wildlife Acts, Red Data lists or Local Biodiversity Action Plan (if this exists and applies at county level), or site supporting one.
Local	Priority habitat of insufficient size or quality for higher importance or degraded with low restoration potential. Habitat providing significant biodiversity or important ecological corridors in a local context. Small sustainable population of notable species not qualifying for higher importance or uncommon locally.
Site	Common, heavily managed or modified habitat, and common and widespread species.

¹ Habitat listed on Annex I of the Habitats Directive.

Under CIEEM¹⁷ guidance there is a clear distinction between 'impact' and 'effect'. An impact is an action on an ecological feature (e.g., hedgerow removal; loss of a bat roost). An effect is the outcome of that impact on an ecological feature (e.g., effect of hedgerow loss on breeding birds; effect of bat roost loss on the conservation status of the bat species).

Impacts may occur during the construction, operation, and decommissioning phases of a development. They may be direct or indirect (also termed 'secondary'). Direct impacts are attributable to an action

¹⁶ CIEEM (2019).

¹⁷ CIEEM (2019).

associated with a development. Indirect impacts are often produced away from a development or as a result of other initial impacts.

Likely impacts / effects are characterised using those parameters below that are necessary to understand them:

- **direction / quality** – whether the impact will have a beneficial, neutral, or adverse effect.
- **magnitude** – the ‘size’, ‘amount’ or ‘intensity’ of an impact, described in quantitative terms as far possible.
- **extent** – the spatial or geographical area or distance over which the impact or effect occurs.
- **duration** – the time over which an impact/effect is expected to last prior to recovery or replacement (if possible) of the feature. Where appropriate, ecological aspects such as lifecycles are considered. The duration of an effect may be longer than the duration of an activity or impact.
- **timing and frequency** – timing is important since an effect might not occur if critical seasons or life stages are avoided. Frequency considers repetition of an activity, which may result in a greater effect; and
- **reversibility** – whether the effect is temporary or permanent. A temporary impact/effect is one from which recovery is possible or for which effective mitigation is possible and enforceable. A permanent effect is one from which recovery is either not possible or cannot be achieved within a reasonable timescale (in the context of the feature being assessed).

Consideration is given to conservation objectives, whether processes within sites will be altered, effects on habitats and species population size / viability, and whether these will have an effect on conservation status. Conservation status is determined by the abundance and distribution of species, and the extent, structure and function, and typical supported species of habitats.

Consideration is also given to cumulative effects, since impacts acting in combination may have a cumulative effect exceeding that of the separate impacts. Cumulative effects may arise from a combination of impacts from the Proposed Development itself (e.g., impacts at the construction and operation stages), or the combined impacts from different developments.

An effect (positive or negative) is significant at a specified geographical level if it affects the ecological integrity of a site or ecosystem or the conservation status of a species or habitat. If not significant at the level it was considered important, an effect could be significant at a lower geographic level (for example, an effect on a nationally-important species may not be significant to the national population). These assessments are based on quantitative evidence where possible, and as necessary through professional judgement.

Initially, the effect significance does not consider mitigation or compensation unless it is part of the embedded approach. The residual effect significance takes such measures into account, with the aim that, wherever possible, residual effects are not significant or are significant at a lower geographic level.

The CIEEM guidelines¹⁸ advises that where there is reasonable doubt and a conclusion of no significant effect cannot be robustly reached, this uncertainty should be acknowledged and a significant effect assumed, in line with the precautionary principle.

As stated above, the CIEEM methodology for EclA advises that the significance of effects on ecological features should be assessed at geographic scales. However, in order to ensure consistency with other chapters in this EIAR, a conclusion of 'Significant' or 'Not Significant' in EIA terms has been adopted to facilitate interpretation of ecological effects which a) require mitigation, and/or b) which are sufficiently great that they may be a material consideration when assessing the planning application for the Proposed Development. In this chapter, therefore, any effects on ecological features which are considered to be of County significance or greater are taken to be Significant in EIA terms. Effects which are of Local or Site significance are taken to be Not Significant in EIA terms.

9.3.7 Approach to Mitigation

Where impacts on relevant ecological features are predicted, the approach to mitigation engages the following hierarchy:

1. Avoid ecological features where possible.
2. Minimise impact by design, method of working or other measures, for example by enhancing existing features by changes to maintenance regime.
3. Compensate for significant residual impacts (e.g., by providing suitable habitats elsewhere).

This hierarchy requires the highest level to be applied where possible. Only where this cannot reasonably be adopted are lower levels considered, giving rationale including sufficient detail to show that the measures are feasible and will be provided.

The NPF supports the protection and promotion of natural assets and biodiversity via green infrastructure. As previously discussed, the Kerry CDP 2022-2028 includes several nature conservation policies relevant to the Proposed Development, refer to Section 9.2.2.3.

9.3.8 Assessment Assumptions and Limitations

The aim of the desk study was to help characterise the baseline context of the Proposed Development and provide valuable background information that may not be captured by field survey alone. Information obtained during the desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular species does not necessarily mean that they do not occur in the survey area. Likewise, the presence of records for particular species does not automatically mean that these still occur within the survey area or are relevant to the Proposed Development.

Details of specific limitations associated with the surveys for bats, breeding birds and wintering birds are presented in Appendices 9C, 9D and 9E EIAR Volume II, respectively. In summary, due to the time of commissioning, no wintering bird survey was completed in October. Due to the current use of the site

¹⁸ CIEEM (2019).

as an active construction site, some areas of the site were unable to be accessed during breeding bird surveys, however, these areas were observed from adjacent lands by binoculars.

All identified limitations were minor and do not substantially affect the robustness of the baseline data collected, or the assessment of ecological impacts presented in this chapter.

No specific survey was carried out for Irish hare or hedgehog, although they were noted where observed. Both species, although of conservation concern, are fairly common and very widespread. There are habitats present within the Site which could support Irish hare and hedgehog, including grassland and grassy verges, and suitable grassland, scrub and woodland habitat also exists immediately adjacent to the Site.

Wintering bird surveys were undertaken in November and December 2022 and January, February and March 2023 with the results detailed in Appendix 9E EIAR Volume II and also summarised within this chapter. No count was completed in October 2022. Additionally, data were supplied by the Irish Wetland Bird Survey (I-WeBS), a scheme coordinated by BirdWatch Ireland under contract to the National Parks and Wildlife Service of the Department of Housing, Local Government and Heritage, for the closest subsite (01465 - Tarbert Bay (Tarbert Race – Glinn)), located 2km south-west of the Site. This dataset comprised only of records from a single count in November 2018.

With similar results being recorded throughout the winter period, it is not considered that an additional count would have been significantly different. On that basis it is considered that sufficient information on the presence of wintering birds is available to undertake a reliable and robust assessment of the potential effects of the Proposed Development on these ecological features.

9.4 Baseline Environment

9.4.1 Nature Conservation Designations

9.4.1.1 Statutory Designations

There are five international nature conservation designations within the ZoI of the Proposed Development, refer to Table 9.6.

European sites are listed in ascending order of distance from the Site, with those closest described first. The locations of the statutory designated sites relative to the Proposed Development are shown on Figure 9.1. EIAR Volume III.

Table 9.6: Statutory designated nature conservation sites

Site Name [Site Code]	Approximate Distance from the Site	Summary of Qualifying Interests / Special Conservation Interests
Lower River Shannon SAC (002165)	0km – immediately adjacent	<ul style="list-style-type: none"> • Sandbanks which are slightly covered by sea water all the time [1110] • Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Coastal lagoons [1150] • Large shallow inlets and bays [1160] • Reefs [1170]

Site Name [Site Code]	Approximate Distance from the Site	Summary of Qualifying Interests / Special Conservation Interests
River Shannon and River Fergus Estuaries SPA (004077)	0km – immediately adjacent	<ul style="list-style-type: none"> • Perennial vegetation of stony banks [1220] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • <i>Salicornia</i> and other annuals colonising mud and sand [1310] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260] • <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410] • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0] • Freshwater pearl mussel <i>Margaritifera margaritifera</i> [1029] • Sea lamprey <i>Petromyzon marinus</i> [1095] • Brook lamprey <i>Lampetra planeri</i> [1096] • River lamprey <i>Lampetra fluviatilis</i> [1099] • Salmon <i>Salmo salar</i> [1106] • Common bottlenose dolphin <i>Tursiops truncatus</i> [1349] • Otter <i>Lutra lutra</i> [1355] <hr/> <ul style="list-style-type: none"> • Cormorant <i>Phalacrocorax carbo</i> [A017] • Whooper swan <i>Cygnus cygnus</i> [A038] • Light-bellied brent goose <i>Branta bernicla hrota</i> [A046] • Shelduck <i>Tadorna tadorna</i> [A048] • Wigeon <i>Anas penelope</i> [A050] • Teal <i>Anas crecca</i> [A052] • Pintail <i>Anas acuta</i> [A054] • Shoveler <i>Anas clypeata</i> [A056] • Scaup <i>Aythya marila</i> [A062] • Ringed plover <i>Charadrius hiaticula</i> [A137] • Golden plover <i>Pluvialis apricaria</i> [A140] • Grey plover <i>Pluvialis squatarola</i> [A141] • Lapwing <i>Vanellus vanellus</i> [A142] • Knot <i>Calidris canutus</i> [A143] • 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] • Greenshank <i>Tringa nebularia</i> [A164] • Black-headed gull <i>Chroicocephalus ridibundus</i> [A179] • Wetland and Waterbirds [A999]
Blasket Islands SAC [002172]	89km south-west, 95km hydrological connection	<ul style="list-style-type: none"> • Reefs [1170] • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] • European dry heaths [4030] • Submerged or partially submerged sea caves [8330] • Harbour porpoise <i>Phocoena phocoena</i> [1351] • Grey seal <i>Halichoerus grypus</i> [1364]

Site Name [Site Code]	Approximate Distance from the Site	Summary of Qualifying Interests / Special Conservation Interests
Kilkieran Bay and Islands SAC [002111]	70km north, 117km hydrological connection	<ul style="list-style-type: none"> • Mudflats and sandflats not covered by seawater at low tide [1140] • Coastal lagoons [1150] • Large shallow inlets and bays [1160] • Reefs [1170] • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritima</i>) [1330] • Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410] • Machairs (* in Ireland) [21A0] • Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or <i>Isoeto-Nanojuncetea</i> [3130] • Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>) [6510] • Otter <i>Lutra lutra</i> [1355] • Harbour seal <i>Phoca vitulina</i> [1365] • Slender naiad <i>Najas flexilis</i> [1833]
Slyne Head Islands SAC [000328]	106km north-west, 134km hydrological connection	<ul style="list-style-type: none"> • Reefs [1170] • Common bottlenose dolphin <i>Tursiops truncatus</i> [1349] • Grey seal <i>Halichoerus grypus</i> [1364]

9.4.1.2 Non-statutory Designations

There is only one non-statutory designation for nature conservation within 2km of the Site namely Tarbert Bay pNHA, which is located 125m to the south of the Site. Tarbert Bay pNHA site consists of a sandy intertidal bay fringed by saline vegetation, and deciduous woodland. The site is important for wintering waterfowl as it overlaps with River Shannon and River Fergus Estuaries SPA (004077).

