6.6.1.2 Protected Flora

No botanical species listed under the Flora (protection) Order (1999, as amended 2015), listed in the EU Habitats Directive (92/43/EEC), or listed in the Irish Red Data Books were recorded on the site. All species recorded are common in the Irish landscape. No rare and protected plant species recorded in the desk study, including those obtained from NPWS data request, were recorded within the site.

6.6.1.3 Invasive species

No species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations, 2011 were recorded during the surveys.

6.6.1.4 Evaluation of habitats

6.6.1.4.1 *Grassland habitats*

Improved agricultural grassland (GA1) and Dry meadows and grassy verges (GS2) are present within the site. These habitats, although some contain small areas of semi-natural habitat that are of some local importance for wildlife are common and widespread in the local and wider landscape. Therefore, these habitats have been assessed as of Local Importance (*Lower value*).

6.6.1.4.2 *Scrub (WS1) and Hedgerow (WL1)*

Scrub habitat within the site is largely dominated by gorse while hedgerows are dominated by both gorse and bramble. This habitat is of local importance to local wildlife (NRA, 2009) and therefore, has been assigned as of Local Importance (*higher value*) as, these habitats are sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or populations of species that are uncommon in the locality although of high biodiversity value locally, it is common and widespread in the wider area and are sites or features containing common or lower value habitats, including naturalized species that are nevertheless essential in maintaining links and ecological corridors between features of higher ecological value.

6.6.1.4.3 *Spoil and bare ground (ED2), Recolonising bare ground (ED3), Earth banks (BL2) & Buildings and artificial surfaces (BL3)*

These habitats are common and widespread in the wider area. The habitats have been assessed as of Local Importance (*lower value*) as they are largely associated with artificial site access tracks and are of low biodiversity value.

6.6.1.5 Fauna in the Existing Environment

6.6.1.5.1 *Badger*

During the multidisciplinary walkover surveys a comprehensive search for badger and signs of badger was undertaken. In the eastern section of the EIAR Study Area, adjacent to existing Turbines 1 and 11, and 12, strong indications of badger were recorded adjacent to hedgerows and along sand tracks. These included tracks (Plate 6-17), snuffle holes, and latrines (Plate 6-19). Although no setts were identified, considering the levels of activity in this area, it is likely that a sett is in close proximity to the EIAR Study Area. The Proposed Development will not result in a loss of any habitat for badger.

Plate 6-17 Badger tracks recorded on a sand track adjacent to Turbine 1.

Plate 6-18 Latrine recorded along hedgerow habitat in close proximity to Turbine 12.

6.6.1.5.2 Otter

No watercourses were recorded within the EIAR Study Area. However, watercourses immediately downgradient of the Proposed Development were surveyed for otter. No signs of otter, including resting or breeding sites were recorded, but they did provide suitable commuting and foraging habitat for the species and are likely to be utilised by otter, at least on occasion. The Proposed Development will not result in a loss of any habitat for otter.

6.6.1.5.3 Bats

Manual bat activity surveys including dusk emergence and transect surveys took place in 2023. Bat activity was recorded on all surveys. Species present included Common pipistrelle (*Pipistrellus pipistrellus*), Leisler's bat (*Nyctalus leisleri*), Soprano pipistrelle (*Pipistrellus pygmaeus*) and *Myotis* spp. Ground-level static surveys also took place where Common pipistrelle, Leisler's bat, Soprano pipistrelle, Brown long-eared bat (*Plecotus auratus*), Nathusius' pipistrelle (*Pipistrellus nathusii*), and *Myotis* spp. were recorded.

Five structures were identified and inspected as part of the roost survey effort. These structures were identified as Potential Roosting Features (PRFs). One structure with *Moderate* roosting potential was identified within the EIAR Study Area during surveys carried out.

As per the Collision Monitoring Report included as Appendix 6-2, a total of three bat fatalities were discovered at Castledockrell Wind Farm during the Collision Monitoring Surveys between November 2022 and October 2023.

Bat activity levels were typical considering the nature of the site. A full assessment of the bat activity at the site are included in the Bat Report provided in Appendix 6-1 to this Chapter. The Bat Report considered the results of the Collision Monitoring Survey which is included in Appendix 6-2.

6.6.1.6 Aquatic Surveys

The findings of the aquatic surveys for each survey location are summarised in Table 6-11. Note, locations 3 and 4 were not suitable for kick sampling.

Table 6-11 – Summary of the undertaken aquatic surveys down gradient of the EIAR Study Area

Survey Location	Grid Reference	In relation to WF	Main land use	Q-value
Location 1	S94297 50137	South of WF	Pasture	Q3
Location 2	S90419 47425	Southeast of WF	Pasture	Q2
Location 3	S91716 49767	West of WF	Pasture	No sample taken
Location 4	S92418 50327	Northwest of WF	Pasture	No sample taken
Location 5	S94297 50137	Northeast of WF	Pasture	Q2

6.6.2 Importance of Ecological Receptors

Table 6-12 below lists all identified receptors and assigns them an ecological importance in accordance with the Guidelines for Assessment of Ecological Impacts of National Road Schemes (NRA, 2009). This table also provides the rationale for this determination and identifies the habitats that are KERs. These ecological receptors are considered in Section 6.7 of this report and mitigation/ measures will be incorporated into the Proposed Development where required, to avoid potential significant impacts on the features.

Table 6-12 Key Ecological Receptors identified during the assessment.

Ecological feature or species	KER	Reason for inclusion as a KER
Protected Sites		
National Sites › Slaney River pNHA *National Importance*	Yes	This National Site is potentially hydrologically connected to the Proposed Development and has been identified as being within the likely Zone of Influence This designated site has been assessed as of National importance and is included as a KER as there is potential for indirect effects on this site during the operational and decommissioning stages of the development via water pollution. **Therefore, this National Site is included as a KER.**
European Sites › Slaney River Valley SAC (000781) › Wexford Slobs and Harbour SPA (004076)	Yes	These European Sites have been identified as being within the Likely Zone of Influence and are assessed fully in the NIS that accompanies this application: These sites are assigned International importance and are included as KERs as there is potential for indirect effects on

Ecological feature or species	KER	Reason for inclusion as a KER
Protected Sites		
International Importance		them via water pollution during the operational and decommissioning stages of the development. **Therefore, these European Sites are included as KERs.**
Habitats		
› **Improved Agricultural Grassland (GA1)** › **Earth banks (BL2)** › **Buildings and artificial surfaces (BL3)** › **Spoil and bare ground (ED2)** › **Recolonising bare ground (ED3)** *Local Importance (lower value)*	No	These habitats, although some contain small areas of semi-natural habitat that are of some local importance for wildlife are common and widespread in the local and wider landscape. These habitats are assigned Local Importance (lower value) and are therefore **not** included as KERs.
› Hedgerow (WL1) › Dry meadows and grassy verges (GS2) › Scrub (WS1) *Local Importance (higher value)*	No	These habitats have been assigned as of Local Importance (*higher value*) as they contain high biodiversity value and help maintain links and ecological corridors between features of higher ecological value and are likely to be utilised by protected faunal species. However, there will be no loss of these habitats as a result of the Proposed development. Therefore, these habitats are **not** included as a KER.
› Aquatic receptors Local Importance (*higher value*) to International Importance.	Yes	While no watercourses or drainage ditches were identified within the EIAR Site Boundary, tributaries of Slaney River are located downgradient of the EIAR Study Area. European and National Sites are located along and downstream of the Slaney River. There is, therefore, potential for indirect effects on surface and groundwater systems via deterioration of water quality arising from the operational and decommissioning stages of the Proposed Development. The potential for significant effects on aquatic species, including otter, is restricted to indirect effects on their habitat resulting from water pollution (as noted above). Therefore, Aquatic receptors **are** included as a KER.
› Badger Local Importance (*higher value*)	No	Although no badger setts were identified within the site, strong indications of badger presence were recorded within the eastern section of the EIAR Study Area, adjacent to Turbines 1 and 11. These were mainly found adjacent to

Ecological feature or species	KER	Reason for inclusion as a KER
Protected Sites		
		hedgerows and along sand tracks. Such indications included tracks, snuffle holes, and latrines. The Proposed Development will involve the extension of the operational life of the existing Castledockrell Wind Farm. There will be no construction works and the wind farm will continue to operate as it currently operates. There will be no loss of badger habitat or disturbance of badger as a result of the extension of the operational life of the windfarm and therefore, badger is **not** included as a KER.
› **Bats**	Yes	All bat species in Ireland are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Additionally, in Ireland, bat species are afforded further protection under the Birds and Natural Habitats Regulations (2011) and the Wildlife Acts 1976 (as amended). The habitats within and surrounding the EIAR Study Area are likely to be utilised by bat populations of Local Importance (***higher value***). Bats are likely to forage and commute within the vicinity of the Proposed Development. Five PRFs were identified and inspected as part of the roost survey effort. None of these structures will be removed as a result of the Proposed Development. The Proposed Development has the potential to result in direct impacts on bats as a result of collisions with the turbines. Therefore, bats **are** included as a KER.
› **Marsh Fritillary**	No	**No suitable habitat for marsh fritillary was recorded within the EIAR Study Area. Additionally, there will be no loss of habitats that could potentially provide significant suitable habitat for this species.** **Therefore, marsh fritillary are not included as a KER.**
› **Other fauna**	No	No species of conservation concern or protected under Annexes of the EU Habitats Directive were recorded. Although other common species may occur within the site, at least on occasion, no potential for significant effect has been identified on any other faunal species associated with the Proposed Development and are thus **not** included as KERs.

6.7 Ecological Impact Assessment

6.7.1 Do-Nothing Scenario

If the Proposed Development were not to proceed, 11 no. of the turbines on the existing Castledockrell Wind Farm will be decommissioned in August 2025, as per the Condition 7 of the planning application granted by An Bord Pleanala (Ref: PL 26.211725),

Condition 8 of the original Planning Permission states the following in relation to the decommissioning of the Proposed Development:

> *'Upon termination of the use of the wind farm, the mast and turbines shall be dismantled and removed from the site and the site shall be restored to its existing condition in consultation with the planning authority. Prior to the commencement of development, the developer shall lodge with the County Council a cash deposit, a bond of an insurance company, or other security to secure the satisfactory reinstatement of the site on the cessation of the project. The form and amount of the security shall be agreed between the Council and the developer or, in default of agreement, shall be determined by An Bord Pleanála.'*

Should the Decommissioning Plan, as set out in the Planning Conditions for the existing Castledockrell Wind Farm be implemented, there is potential for direct habitat loss due to the potentially extensive ground works required to remove existing access tracks and the turbine foundations. There is also potential for run off of pollutants to down gradient watercourses and habitats identified as KERs. A more environmentally sensitive approach is outlined for the end of the proposed extended operational period (i.e., in 20 years), as set out in Section 6.7.4 below, and in the Decommissioning Plan, included as Appendix 4-4 to this EIAR. The effect of decommissioning (as per the original planning application) is considered to have a short-term, moderate negative impact in the context of this EIAR.

6.7.2 Construction Phase

As described in Chapter 4 of the EIAR, no construction activities or alterations to the existing Castledockrell Wind Farm beyond routine maintenance activities are proposed as part of this application. Therefore, there will be no potential for impacts resulting from construction stage activities, including habitat loss, run-off of pollutants during construction activities and spread of invasive species and no further assessment is required.

6.7.3 Operational Phase

This section assesses the potential operational phase impacts associated with the Proposed Development. During the operational phase, the windfarm will continue to operate as it has done since it became operational. There will be no ground-disturbing works associated with the operational phase, no natural drainage features will be altered and there will be no direct or indirect discharges to natural watercourses during the continued operation of the Proposed Development.

The Proposed Development is expected to have a lifespan of c. 20 years, commencing from the date of expiration of the existing permission in August 2025. The monitoring of the existing Castledockrell Wind Farm will continue at an off-site control centre, and thus, the site is unstaffed and there will be no production of wastewater.