9.4.2 Habitats

A description of the habitats within the Site is provided below in the order that they are listed in *A Guide to Habitats in Ireland*¹⁹ and are also shown in Figure 9.2, EIAR Volume III.

¹⁹ Fossitt (2000). *A Guide to Habitats in Ireland*.

FL7 Reservoir

A reservoir of approximately 0.4ha is present in the east of the Site, surrounded by grassland.

GA2 Amenity grassland

Several small areas of amenity grassland are present in the north and east of the Site, adjacent to the main road that runs through it. Dominant species are red fescue *Festuca rubra*, annual meadow-grass *Poa annua*, and Yorkshire fog *Holcus lanatus*, while broadleaved herbs including creeping cinquefoil *Potentilla reptans*, ribwort plantain *Plantago lanceolata*, dandelion *Taraxacum officinale* agg., and daisy *Bellis perennis* are also common.

GS2 Dry meadows and grassy verges

Dry meadows and grassy verges are present throughout the Site, with the largest area in the extreme east of the Site surrounding the service reservoir. Smaller areas are spread across the Site, with larger areas in the north of the Site, and at the southern limit of the Site. Species composition is largely similar across all grassland plots, and the dominant species are cock's-foot *Dactylis glomerata*, Yorkshire fog, and creeping bent *Agrostis capillaris*. A range of other grasses and forbs are also present, including red fescue, false oat-grass *Arrhenatherum elatius*, sweet vernal grass *Anthoxanthum odoratum*, curly dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, bush vetch *Vicia sepium*, knapweed *Centaurea nigra*, ribwort plantain, meadow vetchling *Lathyrus pratensis*, red clover *Trifolium pratense*, white clover *Trifolium repens*, greater plantain *Plantago major*, and creeping buttercup *Ranunculus repens*.

ED2 Spoil and bare ground

A large area of bare gravel is present in the centre of the Site, in the area where the OCGT building and other ancillary buildings will be built. To the south of this is a portion of the 240V electrical substation which is also covered by bare gravel. The four large fuel tanks in the west of the Site are surrounded by bare gravel, although in places this is beginning to become vegetated and therefore forms a mosaic with recolonising bare ground. A gravel road runs parallel to the coast at the north of the Site.

ED3 Recolonising bare ground

Strips of recolonising bare ground are present immediately adjacent to the gravel road in the north of the Site. Species present include catsear *Hypochaeris radicata*, dandelion, mouse ear hawkweed *Pilosella officinarum*, red and white clover, ribwort plantain, sedges *Carex* sp., bird's foot trefoil *Lotus corniculatus*, creeping buttercup, sea mayweed *Tripleurospermum maritimum*, and silverweed *Argentina anserina*.

BL3 Buildings and artificial surfaces

Buildings and the tarmacked roads throughout the Site make up the majority of the Site. The existing Tarbert HFO Power Station is the largest building on site, followed by the combined area of the four large fuel oil tanks. Other associated buildings, including the pumphouse, storage buildings, and temporary construction portacabins make up the remaining area.

WS1 Scrub

The majority of scrub within the Site is present in the area surrounding the fuel oil tanks and is dominated by bramble *Rubus fruticosus* agg, with willow *Salix* sp. also common. Other species including Yorkshire fog, cock's-foot, meadow vetchling, ribwort plantain, and field horsetail *Equisetum arvense* are also present in this area. A narrow margin of scrub at the eastern boundary of the Site comprises willow,

gorse *Ulex europaeus* and bramble. Another narrow strip of scrub is present between the two substation areas and is composed largely of bramble and willow, with some mature trees also present, including spruce *Picea* sp., pine *Pinus* sp., willow, sycamore *Acer pseudoplatanus* and young oak *Quercus* sp.

WS3 Ornamental/non-native shrub

Two small plantings of ornamental shrubs are present to the east of the existing Tarbert HFO Power Station building. Species present include *Fuschia*, *Escallonia*, barberry *Berberis* sp., New Zealand holly *Olearia macrodonta*, willow leaf hebe *Hebe salicifolia*, and bramble.

WL2 Treelines

A single treeline is present in the south of the Site beyond the service reservoir, consisting of pine and spruce, ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna* and bramble. A second treeline is present along the border of the amenity grassland to the north of the service reservoir and is composed mainly of sycamore.

LR2 – Moderately exposed rocky shores

A small area of exposed rocks is present along the northern boundary.

LS5 – Mixed sediment shores

A narrow strip of sandy and muddy shoreline is present within the Site boundary at the north of the Site.

MW2 Sea inlets and bays

A concrete channel in the south of the Site connects to the inlet of the Shannon Estuary beyond the southern boundary and permanently contains tidal seawater.

9.4.3 Protected and Notable Species

The baseline conditions with respect to protected and notable flora and fauna species are provided under the following sub-headings. Where relevant, records of the species identified by the desk study are referred to under the species sub-headings.

9.4.3.1 Flora

The NBDC database search returned four records of rare plant species within 2km of the Site, listed in Table 9.7. No protected plant species were identified during the field survey. Bee orchid *Ophrys apifera* was recorded immediately to the west of the Site, within the adjacent TEG site, and although this species is not included within the FPO, it is considered to be of County level importance.

Table 9.7: Records of rare plant species from the NBDC Dataset.

Species	Record Count	Date of Last record	Designation
Pale flax <i>Linum bienne</i>	1	31/12/1999	Threatened Species: Near threatened
Shepherd's-needle <i>Scandix pecten-veneris</i>	1	31/12/1929	Threatened Species: Regionally Extinct
Potato bryum <i>Bryum bornholmense</i>	3	02/03/2009	Threatened Species: Near threatened
Slender pocket-moss <i>Fissidens exilis</i>	3	31/12/1966	Threatened Species: Vulnerable

9.4.3.2 Bats

A review of the NBDC database did not return any records of bat species within 2 km of the Site.

All buildings to be removed were assessed as having Negligible suitability for roosting bats, and therefore it is considered that roosting bats will not be impacted by the Proposed Development.

Three walked transect surveys carried out between June and August 2023, inclusive, recorded low levels of bat activity, limited to three species of bat: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and Leisler's bat *Nyctalus leisleri*. The locations of all recordings of bats during the walked activity transects are shown on Appendix 9C EIAR Volume II - Figure 9C.1, 9C.2 and 9C.3. As can be seen from the following summary, activity was generally restricted to a limited number of locations within the SSE Tarbert site:

- Leisler's bats were noted flying high across the Site, particularly in front of the existing Tarbert HFO Power Station building.
- Soprano pipistrelles were noted often foraging around the trees behind the security building at the entrance to the SSE Tarbert site, along the tree line at the outflow stream, along the road towards the NORA tank farm and other scattered locations throughout the Site.
- Common pipistrelles were recorded along the road towards the NORA tank farm and other scattered locations throughout the Site.

9.4.3.3 Otter

The NBDC returned one record of otter within 2km of the Site. The NBDC also returned eight records of otter within the 10km grid square (R04), within which the Proposed Development lies, and the records include spraint observations, and a live sighting of three individuals approximately 6km to the south-west, from 2015.

Anecdotal evidence from the power station staff reveal otter was once a common sight, particularly at the intake area of the Site (north-east side) where otter would feed from the crustaceans filtered out of the seawater and caught in the screening areas. However, otter are now rarely seen, if at all, since the Tarbert HFO Power Station has ceased production. An otter survey was undertaken on 7 June 2023 and 30 August 2023 of the Site and surrounding coastal habitat. No confirmed evidence of otter was found during the field survey, and no otter holts or resting sites were identified. Mammal push-unders and trails were noted in the general area of the intake area which could be attributed to otter. A potential sprainting site was also noted along the shoreline but the spraint was too old to be confirmed as otter. Otter are assumed to be present in the area, based on the precautionary principle and due to the presence of suitable otter habitat.

9.4.3.4 Badger

The NBDC returned three records of badger within 2km of the Site, and 19 badger records within the 10km grid square (R04), within which the Site lies, most of which are records of roadkill or badger setts. The latter records are all from the last 20 years, with the closest record also being the most recent (from 2018).

A badger survey was undertaken on 7 and 8 June and 30 August 2023 whereby all areas within the Site and immediate surroundings were checked for evidence of badger. A number of trails, likely attributable to badger were noted around the wider power station site with a badger snuffle hole found in the trees behind the security building at the Site at the power station entrance. Badger dung was confirmed beside the reservoir; however, no confirmed badger setts were found. Anecdotal evidence from power station staff suggest badgers are infrequently seen and live off site, entering and leaving by the front gate, and are therefore assumed to occasionally visit the Site.

9.4.3.5 Other Small Mammals

The NBDC database search returned only one record of hedgehog within 2km of the Site, from 2015. No hedgehogs were recorded incidentally during the course of ecological field survey in 2023, however Irish hare was observed on all field survey visits, either individually or in small groups, with five individuals observed on one occasion. Suitable habitat for hedgehog is limited on Site, whereas woodland and scrub to the south of the Site provides more ideal habitat. Given the presence of suitable habitat on Site, it is assumed hedgehog may be present on Site.

9.4.3.6 Reptiles

There were no protected and notable reptile records returned by the NBDC database within 2km of the Site. Common lizard was not observed during field surveys, and there is limited suitable habitat for this species within the Site, and this species is assumed to be absent from the Site.

9.4.3.7 Breeding Birds

Records of 134 bird species were returned by the NBDC database search within 2km of the Site, of which 37 species are protected under Annex I, II or III of the Birds Directive. Six species are on the Red list of birds of conservation concern in Ireland, and 35 species appear on the Amber list, see Appendix 9D EIAR Volume II. Many of these bird records are identified at the 10km grid reference resolution, within which the Site occupies a small extent. Therefore, it cannot be confirmed if these birds were recorded within the Site itself, or in the more extensive area outside the Site within the same or adjacent 10km square. Furthermore, many of these birds are not breeding birds, and are likely to be winter visitors.

A total of 33 species were recorded during the breeding bird surveys carried out in 2023. Of those, eleven species are Amber-listed birds of conservation concern, and two are Red-listed species, see Appendix 9D EIAR Volume II. Many of the birds recorded during the surveys were observed singing and carrying food, and recent fledglings were also noted, demonstrating that birds are likely to be using the Site to breed. An occupied swallow *Hirundo rustica* nest was observed in the south of the Site, and a single ringed plover nest was identified with four eggs in the west of the Site. Between the first and second surveys, the four eggs disappeared likely due to predation and the ringed plover pair had established a new nest with four eggs, approximately 100 m to the east of the original nest site. Except for these nests, no other nests were identified, however, numerous birds were observed entering and exiting scrub in the west of the Site, and it is highly likely that birds use this area for nesting.

The breeding bird assemblage comprises species typical of urban, grassland and coastal landscapes. Although several species of conservation concern were observed, they are widespread and common

in Ireland. The results of the breeding bird surveys are shown on Figures 9D.1 and 9D.2 of Appendix 9D EIAR Vol II.

9.4.3.8 Wintering Waterbirds

Non-breeding bird surveys of waterbirds were carried out twice per month from November 2022 to March 2023, inclusive, within the Site plus an approximate 500 m buffer (hereafter referred to as the 'survey area'). A total of 22 species were recorded during the non-breeding bird surveys, of which nine species are qualifying species of River Shannon and River Fergus Estuaries SPA. Black-headed gull was the most abundant species and was present on seven of the eight surveys. Other than black-headed gull, the only species for which a peak count of more than 20 birds was recorded were:

- cormorant.
- common gull.
- dunlin.
- snipe.
- teal; and
- wigeon.

Habitats for non-breeding birds are limited within the Site, and most waterbirds were recorded outside of the Site, within the Tarbert Island bay, and Tarbert Bay to the south of the Site.

The results of the non-breeding bird surveys are shown on Figures 9E.1 – 9E.10 of Appendix 9E EIAR Vol II.

9.4.3.9 White-tailed Eagle

Following a successful initial reintroduction programme from 2007-2011, the National Parks and Wildlife Service (NPWS) began a second phase of the white-tailed eagle reintroduction project to bolster the existing eagle population in Ireland. The eagle currently has a small breeding population spread across Counties Cork, Kerry, Clare, Galway and Tipperary. The latest reintroduction programme began in 2020 and released young eagles at a small number of sites, one of which was in the Lower Shannon estuary area. This release site has relevance for the Proposed Development. Whilst they are released at the end of the breeding season in August, the young eagles often remain close to the area they were released into before usually dispersing further across Ireland and sometimes even beyond (NPWS, pers. comm).

During the breeding and wintering bird surveys and all other visits to the Site, no white-tailed eagles were observed. No suitable nesting sites occur within the Site and although there is a small woodland copse situated between the SSE Tarbert site entrance and the ferry terminal, it is not considered a suitable nesting site given the constant high level of human activity in the area. Similarly, there is a substantial deciduous woodland block several hundred metres to the south of the Site, although it would be considered sub-optimal nesting habitat given its proximity to the busy ferry terminal (NPWS, pers. comm).

9.4.3.10 Invertebrates

Records of five notable species were returned by the NBDC database search within 2km of the Site, see Table 9.8.

Table 9.8: Records of notable invertebrate species from the NBDC dataset.

Species	Record Count	Date of Last record	Designation
Large red-tailed bumblebee <i>Bombus (Melanobombus) lapidaries</i>	1	21/04/2018	Threatened Species: Near threatened ²⁰
Dark green fritillary <i>Argynnis aglaja</i>	1	31/12/1984	Threatened Species: Vulnerable ²¹
Large heath <i>Coenonympha tullia</i>	3	31/12/1977	Threatened Species: Vulnerable ²¹
Marsh fritillary <i>Euphydryas aurinia</i>	6	31/12/1990	Threatened Species: Vulnerable ²¹ ; Annex II
Wall brown <i>Lasiommata megera</i>	1	31/12/1984	Threatened Species: Endangered ²¹

No notable invertebrates were recorded on Site.

9.4.3.11 Invasive Non-native Species

Flora

The NBDC database search returned several records of invasive plant species within 2km of the Site, see Table 9.9.

Table 9.9: Records of invasive plant species from the NBDC dataset.

Species	Record Count	Date of Last record	Designation
Common cord-grass <i>Spartina anglica</i>	2	05/05/2018	High Impact Invasive Species ²² ; Regulation S.I. 477 (Ireland)
Giant-rhubarb <i>Gunnera tinctoria</i>	2	16/09/2008	High Impact Invasive Species; Regulation S.I. 477 (Ireland)
Hairy rocket <i>Erucastrum gallicum</i>	1	31/12/1999	Medium Impact Invasive Species
Japanese knotweed <i>Reynoutria japonica</i>	1	23/04/2017	High Impact Invasive Species; Regulation S.I. 477 (Ireland)
Rhododendron <i>Rhododendron ponticum</i>	1	15/08/2007	High Impact Invasive Species; Regulation S.I. 477 (Ireland)
Spanish bluebell <i>Hyacinthoides hispanica</i>	2	21/04/2018	Regulation S.I. 477 (Ireland)
Sycamore <i>Acer pseudoplatanus</i>	11	30/07/2022	Medium Impact Invasive Species
Three-cornered garlic <i>Allium triquetrum</i>	2	07/04/2018	Medium Impact Invasive Species Regulation S.I. 477 (Ireland)

During field survey, sea buckthorn *Hippophae rhamnoides*, a medium impact scheduled invasive plant species was recorded in the west of the Site. Furthermore, winter heliotrope (low impact), was also recorded scattered within the Site as well as to the west of it.

Fauna

²⁰ FitzPatrick et al. (2006) *Regional Red List of Irish Bees*.

²¹ Regan et al. (2010). *Ireland Red List No. 4 – Butterflies*

²² O'Flynn, C., Kelly, J. and Lysaght, L. (2014). Ireland's invasive and non-native species – trends in introductions. National Biodiversity Data Centre Series No. 2. Ireland

Records of eight invasive animal species within 2km of the Site were provided from the NBDC, see Table 9.10.

Table 9.10: Records of invasive animal species from the NBDC dataset.

Species	Record Count	Date of Last record	Designation
Budapest slug <i>Tandonia budapestensis</i>	1	20/09/1977	Medium Impact Invasive Species
Common garden snail <i>Cornu aspersum</i>	2	20/09/1977	Medium Impact Invasive Species
Jenkins' spire snail <i>Potamopyrgus antipodarum</i>	6	10/08/2017	Medium Impact Invasive Species
Keeled slug <i>Tandonia sowerbyi</i>	1	20/09/1977	Medium Impact Invasive Species
Portuguese oyster <i>Crassostrea gigas</i>	1	27/07/2009	High Impact Invasive Species
Ruddy duck <i>Oxyura jamaicensis</i>	1	09/10/1981	High Impact Invasive Species; Regulation S.I. 477 (Ireland)
Fallow deer <i>Dama dama</i>	2	31/12/2008	High Impact Invasive Species; Regulation S.I. 477 (Ireland)
Sika deer <i>Cervus nippon</i>	1	31/12/2008	High Impact Invasive Species; Regulation S.I. 477 (Ireland)

No invasive non-native faunal species were observed during the field survey.

9.4.3.12 Marine mammals

The Lower Shannon River SAC is designated for its common bottlenose dolphins. During the wintering bird survey on the 15 February 2023 at high tide, two bottlenose dolphins were observed swimming and breaking water beside the existing oil supply jetty associated with the Tarbert HFO Power Station and NORA facility. No other marine mammals were noted in the surrounding coastal area, despite numerous visits to the Site.

9.4.4 Future Baseline

The construction phase of the Proposed Development will be approximately 29 months and is due to commence in late Q2 2024 (subject to receipt of planning permission). Therefore, the baseline for most of the Site at the time of construction is expected to be similar to that described in the baseline.

Construction of the TEG plant in the western part of the SSE Tarbert site, will significantly change the baseline ecological conditions of this area, through removal of grassland and scrub, which will change the distribution of some species (e.g., nesting birds). However, following decommissioning of the TEG site, lands will revert to bare ground as previous. Aside from this, there are no other known or likely land use changes, or changes to the terrestrial, coastal or marine environment within the Zol of the Proposed Development, that have the potential to significantly change the baseline ecological conditions at the time of construction of the Proposed Development.

Potentially relevant protected species (e.g., badger) could establish new locations used for shelter or protection, and it will be necessary to ensure compliance with the legislation protecting these species.

With the exception of changes to the TEG site, it is therefore expected that the current baseline conditions will remain largely unchanged by the time of construction of the Proposed Development.

9.4.5 Baseline in the Absence of the Proposed Development

The future baseline in the absence of the Proposed Development (the 'do nothing scenario'), taken for these purposes to be the situation 25 years from the time of commissioning, would likely be very similar to the current baseline. Whilst the future of the existing Tarbert HFO Power Station buildings remain uncertain given their redundancy, however, it is likely that they will be decommissioned and removed from the Site. Any infrastructure such as buildings, roads, and paths and existing vegetation remaining on Site will be maintained. Other parts of the Site will return to hardstanding. Habitats and species assemblage found to be present in the current baseline conditions will remain largely unchanged.

9.5 Potential Impacts

9.5.1 Features Excluded from Further Assessment

Relevant ecological features are those that are considered to be 'important' and have the potential to be affected by the Proposed Development²³. In view of the baseline data obtained through a desk study and field survey, the following features have been excluded from further assessment because there is considered to be no possible effect on them, through absence of the feature, clear absence of an impact pathway, or because they are of limited ecological value:

- **protected or notable native plants** - there are no known protected or notable native plant species within the Site. As previously stated, bee orchid was identified to the west of the Site but not within the Site boundary.
- **habitats – Reservoir, Amenity grassland, Spoil and bare ground, Buildings and artificial surfaces, Ornamental/non-native shrub, and Sea inlets and bays** - these habitats within the Site will either not be impacted by the Proposed Development or are of limited ecological value.
- **Mixed substrate shores, mixed sediment shores** - the construction / operation / decommissioning of the Proposed Development will have no impact on this habitat as no works will be carried out within it, and no changes from the current outfall system in place will be necessary.
- **amphibians** - there are no freshwater ponds or streams on Site, and the service reservoir is unlikely to support amphibians, as it is relatively large and deep and lacks suitable vegetation. Even if amphibians are present in the reservoir, they are likely to occur in very low numbers and will be unimpacted by the Proposed Development.
- **invertebrates** - the Site is of limited importance for notable butterflies and bees due to the buildings / hardstanding across most of the Site limiting the occurrence of flowers.

²³ CIEEM (2019). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.*

- **invasive non-native animal species** - invasive animal species recorded within 2 km of the Site include ruddy duck, fallow deer, sika deer, Portuguese oyster and four species of slug and snail. These species were not observed on site, and there is no mechanism by which the Proposed Development could cause a significant increase in these species and more importantly no realistic means by which the Proposed Development could spread them elsewhere.

Moreover, and as described above, there will be no construction on the shore or within the intertidal zone or marine environment. In addition, the Proposed Development will result in no material change to abstraction or discharge rates or other parameters that could impact on ecological features. There is therefore no possibility of impacts as a result of changes to coastal processes or operational discharges to the marine environment, which are therefore not considered for any ecological feature.

9.5.2 Importance of Ecological Features

Ecological features identified in the baseline conditions and not scoped out of detailed assessment (see Section 9.5.1), i.e., those that are considered 'important' (following CIEEM guidelines²⁴), are set out in Table 9.11, together with the rationale. Ecological importance has been assessed on a geographic scale following CIEEM guidelines²⁵.