Each turbine will continue to be subject to a routine maintenance programme involving regular checks and intermittent changing of consumables, including oil changes. In addition, there will be a requirement for unscheduled maintenance, which could vary between resetting alarms to major component changing requiring a crane. Typically, maintenance traffic will consist of four-wheel-drive

vehicles or vans. The wind farm manager will continue to attend site regularly to perform inspections and oversee maintenance works. The use of small quantities of hydrocarbons may be required from time to time in order to operate generators on site to power the turbines during grid outages, if required.

Taking a highly precautionary approach, there is potential for accidental spillage of pollutants during the operational phase of the Proposed Development including routine maintenance activities on the site.

An assessment of the potential effects on biodiversity as a result of an accidental spillage event during the operational phase of the development is presented in the following sections. A range of mitigation measures to ensure that there are no significant residual effects on biodiversity or designated sites as a result of the Proposed Development are also included in the sections below.

6.7.3.1 Effects on Habitats

The operation of the Proposed Development will not result in any additional land take or loss of any habitats and as such there is no potential for any significant effects in this regard.

Potential for impacts on aquatic and other sensitive habitats as well as on aquatic species identified as KERs during operation is assessed in detail in Table 6-13 below.

6.7.3.1.1 *Effects on Water Quality (Rivers, Streams, Groundwater and Sensitive Aquatic Faunal Species).*

Table 6-13: Assessment of Potential Impacts on Rivers, Streams and Sensitive Aquatic Faunal Species

Description of Effect	**Note: Whilst this impact assessment is in the habitats section, it also assesses the effect of the Proposed Development on aquatic species including salmonids, lamprey, white-clawed crayfish, European eel, aquatic invertebrates, otter and other water dependent species. The Proposed Development will have no direct impact on the aquatic habitat of these species and there is no potential for disturbance. The only pathway for effect to occur is as a result of water pollution and this is discussed in this section in relation to habitats and species.** Taking a highly precautionary approach, there is potential for accidental spillage or leaks of pollutants during the operational phase, including routine maintenance activities on the site, and therefore potential for run off of pollutants to watercourses and groundwater within and downstream of the site, potentially affecting water quality and supporting habitat quality for aquatic species. Such pollution events are considered highly unlikely as all vehicles and plant are regularly maintained in good working condition. These impacts on water quality are fully described in Chapter 9: '*Hydrology and Hydrogeology* of this EIAR and are described here in relation specifically to biodiversity.
Characterisation of unmitigated effect	Although such pollution events are considered highly unlikely as all vehicles and plant are regularly maintained in good condition, in the absence of best practice and regular maintenance, the potential effect on water quality during the operational phase of the Proposed Development has been assessed as a

	short-term slight reversable impact on aquatic habitats and the aquatic fauna they support, of local, National, and International importance.
Assessment of Significance prior to mitigation	Significant effects on water quality are not anticipated at any geographic scale during the operation of the Proposed Development. However, mitigation will be employed to ensure that there will be no negative effects on sensitive aquatic receptors at all.
Mitigation	Whilst no significant effects on water quality are anticipated during the operational phase of the Proposed Development, any potential for effects on water quality associated with the operational phase drainage of the site has been fully mitigated through appropriate design and mitigation as fully described below: › All plant and machinery to be serviced before being mobilised to site; › No plant maintenance completed on-site, any broken-down plant removed from site to be fixed; › Should it be required on site, refuelling will be completed in a controlled manner using drip trays at all times on impermeable surfaces; › Mobile bowsers, tanks and drums stored in secure, impermeable bunded storage areas a minimum of 50m from open water; › Only designated trained operators authorised to refuel plant on-site; and › Procedures and contingency plans set up to deal with emergency accidents or spills.
Residual Effect following Mitigation	No potential for significant effect has been identified at any geographic scale as a result of the Proposed Development. The residual impact will be the same for any selected turbine that is within the range of dimensions for which planning permission is sought.

6.7.3.2 Effects on Fauna during Operation

6.7.3.2.1 *Loss or Degradation of Supporting Habitat*

The operational phase of the Proposed Development will not result in any loss of supporting habitat for protected fauna. As described previously in this EIAR, the existing Castledockrell Wind Farm will continue to operate under the same management regime and the only works on site will be maintenance and servicing of existing infrastructure.

Taking a precautionary approach there is potential for indirect effects on otter and other aquatic species such as salmonids, lamprey, white-clawed crayfish, European eel, and aquatic invertebrates due to accidental spillage or leaks of pollutants during the operational phase, including routine maintenance activities on the site. Such an event could create potential for run off of pollutants to watercourses and habitats downstream of the site, potentially affecting water and habitat quality and supporting habitat quality for these species.

The potential for deterioration of water quality has been assessed in Table 6-13 above and is not repeated here.

6.7.3.2.2 *Disturbance /Displacement*

There will be no significant increase in anthropogenic activity as a result of the Proposed Development. With the exception of bat species (which are considered in Section 6.7.3.2.3 below), no potential for disturbance/displacement of any other faunal species was identified.

6.7.3.2.3 Assessment of Potential Effects on Bats during operation

A full assessment of potential effects on bats during the operational phase of the Proposed Development is included in the Bat Report provided in Appendix 6-1. The Bat Report considered the results of the Collision Monitoring Survey which is included in Appendix 6-2.

Overall, bat activity levels were typical of the nature of the site, which is agricultural with moderate to high levels of bat activity recorded during the static detector surveys as well as walked and driven transects undertaken. The Proposed Development relates to the extension of operation of an existing Castledockrell Wind Farm. Although the surveys identified high levels of bat activity, it doesn't appear that the existing Castledockrell Wind Farm is affecting local bat populations.

Site-level collision risk for all high collision risk bat species was ***Low***. Overall bat activity levels were typical of the nature of the site, which is predominantly grassland with moderate to high levels of bat activity recorded during the static detector surveys as well as the walked transects undertaken.

Ecobat was unavailable for a cross-site analysis of 2023 data as the platform has been undergoing maintenance since late 2022 with no proposed timeline of a relaunch. Therefore, data were assessed on a site-specific basis.