For the purposes of defining geographical scale in this EIA, 'County' is defined as Co. Kerry, 'Local' as the area within 5km of the Proposed Development, and 'Site' as the Site and immediate surroundings.

Table 9.11: Importance of ecological features

Ecological Feature [Site Code]	Importance	Rationale
Lower River Shannon SAC (002165)	International	International nature conservation designation.
River Shannon and River Fergus Estuaries SPA (004077)	International	International nature conservation designation.
Blasket Islands SAC [002172]	International	International nature conservation designation.
Kilkieran Bay and Islands SAC [002111]	International	International nature conservation designation.
Slyne Head Islands SAC [000328]	International	International nature conservation designation.
Tarbert Bay pNHA	National	National nature conservation designation.
Habitats – Recolonising bare ground	Site	This habitat may support a variety of flora and fauna species. Given the limited quality and small extent of this habitat, is it assigned Site significance only.
Habitats – Dry meadows and grassy verges	Site	This semi-natural habitat is abundant and widespread across the Site and may support a variety of flora and fauna species, including invertebrates, small mammals, and breeding birds. Given the quality of this habitat, is it assigned Site significance only.

²⁴ CIEEM (2019). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.*

²⁵ CIEEM (2019).

Ecological Feature [Site Code]	Importance	Rationale
Habitats – Treelines	Site	This semi-natural habitat may support a variety of fauna species including breeding birds. Given the small extent and limited quality of this habitat, is it assigned Site significance only.
Habitats – Scrub	Site	This semi-natural habitat is widespread across the Site and may support a variety of flora and fauna species including breeding birds. Given the quality of this habitat, is it assigned Site significance only.
Bats	Site	There is limited foraging / commuting bat activity across the Site, mostly at the south of the Site. The species that predominately use the Site are common pipistrelle, soprano pipistrelle and Leisler’s bat, which are all relatively common and widespread in Ireland. The habitat within the Site is considered to be of Site importance as it provides limited foraging and commuting resource to bats in the local area, but is not sufficiently good quality to be valuable in a Local or County context.
Badger	Site	No evidence of badger setts was identified on Site. Badgers have been anecdotally using the woodland to the east of the Site and a snuffle hole and dung was recorded nearby the Site. Given the low usage of the Site and immediate surrounds by badger, including a lack of active resting sites, this species has been assigned Site importance only.
Otter	Local	Otters are legally protected in Ireland under the Habitat Regulations which transpose the Habitats Directive. Otters are likely present around Tarbert Island at least occasionally, however, no resting places were identified within the Site. As the Site appears to be used infrequently for foraging only, Local importance has been assigned.
Other protected mammals – red squirrel, hedgehog, Irish hare	Local	These species are protected under the Wildlife Acts. Hedgehog was not recorded during field survey, but could occur within the Site (records of hedgehog exist within 2km of the Site). Irish hare was recorded during field survey. This species is common and widespread, and the population within the Site is of Local importance.
Breeding birds	Local	Swallow were observed nesting in the Site, and ringed plover were nesting outside of the Site, but within the adjacent TEG Site. Several other species are considered to have bred within the Site, including meadow pipit, blackbird, twite and stonechat. Due to the presence of ringed plover, an SCI of the SPA, and nesting Red-Listed and Amber-Listed birds, the Site is considered to be of Local importance.
Wintering birds	County	Several SCI species of River Shannon and River Fergus Estuaries SPA were recorded adjacent to the Site, however no part of the Site itself was found to be used by large aggregations of waterbirds. The highest peak count for Dunlin, one of the SCI species, in the bay to the south of the Site was 250, which represents only 0.017% of the five year mean peak count. Therefore, although several SCI species of River Shannon and River Fergus Estuaries SPA have been recorded in the vicinity of the Site, given the low value of the terrestrial habitats within the Site and relatively small numbers of birds, wintering waterbirds have been assigned County importance, rather than anything greater which could have been applied given their association with the European site.
White-tailed eagle	National	Although no white-tailed eagles have been noted on site and no suitable habitat exists on it for them, it is known that a release site is located somewhere in the lower Shannon Estuary as part of the national white-tailed eagle reintroduction project. The eagles are on Annex I of the Birds Directive and are Red-listed in Ireland with only around 10 pairs of a breeding population. Any impacts to the species could result in significant effects at a national level.
Common lizard	Site	Common lizard is protected under the Wildlife Acts. It was not recorded during field survey, but could occur in habitats such as dry meadows and grassy verges and scrub within the Site and the surrounding

Ecological Feature [Site Code]	Importance	Rationale
		environment. No records of common lizard were returned from the desk study records. Any population of common lizard present is likely to small and insufficient to be valued as even of Local importance.
Invasive non-native plant species - sea buckthorn, winter heliotrope.	Negligible	These species are not important through ecological value but for their negative effects on biodiversity. The main risk is the potential for the spread of non-native species during construction. Sea buckthorn is medium impact scheduled invasive species These non-native invasive species can impact the local populations of native species.
Marine mammals	National	Bottlenose dolphins occur throughout the Shannon estuary just beyond the site. They are a qualified interest species of the Lower River Shannon SAC within which the area around Tarbert Island is regarded as a hotspot for them. On that basis, they are valued at National importance.

9.5.3 Potential Impacts of the Proposed Development

The following broad categories of impact could arise during the construction, operation and / or decommissioning of the Proposed Development and are considered, where potentially relevant, in relation to each of the ecological features scoped in to detailed assessment above:

- permanent and / or temporary loss or degradation of habitats during construction, and potentially decommissioning also;
- airborne pollution as a result of emissions during construction, operation and / or decommissioning of the Proposed Development;
- disturbance of animal species during the construction, operation and / or decommissioning due to increased noise, vibration, lighting, or the presence of personnel, plant and / or machinery;
- damage or destruction of the resting places of protected or notable animal species during construction and decommissioning of the Proposed Development;
- displacement of animal species during all phases of the Proposed Development;
- injury or mortality of plant or animal species during construction and decommissioning; and
- the spread of invasive non-native plant species during construction and decommissioning.

In accordance with guidance published by the Institute of Air Quality Management (IAQM)²⁶, the air quality study area for construction dust caused by plant and machinery was adopted as being the Site plus a 350m buffer, or a 50m buffer around the construction traffic route, extended to 500m from the Site entrance (Section 7.3.1.1), refer to Chapter 7 (Air Quality). The only sensitive ecological feature (*i.e.*, nature conservation designations or plant species) within the 50-500m screening distances for assessment of air quality impacts is River Shannon and River Fergus Estuaries SPA. However, River Shannon and River Fergus Estuaries SPA is not susceptible to dust due to the mobile qualifying bird interests, therefore, there is no further consideration of construction phase air quality changes within this chapter.

²⁶ Holman *et al.*, (2014). *A guide to the assessment of air quality impacts on designated nature conservation sites.*

There are no likely new pathways for waterborne pollution of habitats or species given industry-standard good practice mitigation measures will be implemented at all stages of the Proposed Development to meet legal and regulatory requirements (EIAR Chapter 12 Volume I). Whilst emissions to water are proposed, they will use existing outfalls and no increase in discharges are anticipated. This discharge will be regulated by a new IE Licence or by amendment of the existing IE Licence P0607-02, following a review. Due to the small volumes of uncontaminated water there will be no impacts on wetlands habitats or estuarine waters.

9.5.4 Impacts on Nature Conservation Designations

9.5.4.1 Construction Phase

A detailed assessment of the potential impacts (as per above) and effects of the Proposed Development on the relevant European sites of international nature conservation importance is provided in the AA Screening/NIS.

Tarbert Bay pNHA is largely encompassed within River Shannon and River Fergus Estuaries SPA (which is considered in the AA Screening Report/NIS), and is also designated for habitats suitable for wintering birds which is also an SCI of the aforementioned SPA. Therefore, impacts and effects on this pNHA will be identical to those reported for the SPA.

All the potential impacts of the Proposed Development are considered in the NIS. It is concluded that there will be no adverse effect on the integrity of any European sites as a result of the construction of the Proposed Development, alone or in-combination with any other plan or project. By inference, therefore, there will also be no adverse effect on the relevant pNHA site.

A conclusion of no adverse effects on site integrity can be drawn even where minor negative impacts are predicted, so long as these do not prevent the relevant conservation objectives of a given site from being met. Therefore, adopting EIA terminology, while there may be slight negative impacts on European sites from the construction of the Proposed Development, these will not be significant and will result in, at worst, **Negligible effects**.

9.5.4.2 Operational Phase

As stated above, full assessment of the potential impacts and effects of the operation of the Proposed Development on European sites can be found in the NIS. The potential for significant effects to arise on any SAC or SPA (and by association with designated SPA, Tarbert Bay pNHA) due to airborne pollution during operation was assessed in detail. This was based on air quality modelling carried out for the Proposed Development which is described in more detail in Chapter 7 (Air Quality). All other factors were also assessed based on the results presented in the other chapters of this EIAR. (E.g., Chapter 11 Noise and Vibrations).

It was concluded that there will be no adverse effect on the integrity of any of the relevant European sites because of the operation of the Proposed Development, so by inference there will be no adverse effect on Tarbert Bay pNHA site. For the purposes of EIA, and as set out above, there will be, at worst, **Negligible effects** sites designated for nature conservation during the operational phase.

9.5.4.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase are likely to be consistent with those of the construction phase. For the purposes of EIA, and as set out above, it is therefore concluded that there will be, at worst, **Negligible** effects on sites designated for nature conservation during the decommissioning phase.

9.5.5 Impacts on Recolonising bare ground

9.5.5.1 Construction phase

Habitat Loss

There will be minor loss of this habitat to facilitate the construction of the Proposed Development. The recolonising bare ground on Site is of relatively low quality and therefore of limited ecological value and any loss of this habitat type will be of **Site** significance.

9.5.5.2 Operational phase

There is no expectation of negative effects on recolonising bare ground during the operational phase. As the Proposed Development will be primarily controlled remotely, there is a likelihood that existing bare ground is colonised leading to a greater coverage or recolonising bare ground.

9.5.5.3 Decommissioning Phase

Areas of existing bare gravel may develop into recolonising bare ground if left undisturbed, therefore there may be loss of minor areas of this habitat during the decommissioning phase. However, the scale of the impacts are likely to be consistent with those of the construction phase, and thus effects are likely to be of **Site** significance only.

9.5.6 Impacts on Dry meadows and grassy verges

9.5.6.1 Construction Phase

Habitat loss

The majority of the grassland on Site will remain unimpacted by the Proposed Development, however, there may be minor loss of small areas of grassy verges to facilitate construction. The grassland within the Site is species-poor and of limited ecological value. Loss of small areas of grassland will consequently be of **Site** significance during the construction phase.

9.5.6.2 Operational Phase

There is no expectation of effects on dry meadows and grassy verges during the operational phase.

9.5.6.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase are likely to be consistent with those of the construction phase. For the purposes of EIA, and as set out above, it is therefore concluded that effects during the decommissioning phase will be of **Site** significance.

9.5.7 Impacts on Treelines

There will no loss of treelines to facilitate the Proposed Development, and there will be no impacts on trees arising from either the construction, operation or decommissioning phases.

9.5.8 Impacts on Scrub

There will be no loss of scrub to facilitate the Proposed Development, and there will be no impacts on scrub arising from either the construction or operation phase. It is unlikely that any areas to be impacted by the development will succeed to scrub, and thus no impacts on scrub are likely during the decommissioning phase.

9.5.9 Impacts on Sea inlets and bays

9.5.9.1 Construction Phase

Waterborne Pollution

There will be no works that could impact on Tarbert Island Bay outside of the Site boundary or the concrete channel within the Site boundary containing tidal seawater because of the pollution prevention measures outlined in Section 9.6. Therefore, no pollution effects are possible as a result of the Proposed Development. There will consequently be **No effect** on this habitat during the construction phase.

9.5.9.2 Operational Phase

Waterborne Pollution

The Proposed Development does not have a water requirement for cooling so there will be no abstraction from sea water or groundwater for process or cooling requirements. There will be some discharges to the estuary from the demineralisation process however, these will essentially be uncontaminated mains water with naturally occurring minerals removed from the mains water prior to use. Wastewater will be treated to adjust the pH to neutral range before discharge to an existing discharge point. There is likely to be an infrequent requirement for wash down of GT's prior to outages using mains water, and small volumes of waste water will be collected in a container for removal to a licenced waste facility. For the purposes of EIA, and as set out above, it is therefore concluded that there will be, at worst, **Negligible** effects during the operational phase.

9.5.9.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase are likely to be consistent with those of the construction phase. For the purposes of EIA, and as set out above, it is therefore concluded that there will be **Negligible** effect during the decommissioning phase.

9.5.10 Impacts on Bee Orchid

9.5.10.1 Construction Phase

The habitats where bee orchid was recorded were to the west of the Site, and a translocation of bee orchids was carried out prior to removal of habitats during construction for another project. The orchids were translocated to areas outside the boundaries of both projects. No other bee orchids were identified on site, and therefore the Proposed Development will have **No effect** on bee orchid.

9.5.10.2 Operational Phase

There are no impacts that could have a significant effect on translocated bee orchids during the operational phase. **No effect** is therefore predicted on this species.

9.5.10.3 Decommissioning Phase

There are no impacts that could have a significant effect on bee orchids during the decommissioning phase. **No effect** is therefore predicted on this species.

9.5.11 Impacts on Bats

9.5.11.1 Construction Phase

Habitat Loss

Bat activity within and surrounding the Site, was found to be low to moderate, at most, and was dominated by common pipistrelle, soprano pipistrelle and Leisler's bat. The results of the activity surveys found that foraging and commuting behaviour was observed scattered throughout the Site, but in relatively low levels. Bats showed a preference for areas of the SSE Tarbert site covered by a mosaic of scrub and dry meadows and grassy verges, and scrub, again to the south of the Site. Despite being well lit, light-tolerant pipistrelles were recorded along the main access road and site parking areas in the northeast of the Site, including in the main laydown area while Leisler's bats flew high overhead, not confined or restricted to habitats below.

The centre of the Site currently supports hardstanding and bare ground, and thus there will be no loss of natural habitats used by bats within this area to facilitate the construction of the Proposed Development. Furthermore, this area does not connect to high quality foraging habitat elsewhere in the surrounding area, so is unlikely to be an important commuting route for bats. This is supported by the results of the walked bat activity transects which did not identify any evidence of large numbers of bats, including in this location.

Given that the area in which the OCGT is to be built is hardstanding and bare ground which are of negligible suitability for commuting and foraging bats, there will be no loss of suitable habitat for bats, and the Proposed Development will have a **Negligible effect** on foraging / commuting bats.

Disturbance and Displacement

Artificial lighting used during the construction phase will be concentrated around the centre and north of the Site. This area does not appear to be an important commuting route as demonstrated by the low activity in this area. Therefore, disturbance here is unlikely to displace bats. Furthermore, during spring to autumn when bats are active, construction hours will largely coincide with daylight hours when bats are in their roosts. However, there may be limited periods towards the start and end of the season when bats are active during construction hours, or at other times when some construction activities that cannot be stopped are in progress and lighting is present. Given the baseline conditions, the low levels of bat activity recorded and the limited potential for lighting to coincide with periods of bat activity, it is very unlikely that construction lighting will have substantial impacts on bats. It is therefore concluded that there will be **Negligible** effects on bat activity.

Damage or Destruction of Roosts

No trees or structures were identified as having bat roost suitability. Therefore, there is consequently no realistic possibility of a loss of roost sites from the construction of the Proposed Development and **No effect** predicted.

Injury and Mortality

As there are no roost sites which could be lost to the Proposed Development, there is no realistic mechanism by which construction works could injure or kill a bat. **No effect** on bats is therefore expected from this theoretical impact.

9.5.11.2 Operational Phase

Disturbance

The construction laydown areas to the east of the Proposed Development are required during the construction phase only and will be removed and reinstated prior to the operational phase of the Proposed Development. No roost locations were identified during field surveys, thus all permanent infrastructure associated with the Proposed Development will be beyond the distance at which any disturbance can be expected to occur.

No effects are expected from disturbance of bats during the operational phase.

Displacement

Existing lighting around the Site is operational throughout the night. Permanent lighting will be required for the Proposed Development (refer to Appendix 5B, EIAR Volume II), and this will slightly extend the area over which artificial illumination affects area used by bats. However, this is not expected to have a significant impact on bats as field survey showed that low level activity occurs in the centre of the Site despite existing illumination. Moreover, common pipistrelle and soprano pipistrelle, which were the most frequently recorded species within the ZoI of the Proposed Development, are relatively light-tolerant species, and will actively forage around lighting units²⁷.

Similarly, bat foraging around the existing Tarbert HFO Power Station was recorded, suggesting that light and noise produced by the facility was not preventing bats from using this area.

It is therefore concluded that there will be, at worst, **Negligible** effects on bats during the operational phase.

9.5.11.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. There will be no loss of any habitat required to enable decommissioning, and a **Negligible effect** on bats is expected.

9.5.12 Impacts on Badger

9.5.12.1 Construction Phase

Habitat Loss

There will be no loss of suitable habitat for badger to facilitate the Proposed Development, and therefore **No effect** on badger.

Disturbance

As previously discussed, no evidence of badger was recorded during the field surveys. Therefore, there will be no potential for disturbance impacts to badger setts during construction. Any badgers visiting the Site are already predisposed to noise (e.g., from the neighbouring road and the existing Tarbert HFO

²⁷ Bat Conservation Trust and Institution of Lighting Professionals (2018).

Power Station). Construction will be confined to the Site, and construction of the electrical / fuel cable routes will be undertaken quickly given the nature of the works.

Negligible effects from construction-related disturbance are therefore predicted.

Displacement

Badger will continue to be able to move through the Site, to the extent currently afforded by existing routes. While there may be some physical barriers to ensure safety, badgers will continue to be able to access the Site through established gaps in perimeter fencing.

Negligible effects from construction-related displacement are therefore predicted.

Injury or Mortality

There will be a substantial increase in the volumes of vehicular traffic relative to current levels during the construction phase of the Proposed Development. There is therefore an associated increased risk of badger injury or mortality due to collision with vehicles. However, all construction vehicles within the Site will be limited to a maximum speed of 15km/h and main movements will be during the day when badgers are not active, and the risk will thus be considered to be negligible.

Other standard good practice mitigation measures will be implemented that avoid or reduce or, if necessary, offset for the risk of badger injury or mortality, as described in Section 9.6.

Considering both the availability of retained foraging habitat and the likely low numbers of badgers in the wider area, it is concluded that there will be **negligible** effect on badger during the construction phase.

9.5.12.2 Operational Phase

Disturbance

Given that no active badger setts are present within or in the vicinity of the Site, and that the majority of personnel will be on-site during the day, the potential for disturbance of badgers to be caused is very low. **Negligible** effects are predicted.

Injury or Mortality

As described in relation to the construction phase above, traffic will be restricted to a maximum speed of 15 km/h within the Site. The risk of collision injury or mortality as a result of the Proposed Development is low and any such incidences would be rare.

Negligible effects on badger are expected as a result of injury or mortality during the operational phase.

9.5.12.3 Decommissioning phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase and are therefore concluded to be negligible.

9.5.13 Impacts on Otter

9.5.13.1 Construction phase

Loss of Habitat

Whilst suitable habitat for otter exists surrounding the entire Tarbert Island coastline, there will be no loss of suitable habitat for otter to facilitate the Proposed Development, and therefore **No effect** on otter is predicted.

Disturbance

No otter resting sites were identified within the survey area and there is no potential for disturbance of animals using such a place of shelter. Otters currently living in the area are already habituated to a degree of human activity and are unlikely to be significantly further disturbed by construction works.

Negligible effects are expected on otter from construction-related disturbance.

Displacement

Otter will continue to be able to move freely across the Site, to the extent currently afforded by existing security fencing around the facility. While there may be some additional physical barriers to ensure safety, otter will continue to be able to access the Site through established gaps in perimeter fencing.

Negligible effects from construction-related displacement are therefore predicted.

Injury or Mortality

Injury by impact with construction traffic is improbable given the slow speed of vehicles on construction sites (15km/h). Given the lack of otter habitat within the Site compared to the surroundings, it would be unlikely otter would choose to enter a construction site during its operation. Therefore, the probability of otter harm during construction is very low.

For the purposes of EIA, and as set out previously, it is therefore concluded that there will be, at worst, **Negligible** effects during the construction phase.

9.5.13.2 Operational Phase

Disturbance

During the operational phase, the Proposed Development will be operated, maintained and managed by low numbers of SSE Tarbert personnel, similar to the current situation. Given the current level of human activity on-site, the Proposed Development is unlikely to cause any further disturbance impact to otters.

Negligible effects are expected on otter from operational-related disturbance.

9.5.13.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. There will therefore be, at worst, a **Negligible** effect during the decommissioning phase.

9.5.14 Impacts on Other Protected Mammals

9.5.14.1 Construction Phase

Desk and field survey information indicates that hedgehog may occur in the Site and immediately surrounding area, and Irish hare was observed on Site. These species are protected under the Wildlife Acts but are relatively common and widespread in Ireland.

Loss of Habitat

There will be a very minor loss of scrub and grassland habitat within lay down areas of likely value to hedgehog and Irish hare. However, areas of dry meadows and grassy verges will remain in various parts of the Site, and areas of suitable grassland, scrub and woodland to the south and east of the Site will be unaffected by the Proposed Development and continue to provide foraging and shelter opportunities for both species.

Negligible effects are expected on these species from habitat loss.