At the end of each year, the efficacy of the mitigation/curtailment programme will be reviewed, and any identified efficiencies will be incorporated into the programme. The requirement for continued post-consent monitoring will also be considered. Should no bat fatalities be recorded in Year 1, curtailment (where applicable) in Year 2 and Year 3 could be reduced/re-evaluated or removed with monitoring continuing to inform this strategy.

NatureScot Guidelines recommend that all wind turbines (where practically possible) are subject to 'feathering' of turbine blades when wind speeds are below the cut-in speed of the existing turbine (4m/s) and there remains uncertainty of the risk posed to bats. This means that the turbine blades are pitched at 90 degrees or parallel to the wind to reduce their rotation speed to below two revolutions per minute while idling. This measure has been shown to significantly reduce bat fatalities (by up to 50%) in some studies (NatureScot, 2021).

In accordance with NatureScot and having consideration of NIEA Guidelines, blade feathering will be implemented as a standard across all proposed turbines when wind speeds are below the cut-in speed of the turbine.

There will be no changes in infrastructure, layout or landscape as part of the Proposed Development. No loss or damage to commuting or foraging habitats are anticipated. Given the extensive area of habitat that will remain undisturbed throughout the site, no significant effects with regard to loss of commuting and foraging habitat are anticipated. Bats were observed emerging from a stone shed within the EIAR Site Boundary during two of the surveys. Additionally, all structures and trees will be retained, thus no loss or damage to roosts is anticipated. Consequently, there is no potential for significant effect regarding the loss or disturbance of roosting habitat.

The Proposed Development is predominantly located within grassland habitat. There will be no net loss of linear landscape features for commuting and foraging bats and there will be no loss of any roosting site of ecological significance. The habitats on the site will remain suitable for bats. No significant displacement of individuals or populations is anticipated.

Following mitigation outlined above there is no potential for any significant residual effect at any geographic scale as a result of the Proposed Development.

6.7.4 Decommissioning Phase

Full details of decommissioning are provided in Section 4.6 of Chapter 4: Description of this EIAR. Whilst all above-ground turbine components will be removed in compliance with the conditions of the permitted existing wind farm, their foundations, internal roads, and underground cable ducting will be left in situ as this is considered the more environmentally prudent option. To remove the volume of reinforced concrete from the ground could result in significant ecological impacts such sediment release into the wider environment.

During decommissioning, there is potential for accidental spillage or leaks of pollutants from machinery, and therefore potential for run off of pollutants to watercourses and groundwater downstream of the site, potentially affecting water quality and supporting habitat quality for aquatic species.

Such pollution events are considered highly unlikely as all vehicles and plant are regularly maintained in good working condition.

However, whilst no significant effects on water quality are anticipated during the decommissioning phase of the Proposed Development, any potential for effects in this phase the has been fully mitigated through appropriate design and mitigation as described below:

- All plant and machinery to be serviced before being mobilised to site;
- No plant maintenance completed on-site, any broken-down plant removed from site to be fixed;
- Should it be required on-site refuelling will be completed in a controlled manner using drip trays at all times on impermeable surfaces;
- Mobile bowsers, tanks and drums stored in secure, impermeable bunded storage areas a minimum of 50m from open water;
- Only designated trained operators authorised to refuel plant on-site; and
- Procedures and contingency plans set up to deal with emergency accidents or spill

6.7.5 Impacts on Designated Sites

6.7.5.1 Impacts on European Sites

In relation to European sites, an Appropriate Assessment Screening Report and Natura Impact Statement (NIS) have been prepared (and accompany this planning application). These have been prepared to provide the competent authorities with the information necessary to complete an Appropriate Assessment for the Proposed Development in compliance with Article 6(3) of the Habitats Directive. The Screening for Appropriate Assessment identified the following potential pathways for impact on European Sites:

- Indirect deterioration of surface water and ground water quality

The potential for likely significant effects from the Proposed Development were identified for the following European sites:

- Slaney River Valley SAC (000781)
- Wexford Slobs and Harbour SPA (004076)

As a result, an Appropriate Assessment (AA) of the Proposed Development was required. Information to inform the AA is detailed in the NIS which is included as part of the planning application for the Proposed Development. The NIS concluded that:

> *'Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction, operation and decommissioning of the Proposed Development will not adversely affect the integrity of any European sites.*
>
> *'Therefore, it can be objectively concluded that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site'.*

6.7.5.2 Impacts on Nationally Designated Sites

One National Site was identified as being within the zone of influence and in included as a KER.:

- Slaney River Valley pNHA [000781]

With the implementation of the mitigations and best practice procedures for the operational and decommissioning phases of the Proposed Development, as described in Sections 6.7.3. and 6.7.4, respectively, which aim to negate potential impacts from deterioration of water quality, as well as those in Section 9.4 of Chapter 8: Hydrology & Hydrogeology, no significant impacts on any National Site are anticipated.

6.8 Cumulative Impact

The Proposed Development was considered in combination with other plans and projects in the area that could result in cumulative impacts on the Key Ecological Receptors (KERs) identified in Section 6.6.4 of this report, including European and Nationally designated sites. This included a review of online Planning Registers and served to identify past, present and future plans and projects, their activities and their predicted environmental effects. The projects considered are listed in Section 2.4.2 of Chapter 2 of this EIAR: Background.

6.8.1 Assessment of Plans

The following development plans have been reviewed and taken into consideration as part of this assessment:

- Wexford County Development Plan 2022 – 2028
- Regional Spatial and Economic Strategy for the Southern Region, Project Ireland 2040
- Ireland's 4th National Biodiversity Action Plan 2023-2030

The review focused on policies and objectives that relate to designated sites for nature conservation, biodiversity and protected species. Policies and objectives relating to the conservation of peatlands and sustainable land use were also reviewed, particularly where the policies relate to the preservation of surface water quality. An overview of the search results with regard to plans is provided in Table 6-14