Injury or Mortality

There is potential, without mitigation, for Irish hare and hedgehog to be injured or killed during construction. However, as set out in Section 9.6, standard measures will be implemented to reduce the likelihood of such an occurrence (e.g., capping pipes, covering excavations etc.). Similarly, construction traffic will be limited to a speed of 15km/h and works will take place during daylight hours. The potential for collision mortality of most species is therefore low, although would be greater for hedgehog, which is particularly vulnerable to this impact. Given the life history of these small mammals (which have several offspring and, in some cases, several large litters per year), population recruitment is fairly to very rapid and loss of a small number of individuals would be very unlikely to have a major effect on local populations. There are also not likely to be very large populations of these species within the Site owing to the dominance of hardstanding and buildings, which offer no shelter to such species.

It is therefore concluded that, at worst, there could be a **Temporary Adverse effect of Site significance** for the duration of the construction period.

9.5.14.2 Operational phase

There are not considered to be any adverse impacts on Irish hare or hedgehog during the operational phase. **No effect** is therefore predicted on these species.

9.5.14.3 Decommissioning phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. Due to the potential for collision mortality with construction vehicles, a **Temporary Adverse effect of Site significance** could therefore arise.

9.5.15 Impacts on Breeding Birds

9.5.15.1 Construction Phase

A total of 33 species were recorded by the breeding bird survey carried out within the survey area. Of these, 13 species are considered to be of conservation concern. There is no habitat within the location of the proposed OCGT suitable for breeding birds, and no birds were identified breeding in this area.

Swallow were confirmed to be breeding in a small building in the south of the Site and ringed plover were breeding in the TEG site, adjacent to the Site. There will be no impacts on these birds as a result of the Proposed Development.

For breeding birds in general, there is a high likelihood (without mitigation) of accidental destruction of active nests during the construction phase through clearance of habitat, should this take place during the breeding season (01 March to 31 August, inclusive). Regardless of ecological significance, wild birds are protected under the Wildlife Acts from (in summary) wilful injury, wilful taking / destruction of eggs / nests and wilful disturbance of a wild bird on / near an active nest (with some exceptions in the Third Schedule; the hunting exceptions are not relevant to development).

The majority of passerine species do or can lay multiple clutches of eggs each year, thus the loss of one brood would likely be of relatively limited significance, and it can be expected that the local population of common breeding birds would easily recover, probably within the same year. The accidental destruction of active nests would not, therefore, adversely affect the local conservation status of any of the species thought to breed in the survey area.

It is therefore concluded that without mitigation, construction of the Proposed Development will have a **Temporary Adverse effect of Site significance**.

9.5.15.2 Operational Phase

During the operational phase, the Proposed Development will be operated, maintained and managed by SSE Tarbert personnel, similar to the current level of human activity on Site. This will ensure that the Proposed Development is unlikely to cause any impact to these breeding birds.

Operational activities will be restricted to areas of hardstanding which cannot support the nesting bird species identified in the baseline conditions. Operational activities will also comply with legislation protecting nesting birds. There will consequently be Negligible effect from mortality or injury of breeding birds.

The operational phase of the Proposed Development will have **Negligible** effects on breeding birds.

9.5.15.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. **Temporary Adverse effects of Site significance** on breeding birds are expected during the decommissioning phase.

9.5.16 Impacts on Wintering Birds

9.5.16.1 Construction Phase

Based on the results of the recent 2022 / 2023 non-breeding bird surveys (detailed in Appendix 9E EIAR Volume II), there is relatively little use of the Site itself, compared to other areas outside of the Site along the coast which appear to be important areas for waterbirds, predominantly Tarbert Island Bay, and Tarbert Bay, both located within River Shannon and River Fergus Estuaries SPA. There was some use of the jetty (120m to 220m from Site) by generally small numbers of cormorant and gulls, although a large flock of 372 roosting black-headed gulls was noted on one occasion at the pier at the end of the jetty.

No construction works on the shore, intertidal zone or in the marine environment will be required as part of the Proposed Development. There will consequently be no loss of habitat used by wintering birds.

It is important to note that visual stimuli tend to have greater disturbance effects on birds than noise stimuli alone (as stated in Cutts *et al.* (2009)). Cutts *et al.* (2013) sets out the level of disturbance that can be expected from various types of construction works due to the noise and visual stimuli they generate.

However, even if disturbance from construction of the Proposed Development were to occur, evidence presented by Cutts *et al.*, (2013) suggests that such impacts are likely to extend to a distance of around 300m for the most sensitive species. There is abundant alternative habitat beyond 300m of the proposed OCGT location which will be the main source location of disturbance, including large mud flats, rocky coast, and sea, which will remain available for use by foraging / loafing birds.

Even if infrequent disturbance were to occur (although as stated, this is considered to be unlikely), the largest area of habitat which appears most suitable to wintering bird species is more than 300 m to the southeast of the Proposed Development and screened by buildings. There is not expected to be any disturbance impacts on birds using this area for these reasons and with the addition of mitigation detailed in Section 9.6. Additionally, even in the event that birds were disturbed from other smaller areas of habitat closer to the Proposed Development (e.g., Tarbert Island Bay), there is abundant alternative habitat very nearby. Within the wider environment, this becomes increasingly the case.

For the purposes of EIA, and as set out above, it is therefore concluded that there will be a **Negligible** effect on non-breeding waterbirds during the construction phase.

9.5.16.2 Operational Phase

The Proposed Development will result in no material change to abstraction or discharge rates or other parameters that could impact on the occurrence or distribution of fish in the estuary which are prey for multiple waterbird species.

The routine operation and maintenance of the Proposed Development will not require access for personnel or machinery beyond the boundary of the Site. It is therefore highly unlikely that the operational phase of the Proposed Development could displace birds from this area.

For the purposes of EIA, and as set out above, it is therefore concluded that there will be, at worst, **Negligible** effects during the operational phase.

9.5.16.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. For the purposes of EIA, and as set out above, it is therefore concluded that there will be, be a **Negligible** effect on wintering birds during the decommissioning phase.

9.5.17 Impacts on White-tailed Eagles

9.5.17.1 Construction Phase

Following consultation with NPWS, it is known that the lower Shannon estuary has been one of the release sites for the national white-tailed eagle re-introduction programme. However, given that there is no habitat for the birds on Site to rest, breed or forage and that there are only limited trees at the front

of the power station site, away from the area where most construction works will take place, the construction of the Proposed Development has very limited potential for any significant disturbance on white-tailed eagles that occur in the Tarbert Island area.

There is a low risk of disturbance during the construction phase of the Proposed Development, especially during sensitive periods from mid - June into late Autumn when there is the highest likelihood of birds occurring in the area. Noise from piling is anticipated to fall below disturbance thresholds in areas potentially used by white-tailed eagles. Outside of this period the potential for disturbance is negligible.

For the purposes of EIA, and as set out above, it is therefore concluded that there will be, at worst, a **Temporary Adverse effect of National significance** during the construction phase.

9.5.17.2 Operational Phase

During the routine operation and maintenance of the Proposed Development, there will be no suitable habitat within the Site or within its ZoI for breeding or feeding. Birds may however forage and commute along the Shannon Estuary but would not be subject to any adverse impacts from the Proposed Development. For the purposes of EIA, and as set out above, it is therefore concluded that there will be, at worst, **Negligible** effects during the operational phase.

9.5.17.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. By the time of decommissioning, it is anticipated that the Irish re-introduced population of white-tailed eagles will have become well established and dispersed across Ireland. No habitat will be available for the eagles on the Site, therefore impacts will be the same as during construction. For the purposes of EIA, and as set out above, it is therefore concluded that there will be a **Negligible** effect on white-tailed eagles during the decommissioning phase.

9.5.18 Impacts on Common Lizard

9.5.18.1 Construction Phase

Common lizard was not identified on Site, and there is little habitat present likely to support lizard. Any population on Site will be small owing to the dominance of hardstanding / buildings, and if present at all this species will be largely confined to scrub, grassland, and road verges. Aside from the centre of the Site which does not support suitable habitat, only small areas of scrub and grassland likely to be impacted by the Proposed Development may provide opportunities for shelter, foraging and basking. Other suitable habitat will be retained scattered throughout the Site and is present in the surrounding area.

The small area of habitat to be impacted is not known to support lizards and will only be impacted temporarily. Therefore, any impacts on a small population of common lizard are considered to result in a **Temporary Adverse effect of Site significance**.

9.5.18.2 Operational Phase

There are no impacts that could have a significant effect on common lizards during the operational phase. **No effect** is therefore predicted on this species.

9.5.18.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. Should there be a requirement to remove habitat which could be used by this species, therefore, a **Temporary Adverse effect of Site significance** is possible.

9.5.19 Impacts on Invasive Non-native Species

9.5.19.1 Construction Phase

During the field survey, sea buckthorn (medium impact species) was recorded within the adjacent TEG site. Removal of this invasive species is being managed under that project, and thus it is unlikely that this species will spread to the Site. Even if seeds or propagules of this species enter the Site, they are unlikely to establish in the existing gravel hardstanding.

It is therefore expected that there will be **Negligible** effect from invasive non-native species.

9.5.19.2 Operational Phase

Invasive plant species within the adjacent TEG site will be removed prior to construction, and there is no potential pathway by which invasive non-native species could be spread during the operational phase of the Proposed Development. **No effect** is predicted.

9.5.19.3 Decommissioning Phase

Invasive species could potentially enter the Site during the operational phase of the Proposed Development, either via natural means or through introduction from Site personnel and vehicles. Invasive species could potentially have an impact on localised vegetation by crowding out existing flora, however, impacts are likely to be localised and therefore a Temporary Adverse effect of Site significance is possible.

9.5.20 Impacts on Marine Mammals

9.5.20.1 Construction Phase

Common bottlenose dolphins are a qualifying interest of Lower River Shannon SAC and two dolphins were observed swimming close to the jetty. Harbour porpoise and grey seal are QI of Blasket Islands SAC, harbour seal is a QI of Kilkiean Bay and Islands SAC, and bottlenose dolphin and grey seal are QI of Slyne Head Islands SAC.

No construction works on the shore, intertidal zone or in the marine environment will be required as part of the Proposed Development, consequently there will be no loss of habitat used by marine mammals.

Based on the hearing sensitivity studies, Southall *et al.* (2007) developed a series of sound thresholds, for auditory injury (i.e., hearing damage), both permanent and temporary, and disturbance for marine

mammals. For cetaceans, the thresholds are given in two metrics, an instantaneous sound pressure level (SPL) and a time averaged sound exposure level (SEL). The thresholds are:

- Permanent injury to hearing (called Permanent Threshold Shift) at:
 - SPL of 230 dB re: 1 μ Pa (peak) (flat); and
 - SEL at 198 dB re: (20 μ Pa)²

Behavioural disturbance (from a single impulsive sound source such as rock breaking) at:

- SPL of 224 dB re: 1 μ Pa (peak) (flat); and
- SEL at 183 dB re: 1 μ Pa²-s (Mht)

The Proposed Development will result in “regular” construction noise (typically 50-70dBA) with Mechanical Plant Sound Power Levels, including piling, (measured at source) typically ranging from around 94-122dBA LW (refer to Chapter 11, EIAR Volume 1). Underwater marine mammals are not considered to be vulnerable to noise which passes through air because the transmission of sound from air into water involves a significant loss of acoustic energy, primarily due to the impedance mismatch between the two media (Pierce, 2019). Although harbour and grey seal rest on land at haul out sites, the Shannon Estuary does not appear to be regularly used by either species, and only several individuals have been recorded during the past three surveys (Cronin et al. 2003; Morris and Duck, 2019) at significant distance from the Site.

While vibrations arising from piling depend on numerous factors, such as the energy used for piling, ground composition, and distance, vibrations attenuate rapidly and vibrations from hammer piling are very much reduced at distances of even up to 20m, and negligible at 50m (BS5228-1:2009+A1:2014 ‘Code of practice for noise and vibration control on construction and open sites’ (BS5228)). The same guidance provides piling vibration prediction methodologies up to a maximum of 110m, meaning that construction activities do not produce large enough vibrations to warrant concern beyond this range. The Shannon Estuary is located approximately 25m from the closest anticipated piling works, and vibrations from piling are not expected to reach the estuary at a level to disturb marine mammals. It may be the case that animals very close to the shore may be able to detect land-based piling noise but it is unlikely this would cause any significant disturbance. As highly mobile animals, marine mammals in the vicinity can easily move away.

Furthermore, habitats immediately within the estuary closest to the area of proposed piling are mudflats which, at low tide, extend at least 120m from the closest piling location. Therefore, at low tide, dolphin and harbour porpoise will not be within 100m of the piling works. At high tide, water depth above the mudflats at this location is unlikely to be greater than 3m, and at this shallow depth it is unlikely that either species will spend significant time at this depth in proximity to the piling works and are rather to be found in deeper waters of the Shannon Estuary further from the Site. Therefore, construction works are not anticipated to impact marine mammals.

For the purposes of EIA, and as set out above, it is therefore concluded that there will be a **Negligible** effect on marine mammals during the construction phase.

9.5.20.2 Operational Phase

The Proposed Development will result in no material change to abstraction or discharge rates or other parameters that could impact on the occurrence or distribution of fish in the estuary which are prey for marine mammals.

The routine operation and maintenance of the Proposed Development will not require access for personnel or machinery beyond the boundary of the Site. It is therefore highly unlikely that the operational phase of the Proposed Development could displace marine mammals from this area.

For the purposes of EIA, and as set out above, it is therefore concluded that there will be, at worst, **Negligible** effects during the operational phase.

9.5.20.3 Decommissioning Phase

The impacts which could arise during the decommissioning phase of the Proposed Development are likely to be consistent with those described for the construction phase. For the purposes of EIA, and as set out above, it is therefore concluded that there will be, be a **Negligible** effect on marine mammals during the decommissioning phase.

9.6 Mitigation Measures

Whilst significant adverse effects are not predicted, the following mitigation measures will be implemented as part of standard good practice. These are well-developed and have been successfully implemented on infrastructure projects across the country and there is a high degree of confidence in their success. They can therefore be treated as embedded mitigation. These will include:

- prior to the commencement of construction, a confirmatory survey for protected or notable species will be carried out to check for any changes to the baseline conditions described in this chapter. This will be completed not more than six months prior to the commencement of construction. The results will be reported and communicated to the appointed Contractor and appropriate avoidance / mitigation measures implemented, as required;
- all personnel involved in the construction, operation and decommissioning of the Proposed Development will be made aware of the ecological features within the ZOI of the Proposed Development and the mitigation measures and working procedures that must be adopted. This will be achieved as part of the induction process and through the delivery of Toolbox Talks;
- a suitably qualified Ecological / Environmental Clerk of Works (ECoW) will be employed for the duration of the construction of the Proposed Development. The ECoW will advise on and monitor implementation of ecological mitigation measures and compliance with legislative requirements in relation to ecological features. The ECoW will also carry out pre-works checks for protected and / or notable species and provide other ecological advice as necessary;
- a Contractor's Construction Environmental Management Plan (CEMP) will be updated prior to commencement of construction, to address any changed identified by confirmatory surveys.

The CEMP will set out all environmental management measures and the roles and responsibilities of construction personnel. A CEMP has been prepared as part of this planning submission, refer to Appendix 5A EIAR Volume II;

- during all phases of the Proposed Development (construction, operation and decommissioning), pollution prevention measures will be adopted including the following:
 - controls and contingency measures will be provided to manage run-off from construction areas and to manage sediment, as detailed in the CEMP (Appendix 5A, EIAR Volume II);
 - all oils, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided at the storage location and at locations across the Site;
 - in order to avoid pollution impacts to soils and vegetation during construction, all refuelling and servicing of vehicles and plant will be carried out in a designated area which is bunded and has an impermeable base, and at least 50m from Lower Shannon Estuary;
- as far as possible, works that will directly impact upon areas of vegetation that could be used by nesting birds will be undertaken outside of the breeding season, 01 March to 31 August, inclusive. Should vegetation clearance works be required during the breeding season, a pre-works check for active nests will be carried out by the ECoW or other suitably experienced ornithologist. Such checks will be completed no more than 24-48 hours in advance of clearance works taking place as nests can be quickly established. Where any active nests are identified, suitable species-specific exclusion zones will be implemented and maintained until the breeding attempt has concluded;
- sightings of protected or notable species within the Site during the construction phase will be recorded. If any evidence or sightings of protected species is found within 30m of works, then works in that area will stop immediately and the ECoW will be contacted for further advice;
- any excavations will be left with a method of escape for any animals that may enter overnight, and will be checked at the start of each working day to ensure no animals are trapped within them;
- any pipes will be capped or otherwise blocked at the end of each working day, or if left for extended periods of time, and following checks to ensure no animals are trapped;
- as far as possible, works will be carried out in daylight to avoid or minimise the risk of disturbing protected species such as foraging / commuting bats and badger; and
- any artificial lighting required for construction works will be directional to avoid or minimise light spill.

Mitigation is not necessarily required where the effects on an ecological feature are considered to be Not Significant (which in this chapter is taken to be all effects of Local or Site significance). Given that effects on ecological features at this development are not significant, no mitigation is required.

The implementation of mitigation does not replace or negate the requirement for legislative compliance.

9.6.1 Protected Species Licensing

No licensing is currently considered necessary as there will be no impacts on the resting sites of protected species. However, if the ECoW should subsequently find new resting places of protected species, such as badger setts or bat roosts during pre-commencement surveys, that will be damaged, destroyed or disturbed by works, then derogation licence(s) may be required for those works to proceed. The ECoW will advise accordingly if this situation arises.

9.6.2 NPWS Contact Prior to Piling

NPWS will be contacted as a minimum of 1 week prior to commencement of any pile driving activity that may be planned. This will prevent the risk of significant disturbance to any white-tailed eagles during their sensitive periods.

9.6.3 Monitoring

On-going monitoring for protected species will be carried out by the ECoW, as required, for the duration of the construction phase. If this identifies a need for additional avoidance or mitigation measures, these will be communicated to the construction contractor and will be implemented with ECoW guidance as necessary, to ensure legislative and planning policy compliance on protected species and biodiversity preservation.

9.7 Residual Impacts

For the purposes of this chapter, only effects which are judged to be of County significance or higher are considered to be Significant, in EIA terms. On this basis, even in the absence of mitigation there are not expected to be any Significant effects on important ecological features from the construction, operation or decommissioning of the Proposed Development.

Following implementation of mitigation, the following non-Significant adverse effects are predicted from the Proposed Development:

- a permanent adverse effect of Site significance on recolonising bare ground and dry meadows and grassy verges due to minor loss during the construction and decommissioning phases;
- a temporary adverse effect of Site significance to other protected mammals; Irish hare and hedgehog during the construction and decommissioning phases as a result of potential mortality;
- a temporary adverse effect of Site significance to breeding birds due to the loss of habitat and destruction of nests during the breeding season during the construction and decommissioning phases; and
- a temporary adverse effect of Site significance on common lizard due to minor habitat loss during the construction and decommissioning phases.

All other effects, following implementation of mitigation, are predicted to be **Negligible** or **absent**.

9.8 Cumulative Impacts

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location²⁸.

Projects that have the potential to impact cumulatively with the Proposed Development to cause significant environmental effects are identified in Chapter 20 (Interactions EIAR Volume I) and are listed below in Table 9.12. Consideration has been given in this EIAR to those identified projects that may be proposed, approved and existing at the same time as the Proposed Development, which involve a permanent loss of habitat which is similar to that within the Site (and which may therefore support the same species), and / or which are of a sufficient scale that any impacts they may generate could realistically be expected to act cumulatively with the Proposed Development.

²⁸ CIEEM (2019).

Table 9.12: Projects within 5km of the Proposed Development which have the potential to act in-combination.

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
23350	31/03/2023	The Proposed Development will comprise of the following on a site measuring approximately 6.9 hectares: (1) removal of existing cable joint, bay within Tarbert generating station, 220Kv switchgear within the existing Tarbert substation compound and associated 220Kv cabling; (2) two no. new lengths of 220Kv underground cabling measuring approximately 340m each, running between two no. new underground cable joint base in Tarbert generating station and the connection point at Tarbert substation; (3) the new 220kv switchgear bay within the existing Tarbert substation compound comprising associated electrical equipment, including cable sealing ends, insulators, overhead conductors, surge arrestors, lightning masts and lighting poles; and (4) all ancillary site development works including temporary construction compound and a layout areas, site preparation works and ground levelling as required to facilitate the works. Tarbert generating station is licensed by the Environment Protection Agency (EPA) under the Industrial Emissions (IE) License (Ref: P0607-02). The Proposed Development includes works located within the IE License Boundary of Tarbert Generating Station which is an Upper Tier Establishment to which the Chemicals Act (Control of Major Accidents Hazards Involving Dangerous Substances) Regulations 2015 (the COMAH Regulations) apply. This planning is accompanied by a Natura Impact Statement (NIS).	EirGrid PLC	Further Information Requested	Within the site boundary.	<p>The EirGrid proposed development boundary and the SSE Proposed Development boundary overlap and both occur within Tarbert Island, Co. Kerry. The proposed works for each project may overlap for the duration of the EirGrid development from Q3 2024 to Q4 2025.</p> <p>Any habitat loss to facilitate the development will likely be mainly to bare ground. Any loss of recolonising are ground, and dry meadows and grassy verges will be minor and temporary, as both will likely natural succeed back to the existing conditions.</p> <p>Minor disturbance to hares and possibly to hedgehogs will be negligible, given that most of the works will be to habitats not generally used by these species.</p> <p>Potential loss of habitat used by breeding birds will be minor, and alternative habitat will continue to be available during the overlap of both projects.</p>
EE08.31583 8	17/02/2023	Application received under Section 4 of the Development (Emergency Electrical Generation) Act 2022 (the Act) for a	SSE Generation Ireland Ltd.	Granted Conditional 29/03/2023	0m - adjacent to the Site.	Given that development is scheduled to be completed prior to the start of the Proposed Development and there will be no overlap in construction phases,