Table 6-14 Assessment of plans

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
Wexford County Development Plan 2022 – 2028	**Objective NH03** - To promote biodiversity protection, restoration, and habitat connectivity both within protected areas and in the landscape through promoting the integration of green infrastructure and ecosystem services, including landscape, heritage and biodiversity and management of invasive and alien species in the plan making and development management processes. **Objective NH04** - To protect the integrity of sites designated for their habitat and species importance and prohibit development which would damage or threaten the integrity of these sites. Such sites include Special Areas of Conservation (SACs) and candidate SACs, Special Protection Areas (SPAs), Natural Heritage Areas (NHAs) and proposed NHAs, Nature Reserves, Refuges for Fauna and RAMSAR sites. To protect protected species wherever they occur. **Objective NH08** - To ensure that any plan/project and any associated works, individually or in combination with other plans or projects, are subject to Screening for Appropriate Assessment to ensure there are no likely significant effects on any Natura 2000 site(s) and that the requirements of Article 6(3) and 6(4) of the EU Habitats Directive are fully satisfied. Where a plan/project is likely to have a significant effect on a Natura 2000 site or there is uncertainty with regard to effects, it shall be subject to Appropriate Assessment. The plan/project will proceed only after it has been ascertained that it will not adversely affect the integrity of the site or where, in the absence of alternative solutions, the plan/project is deemed by the competent authority imperative for reasons of overriding public interest. **Objective NH10** - To ensure that traditional field boundaries, ponds or small woods which provide important ecological corridors, stepping stones or networks are protected. Where such features exist on land which is to be developed the applicant should demonstrate that the design of the development has resulted in the retention of these features insofar as is possible and that the existing biodiversity value of the site has been protected and enhanced.	This development plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the biodiversity, protected species and designated sites. The Proposed Development has been designed in order to avoid likely significant effect on biodiversity. Where the potential for adverse effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact. Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects. No potential for negative cumulative impacts when considered in conjunction with the current proposal were identified.
Regional Spatial and	**Regional Policy Objective 1:**	The development plan was comprehensively reviewed, with particular reference to Policies

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
Economic Strategy for the Southern Region, Project Ireland 2040	› **b - The RSES seeks to protect, manage, and through enhanced ecological connectivity, improve** the coherence of the Natura 2000 Network in the Southern Region. › **c - RSES support for other plans/ programmes (and initiatives arising) is on the basis of** appropriate SEA, SFRA, EIA and AA processes being undertaken in order to ensure the avoidance of adverse effects on European Sites and ensure implementation of mitigation measures where required › **d - Development Plans shall include an objective for the protection of European sites and** Natural Heritage Areas (designated and notified proposed NHAs). **Regional Policy Objective 38.c - Support initiatives that retrofit environmental amenities to address** adverse effects on biodiversity and the environment. **Regional Policy Objective 117 - It is an objective to avail of opportunities to enhance biodiversity and** amenity and to ensure the protection of environmentally sensitive sites and habitats, including where flood risk management measures are planned. Plans and projects that have the potential to negatively impact on Natura 2000 sites are subject to the requirements of the Habitats Directive.	and Objectives that relate to the biodiversity, protected species and designated sites. The Proposed Development has been designed in order to avoid likely significant effect on biodiversity. Where the potential for adverse effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact. Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects. No potential for negative cumulative impacts when considered in conjunction with the current proposal were identified.
Ireland's 4th National Biodiversity Action Plan 2023-2030	› **Objective 1: Adopt a Whole-of Government, Whole of-Society Approach to Biodiversity.** Proposed actions include capacity and resource reviews across Government; determining responsibilities for the expanding biodiversity agenda providing support for communities, citizen scientists and business; and mechanisms for the governance and review of this National Biodiversity Action Plan. › **Objective 2: Meet Urgent Conservation and Restoration Needs.** Supporting actions will build on existing conservation measures. Efforts to tackle Invasive Alien Species will be elevated. The protected area network will be expanded to include the Marine Protected Areas. The ambition of the EU Biodiversity Strategy will be considered as part of an evolving work programme across Government. › **Objective 3: Secure Nature's Contribution to People.** Actions highlight the relationship between nature and people in Ireland. These include recognising the tangible and intangible values of	The action plan was comprehensively reviewed, with particular reference to Policies and Objectives that relate to the biodiversity, protected species and designated sites. The Proposed Development has been designed in order to avoid likely significant effect on biodiversity. Where the potential for adverse effect on biodiversity has been identified, mitigation will be implemented as prescribed within this chapter to ensure that there is no significant impact.

Plans	Key Policies and Objectives directly related to European Sites and Biodiversity in the Zone of Influence	Assessment of Potential Impact on European Sites
	biodiversity, promoting nature's importance to our culture and heritage and recognising how biodiversity supports our society and our economy. › **Objective 4: Enhance the Evidence Base for Action on Biodiversity.** This objective focuses on biodiversity research needs, as well as the development and strengthening of long-term monitoring programmes that will underpin and strengthen future decision-making. Action will also focus on collaboration to advance ecosystem accounting that will contribute towards natural capital accounts. › **Objective 5: Strengthen Ireland's Contribution to International Biodiversity Initiatives.** Collaboration with other countries and across the island of Ireland will play a key role in the realisation of this Objective. Ireland will strengthen its contribution to international biodiversity initiatives and international governance processes, such as the United Nations Convention on Biological Diversity.	Where pathways for effects on Designated Sites have been identified, mitigation shall also be implemented to ensure that there are no significant effects. No potential for negative cumulative impacts when considered in conjunction with the current proposal were identified.

6.8.2 Assessment of Projects

As described in Section 2.4 of the EIAR, relevant projects have been assessed in-combination with the Proposed Development and include planning applications in the vicinity of the site and within the zone of influence of all habitats and species considered in this report. These are summarized below, and they have been fully considered in this assessment, with Section 6.8.4 concluding on their potential for impact on biodiversity; Projects of particular relevance to this application included renewable energy development in the vicinity of the Proposed Development site: These have been thoroughly reviewed and include:

- Pl Ref: 20160594: Permission of the construction of an up to 5 mw solar PV farm comprising approximately 20,000 no. photovoltaic panels on ground mounted frames within a site area of 12.94 hectares and associated ancillary development including 4 no. transformer stations, 4 no. auxiliary transformer stations, 4 no. inverters, 1 no. client side substation, 1 no. single storey storage building, 1 no. single storey communications building, 1 no. single storey building, 3 no. cctv security cameras mounted on 4 metre high poles, perimeter security fencing (2 metres high), site access road and the construction of a site access onto R745. Applicant: Power Capital Renewable Energy Limited. Granted 22/8/2016.
- PI Ref: 20160595: Permission of the construction of an up to 5mw solar PV farm comprising approximately 20,000 no. P. Applicant: Power Capital Renewable Energy Limited. Granted 22/08/2016.
- Pl Ref: 20161097: permission for the construction of up to 5mw solar PV farm development within a site area of up to 9.66 ha to include a single storey electrical substation building, electrical transformer/inverter station modules, solar PV panels ground mounted on steel support structures, access roads, fencing and associated electrical cabling, ducting and ancillary infrastructure. Applicant: Crory Energy Limited. Granted 21/12/2016.
- Pl Ref: 1587. Permission for single electricity generating wind turbine and associated works with a hub height of up to 65m and a rotor diameter of up to 55m giving an overall tip height of up to 92.5m with associated hardstand area, control building, upgrade existing forestry access track and site works. The planning application is accompanied by an Environmental Report (ER) and a Screening Statement for Appropriate Assessment (SSAA). Granted 2/10/2015.
- Pl Ref: 16218. Extension of Duration PL11/280 - to erect a wind turbine, site roads, electricity substation, and ancillary works in the townland of Kilbrannish North, Bunclody, Co. Carlow. The turbine will have a maximum hub height of 80m and a maximum rotor diameter of 90m. The anticipated output will be 2.5mw. Granted 26/8/2016.
- Pl Ref: 2113: Permission to develop a wind farm and associated works. The proposed development will consist of: - Construction of up to 7 no. wind turbines with a maximum overall blade tip height of up to 178m; - Construction of turbine foundations and crane pad hardstanding areas; - Construction of new site tracks and associated drainage infrastructure; - Upgrading of existing tracts and associated drainage infrastructure where necessary including upgrade of entrance onto L2026; - All associated drainage and sediment control including the installation of new watercourse or drain crossings and the re-use or upgrading of existing internal watercourse and drain crossings; - Construction of 1 no. permanent onsite 38kV electrical substation to ESBN specifications including: Control building with welfare facilities; - Electrical infrastructure; - Parking; - Wastewater holding tank; - rainwater harvesting; - Security fencing; - All associated infrastructure, services and site works; - 1 no. temporary construction site compound and associated ancillary infrastructure including parking; - 1 no. on site borrow pit (the borrow pit shall be accessed via wind farm access tracks); - Tree felling to facilitate construction and operation of the proposed development; - Installation of medium voltage (20/33kV) and communication underground cabling between the proposed turbines and the proposed on-site substation and associated ancillary works; - Erection of 1 no. permanent meteorological mast to a maximum height of 100m above ground level; - Upgrade of existing forest tracks and paths that shall be re-purposed as recreational amenity trails for community use including signage; - All associated site development works; - A 10 year planning permission and 35 year operational life from the date of commissioning of the entire wind farm. An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS) have been prepared in respect of the proposed development and will be submitted with the application. Applicant: Coillte CGA. Case is yet to be decided by ABP.

- Pl Ref: 13256: Permission to erect a 500kw wind turbine 80 metre high with a blade diameter of 39 metre, a new access roadway connecting to existing private road with underground ducting connecting to existing ESB Substation, and all associated site works. Applicant: Ballon Meats. Granted 14/03/2014.
- Pl Ref: 11/280: Permission to erect a wind turbine, site roads, electricity substation, and ancillary works in the townland of Kilbrannish North, Bunclody, Co. Carlow. The turbine will have a maximum hub height of 80m and a maximum rotor diameter of 90m. The anticipated output will be 2.5mw. Applicant: Kilbranish Windfarm Ltd. Granted 19/06/2012.
- Pl Ref: 20110504: Permission to develop a wind farm of up to 4 wind turbine generators to export electricity with a hub height of up to 85 metres a rotor diameter of up to 82 metres the construction of a crane hardstanding for each turbine, an electrical substation, underground cabling, site roads, and ancillary services. The development is located in the townland of Knocknalour, Bunclody, Co. Wexford. Existing planning permission for a total of 4 wind turbines (planning ref: 20032204 and 20091392) with a hub height of up to 80m and a rotor diameter of up to 72m are current on this land and should this application be approved only 4 wind turbines as detailed in this application will be considered. Applicant: Knocknalour Wind Farm Ltd. Granted 22/07/2011.
- Pl Ref: 20091730: A windfarm of up to 9 wind turbine generators to export electricity with a hub height of up to 85 metres a blade length of up to 41 metres the construction of an electrical substation, site roads, meteorological mast and ancillary services. An existing planning permission for a wind farm (ref 20022904 and An Bord Pleanála ref. Pl. 26.201448) is current on this land and should this application be approved only one of the developments will be constructed. The Wexford wind strategy map show the development location is within policy area 1 uplands which is an area open to consideration for wind farms. An environmental impact statement (EIS) has been prepared in respect of this development and this EIS has been submitted with the planning application. Applicant: Ballycadden Wind Farm Limited. Granted 15/03/2010.
- Pl Ref: 20090266: Erect six wind turbines not exceeding 80 metres hub height with a rotor diameter not exceeding 90 metres, and ancillary buildings and roadways. Applicant: Wexwind Ltd. Granted 16/11/2009.
- Pl Ref: 20071625: Erection of a chinook 75 wind turbine within the boundaries of Gorey business park as part of the phased introduction of a renewable energy program and green initiative encompassing wind, solar, geo-thermal and wood chip energy production with a proposed design capacity provision of 50% of total current energy requirement which currently runs at 1000kw. Turbine tower to have height of 32.0m and blade diameter of 15.0m. Permission to allow for all associated site works and services. Applicant: James Osborne. Granted 30/10/2007.
- Pl Ref: 20070008: Permission to erect six wind turbines and ancillary buildings including an ESB substation and incidental site works including site roads. The tower heights will not exceed 85m and the rotor diameters will not exceed 82m. The anticipated output from the six turbines will be approximately 14MW. An EIS has been submitted with this application. Applicant: Ballindaggin Green Energy Ltd. Granted 28/02/2007.
- Pl Ref: 20033444: Permission to erect a wind farm consisting of 2 wind turbines and service trackways on the site. The developer has also applied to erect an electrical transformer compound, control housing and anemometer on the same site. Applicant: Kate McCarthy. Granted 30/04/2004.
- Pl Ref: 20034003: Permission to erect two wind turbines not exceeding 85 metres hub height with a rotor diameter not exceeding 80 metres, and ancillary buildings and roadways. The maximum output of the wind farm will not exceed 5 megawatts. Applicant: Connor Brennan. Granted 16/04/2004.
- Pl Ref: 201000733: Permission to erect a wind farm consisting of 3 wind turbines and service roadways. The developer has also applied to erect an electrical transformer compound, control housing and anemometer. Applicant: Kenneth Rothwell. Granted 02/12/2003.
- Pl Ref: 014273: Permission to construct 3 turbine windfarm, 3 Vestas V52-850KW Wind Turbines, crane hardstands, access tracks, cable trenches, electrical control room. Cronelea Upper, Shillelagh, Co. Wicklow. Applicant: Tom & Eileen Ryan. Granted 14/03/2002.
- Pl Ref: 014805: 4 wind turbines with a tower height not exceeding 67m & a rotor diameter not exceeding 71m & ancillary buildings & incidental site works to improve & extend existing access. Applicant: Douglas & Linda Wilson. Granted 10/01/2002.
- Pl Ref: 065517/ 141956: Ref 065517: for development of 2 wind turbines with service roadways. Ref 141956: to construct a single wind generator with a max output set at 500kw. The development will consist of: - a single turbine with a max hub height of sixty five meters, and electrical switch room, an access track,