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
		Proposed Development located at Tarbert Power Station, Tarbert, in the townland of Tarbert Island, Co. Kerry.				there will be no in-combination effects with the Proposed Development.
2332	23/01/2023	For development within the Moneypoint Generating Station, Carrowdotia North and Carrowdotia South, Kilimer, County Clare (Eircode V15 R963) which is licenced by the Environmental Protection Agency (EPA) under an Industrial Emissions (IE) Licence (Re P0605-04) and Upper tier COMAH site and therefore falls under the requirements of the Control of Major Accident Hazard Regulations (COMAH) Regulations, 2015. The development, which will be located at various locations within the station complex, will consist of land-based Site Investigations (SI) works comprising of boreholes and trial pits across the site.	Electricity Supply Board (ESB)	Granted Conditional 15/03/2023	3.66km north-west.	This application is for minor works which will be carried out at significant distance from the Proposed Development and which will not impact any of the habitats or species for which there may be residual effects. Therefore, no in-combination effects are anticipated.
21549	25/05/2021	A high inertia synchronous compensator (HISC) compound containing 1 no. HISC unit enclosed within a steel clad framed style structure (12.1m max height) and supported by 8 no. electrical equipment containers (containing ancillary power supply products including a static frequency converts, mv switchgear, exciters, lv distribution, control room, welfare and office, main auxiliary and start-up electrical transformers, generator circuit breaker, switchgear equipment, external cooler units and 1 no. back up diesel generator and associated diesel storage tank; (b) 220Kv high voltage gas insulated switchgear (GIS) substation compound containing a GIS substation building with all control and hv equipment within a single storey building (13.2m max height). The building will be surrounded by a compound road and contained within a 2.6m high galvanised steel palisade fence; (c) a battery storage compound containing 5 no. battery storage containers, enclosed in steel containers of dimensions approximately 13m by 2.5m by 3m, housing individual battery components with 2 fitted external	Donal Murphy Glencloosagh Energy Limited	Granted Conditional 19/07/21	1.7km south-west	This application is a significant distance from the Proposed Development and will not impact any of the habitats or species for which there may be residual effects. Therefore, no in-combination effects are anticipated.

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
		HVAC systems for each unit and supported by 13 no. inverter stations, 14 no. auxiliary transformers and control container; (d) 220kv underground cable to the existing adjoining EirGrid substation; (e) associated elements comprising various underground cables and ducts, equipment plinths, boundary security fence, compound lighting and palisade gates and fencing, security lighting, CCTV, internal access roads, hardstanding areas and all necessary foundations works for the above compounds. The planning application is on lands where grid stabilisation facility was previously permitted under planning register no 19/115. Planning permission to construct the development is sought for a period of 10 years. A Natura Impact Statement has been prepared in respect of the Proposed Development and accompanies the application.				
20850	18/09/2020	For changes to the previously permitted peak power plant development (planning ref. 13/138). It is proposed to change the energy source for the charging of the battery storage system (BESS) containers from diesel to charging off the national grid and to change the permitted layout for electrical equipment based on the consequence of the proposed change in energy source at an area located within the permitted development. It is also proposed to include a small metering enclosure adjacent to the constructed substation building within the permitted development. A five-year planning permission is being sought for the Proposed Development.	Kilpadouge Green Energy Ltd	Conditional 12/11/2020.	1.75km south-west	This application is a significant distance from the Proposed Development and will not impact any of the habitats or species for which there may be residual effects. Therefore, no in-combination effects are anticipated.
19746	26/09/2019	For development, on a c. 1.8 ha site located within Moneypoint Generating Station, Carrowdotia North and Carrowdotia South, Kilimer, County Clare (Eircode V15 R963) which is licensed by the EPA under an Industrial Emissions (IE) Licence (Ref. P0605-04) and Upper Tier	ESB	Granted Conditional 20/11/2019.	4.24km north-west.	This application is a significant distance from the Proposed Development and will not impact any of the habitats or species for which there may be residual

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
		<p>COMAH sire and therefore falls under the requirements of the Control of Major Accident Hazard Regulations (COMAH), 2015. The Development, which will be located within a fenced compound c. 0.94ha. will consist of a 300 to 400 MVA (electrical rating) synchronous condenser, including the following elements: a) a generator and Flywheel building (c. 962 sq.m., c.15m high) to house equipment including the generator, flywheel lube oil skid, air compressor and pumps; b) supporting items of plant located within the compound including *cooling equipment (c. 690 sq. m., c. 3m high); c* 7m high modular containers to house electrical and control equipment (total area of c 384sq.m); * a generator step-up transformer (c.150 sq. m, c. 3m high); *c 7m high modular containers to house electrical and control equipment (total area of c. 384 sq.m); *a generator step-up transformer (c.150 sq. m c.8m high), auxiliary transformer (c.48 sq. m., c.3m high); and * an above-ground oil separator and collection pit (c.72sq.m) connections to existing site services networks including electrical, water and wastewater and an underground surface water attenuation tank connecting to existing surface water drains; c) all other ancillary and miscellaneous site works including site clearance; site access, internal roads and development of areas of hardstanding including a maintenance lay-down area; and d) the development will be bounded by a c.3m high chain-link fence. Site access will be by means of a new c. 2.7m high palisade gate accessed from existing roads within the station site. Planning permission is being sought for a duration for a duration of 10 years.</p>				effects. Therefore, no in-combination effects are anticipated.
19115	12/02/2019	The development will consist of a grid stabilisation facility comprising of the construction up to 4 no. rotating stabilizers, 5 no. battery storage containers, 1 no. control room, 2 transformers and ancillary equipment within a site area of	Glencloosagh Energy Limited	Granted Conditional 25/10/2019	1.65km south-west	This application is a significant distance from the Proposed Development and will not impact any of the habitats or species for which there may be residual

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
		<p>approx. 1.46 hectares. It is proposed to connect the Proposed Development to the adjacent EirGrid substation by underground cable which will traverse the permitted and under construction peaking plant. The rotating stabilisers will be supported by 10 no. electrical equipment rooms which will contain ancillary power supply products including a static frequency convert (SFC), mv switchgear, exciters and lv distribution, and step-up / down transformers. A heating ventilation and air conditioning system (HVAC) will be attached to each rotating stabiliser, 4 no. auxiliary transformers also proposed. The battery containers will house individual battery components with 2 no. fitted external HVAC system for each. 13 no. invertor stations and 14 auxiliary transformers are proposed for the battery containers. The entire site will consist of various underground cables and ducts, boundary securing fence, compound lighting and palisade gates and fencing, new internal access track, security lighting, CCTV, hardstanding areas and all necessary foundation works. Permission is also sought for 2 electrical transformers (up to 220kv), associated hv equipment and underground electrical grid connection cabling and ducting connecting the development to the national grid at the adjacent ESB/EirGrid substation. Planning permission is sought for a period of 10 years. A Natura Impact Statement accompanies this application.</p>				effects. Therefore, no in-combination effects are anticipated.
18520	21/06/2018	<p>The development at Moneypoint ESB will consist of a c7.5 MW capacity battery storage facility within a secured compound, on a 0.4 Ha site, and will subject to detailed design, commercial and technical considerations, include (a) up to 3 No. battery storage units (each typically comprising a containerised battery (c 12.2m x 2.5m x 3.2m), HVAC (c2.7m x 2.7m), inverter (c. 3m x 3m) and transformer (c 3.3m x 3.3m); (b) a 28 sq. m single-storey switchgear</p>	ESB	Granted Conditional 24/07/2018	Approximately 4.5km north- west of the Site	This application is a significant distance from the Proposed Development and will not impact any of the habitats or species for which there may be residual effects. Therefore, no in-combination effects are anticipated.

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
		building; (d) ancillary electrical plant including a transformer and var support units; (e) a c.15.6m high lightning mast and c. 18m high SCADA communications mast; (f) a 2.6m high chain-link fence and vehicular access gates via the existing station road to the south of the site; (g) ancillary site works including site clearance and the installation of site services.				
18392	27/04/2018	Tarbert Island Tarbert Co Kerry construct a battery storage facility within a total site area of up to 2.2278ha, to include 50 no. self-contained battery container units with associated HVAC cooling units, 13 converter and 13 step up transformer container units, associated compound cabling and ducting, a grid transformer, a single storey substation / control building with welfare facilities, a cable route grid connection to the existing ESB substation building, maintenance lighting, security fencing, a CCTV monitoring system, and all associated ancillary infrastructure on lands within the Tarbert generating facility. A ten-year planning permission is being sought to construct the development.	SSE Renewables (Ireland) Limited	Granted Conditional 15/01/2019	Adjacent to the Site boundary.	<p>This development, if constructed, would be constructed following the commissioning of the Proposed Development, and thus, there will be no overlap of construction phases between the two developments, and therefore no simultaneous disturbance to protected species for which there may be residual effects from the Proposed Development.</p> <p>This development may potentially involve removal of minor areas of recolonising bare ground and dry meadows and grassy verges, both of which are common and widespread habitats.</p> <p>No in-combination effects are considered likely due to the time factors involved.</p>
18878	10/09/2018	For a 10-year permission to construct a battery energy storage system (BESS) facility on a total site area of up to 0.6ha that will provide grid balancing services to the Irish electrical grid, to include up to 26 no. self-contained battery container units with associated heating ventilation and air conditioning systems (HVAC), power conversion systems	Shannon Clean Tech Ltd	Granted Conditional 23/09/2019	1.86km south-west	This application is a significant distance from the Proposed Development and will not impact any of the habitats or species for which there may be residual

Planning Application	Date Submitted	Summary Details	Applicant	Status	Distance from the Site	Potential for In-Combination Effects
		(PCS), step-up transformers, control systems and ancillary electrical components, 1 no. single – storey substation control building and associated electrical infrastructure, 1 no. 110kV generator transformers, all necessary ground and foundation works, associated compound cabling and ducting, palisade security fencing and lighting, CCTV security cameras, new site access from existing private road, temporary construction compound and all associated ancillary infrastructure and site development works. A Natura Impact Statement is now submitted in support of the application.				effects. Therefore, no in-combination effects are anticipated.

It was determined that there is no potential for cumulative effects given the distance to any proposed developments, limited habitat loss within the Site, and lack of overlap between the construction phases.

9.9 Summary

With the above mitigation in Section 9.6 implemented, all of the effects are mitigated and will be **Not Significant**, either through construction pollution controls or implementation of measures to avoid significant harm to protected species populations. Thus, there will be **No Significant** effect to biodiversity and nature conservation as a result of the Proposed Development.