associated infrastructure and all ancillary site works. Applicants: Bearna Gaoithe Teo Wind Farm Ltd./Betty Hedderman respectively. Granted 25/10/2006 and 11/03/2015 respectively.

- Pl Ref: 08527: Construction of a 4 M. Watt wind farm. Applicant: Joseph & Noel Deacon. Granted 07/01/2001.

6.8.3 Existing Habitats and Land Uses

The potential for the Proposed Development to result in a cumulative loss or deterioration of habitats, or impact on the KER species identified, was considered in relation to the existing land uses in the area. The Proposed Development is composed of the existing Castledockrell Wind Farm and agricultural fields, which generally provide low value habitats for faunal species. There is no potential for a cumulative loss of habitats as the wind farm is already constructed.

6.8.4 Conclusion of Cumulative Effects

Following the thorough consideration of plans, projects and land uses including those listed above, it is concluded that, the development will not result in any likely significant negative effects on biodiversity either within the site or outside it. Having considered other projects in the area including those listed above, no potential for the development to contribute to any likely significant negative cumulative effects on biodiversity was identified when considered in-combination with other plans and projects.

In the review of the projects that was undertaken, no connection, that could potentially result in additional or negative cumulative effects was identified. Neither was any potential for different (new) effects resulting from the combination of the various projects and plans in association with the Proposed Development.

6.9 Conclusion

Following consideration of the residual effects (post mitigation) it is concluded that the Proposed Development will not result in any residual significant negative effects on any of the identified KERs. No significant residual negative effects on any ecological receptors were identified at any geographic scale.

The potential for effects on the European Designated Sites are fully described in the Natura Impact Statement that accompanies this application. The NIS concludes that:

> *'Where the potential for any adverse effect on any European Site has been identified, the pathway by which any such effect may occur has been robustly blocked through the use of avoidance, appropriate design and mitigation measures as set out within this report and its appendices. The measures ensure that the construction and operation of the Proposed Development does not adversely affect the integrity of European sites.*
>
> *Therefore, it can be objectively concluded that the Proposed Development, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site.'*

Where potential for effects on National Sites was identified above, robust mitigations and best practices have been incorporated into the design to prevent such pathways for effect. With the implementation of the mitigations detailed in this chapter as well as in Chapter 9: Hydrology & Hydrogeology, there is no potential for residual impacts on any National Site.

Provided that the Proposed Development is operated in accordance with the design, best practice and mitigation that is described within this application, significant individual or cumulative negative effects on ecology are not anticipated at any geographic scale or on any of the identified KERs.

7. BIRDS

7.1 Introduction

This chapter assesses the likely significant impacts of the proposed extension of operation of the existing Castledockrell Wind Farm (hereafter referred to as the 'Proposed Development') on avian receptors. Particular attention has been paid to bird species with national and international protection under the Irish Wildlife Acts 1976-2022 and the European Union (EU) Birds Directive (2009/147/EC). Where potential impacts on avian receptors are identified, mitigation is described and the residual effects are assessed.

This chapter is supported by Technical Appendices 7-1 to 7-4, which contain data from the ornithological surveys undertaken at the Proposed Development, including full details of the survey effort, weather conditions and bird records. Confidential Appendix 7-5 contains sensitive records of protected species breeding and roosting sites. Appendix 7-6 presents the bird monitoring plan.

The chapter is structured as follows:

- The Introduction provides a description of the Proposed Development and the relevant legislation, guidance and policy context.
- The Assessment Approach and Methodology section is a comprehensive description of the ornithological surveys and impact assessment methodology used to inform a robust assessment of the potential impacts of the Proposed Development on birds.
- The Baseline Ornithological Conditions section describes the existing bird population at the Proposed Development site.
- The Receptor Evaluation section identifies key ornithological receptors and determines their sensitivity.
- The Potential Impacts section details the impact assessment (including disturbance/displacement and collision risk). Impacts are described with regard to each phase of the Proposed Development: operation and decommissioning.
- The Mitigation and Best Practice Measures section describes proposed mitigation and best practice measures to ameliorate the identified impacts.
- The Monitoring section outlines a schedule for monitoring birds during each phase of the Proposed Development if planning permission is granted: commencement and operation and decommissioning.
- The Residual Effects section considers the implications of the proposed mitigation, best practice, enhancement measures and monitoring.
- Finally, the Cumulative Effects section fully assesses potential cumulative effects of the Proposed Development in combination with other projects.
- The Conclusion provides a summary statement on the overall significance of predicted effects on birds.

As detailed in in Chapter 1, for the purposes of this EIAR, the various project components are described and assessed using the following references: 'Proposed Development', 'the Site'.

- Where the 'Proposed Development' is referred to, this relates to the project components as listed in Chapter 1.
- Where 'the Site' is referred to, this relates to the primary study area for the EIAR as delineated by the EIAR Site Boundary in green as shown in Figure 1-1.

The following other definitions are used in this chapter:

- The "Zone of Influence" (ZOI) for individual ornithological receptors refers to the area within which potential effects are anticipated. ZOIs differ depending on the

sensitivities of particular species and were assigned in accordance with best available guidance (SNH, 2016 and McGuinness *et al.*, 2015), adopting a precautionary approach.

- "Key Ornithological Receptor" (KOR) is defined as a species occurring within the zone of influence of the Proposed Development upon which potential impacts are anticipated and assessed.

7.1.1 Description of the Proposed Development

A full description of the Proposed Development is provided in Chapter 4 of this EIAR. In brief, the applicant is seeking planning permission to extend the operational period of 11 no. of the existing turbines on the existing Castledockrell Wind Farm for an additional 20 years from the date of the expiry of the current planning permission (2025) per Condition no. 8 of the consent issued (An Bord Pleanála Ref: PL 26.211725). This application also seeks the permanent extension of the existing onsite 110kV substation. The existing wind farm consists of 12 No. Enercon E70 turbines E70 2.3 megawatt (MW) wind turbines with a blade tip height of 120m, with a hub height of 84.5m and a rotor diameter of 71m., It is proposed to extend the operational life of T1 – T11, with T12 being assessed cumulatively as it does not form part of this application.

7.1.2 Legislation, Guidance and Policy Context

This EIAR has been prepared in accordance with the requirements of EU Environmental Impact Assessment Directive 2014/52/EU. The following key legislative provisions are applicable to habitats and fauna in Ireland:

- The Wildlife Act 1976. This Act was revised in October 2022 to present amendments since enactment.
- The Birds Directive (EU Directive 2009/147/EC on the conservation of wild birds)
- The European Communities (Birds and Natural Habitats) Regulations 2011, as amended (S.I. no. 477 of 2011). These regulations transpose the EU Birds Directive into Irish law. The regulations were amended in 2013 (290/2013 and 499/2013), 2015 (355/205) as well as Chapter 4 of the Planning, Heritage and Broadcasting (Amendment) Act 2021 (11/2021) and in 2021 (293/2021).
- The International Convention on Wetlands of International Importance (the Ramsar Convention), 1971. This convention protects 45 wetland sites of significant value for nature in Ireland.

In the absence of specific national ornithological survey guidance for Ireland, the following guidance documents published by NatureScot (formerly Scottish Natural Heritage [SNH]) have been followed to inform this assessment:

- SNH (2000). Wind farms and birds: calculating a theoretical collision risk assuming no avoidance action. Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/sites/default/files/2017-09/Guidance%20Note%20-%20Windfarms%20and%20birds%20-%20Calculating%20a%20theoretical%20collision%20risk%20assuming%20no%20avoiding%20action.pdf
- SNH (2009). Monitoring the impact of onshore wind farms on birds. Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/sites/default/files/2017-09/Guidance%20Note%20-%20Monitoring%20the%20impact%20of%20onshore%20windfarms%20on%20birds.pdf
- SNH (2014) Repowering onshore wind farms: bird survey requirements. Available at: https://www.nature.scot/sites/default/files/2017-09/Guidance%20note%20-%20Repowering%20onshore%20wind%20farms%20-%20bird%20survey%20requirments.pdf

- SNH (2016). Assessing connectivity with Special Protection Areas (SPAs). Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/sites/default/files/2018-08/Assessing%20connectivity%20with%20special%20protection%20areas.pdf
- SNH (2017). Recommended bird survey methods to inform impact assessment of onshore wind farms. Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/sites/default/files/2018-06/Guidance%20Note%20-%20Recommended%20bird%20survey%20methods%20to%20inform%20impact%20assessment%20of%20onshore%20windfarms.pdf
- SNH (2018a) Avoidance rates for the onshore SNH wind farm collision risk model. Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/sites/default/files/2018-09/Wind%20farm%20impacts%20on%20birds%20-%20Use%20of%20Avoidance%20Rates%20in%20the%20SNH%20Wind%20Farm%20Collision%20Risk%20Model.pdf
- SNH (2018b). Assessing the cumulative impacts of onshore wind farms on birds. Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/sites/default/files/2018-08/Guidance%20-%20Assessing%20the%20cumulative%20impacts%20of%20onshore%20wind%20farms%20on%20birds.pdf
- SNH (2018c). Assessing significance of impacts from onshore wind farms outwith designated areas. Scottish Natural Heritage, Inverness, Scotland. Available at: https://www.nature.scot/doc/guidance-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect-protected
- SNH (2018d). Assessing the impact of repowered wind farms in nature (Draft document). Available at: https://www.nature.scot/sites/default/files/2018-06/Guidance%20-%20Assessing%20the%20impact%20of%20repowered%20wind%20farms%20on%20nature%20-%20consultation%20draft%20-%20June%202018.pdf

The following Irish guidance documents were also consulted:

- Percival, S.M. (2003). Birds and wind farms in Ireland: A review of potential issues and impact assessment. Ecology Consulting, Durham, UK. Available at: https://tethys.pnnl.gov/sites/default/files/publications/Percival_2003.pdf
- McGuinness, D., Muldoon, C., Tierney, N., Cummins, S., Murray, A., Egan, S. and Crowe, O. (2015). Bird Sensitivity Mapping for Wind Energy Developments and Associated Infrastructure in the Republic of Ireland. Birdwatch Ireland, Wicklow, Ireland. Available at: https://birdwatchireland.ie/app/uploads/2019/09/BWI-Bird-Wind-Energy-devt-Sensitivity-Mapping-Guidance_document.pdf
- Gilbert, G., Stanbury, A. and Lewis, A. (2021). Birds of Conservation Concern in Ireland 4: 2020-2026. *Irish Birds*, 43:1-22. Available at: https://birdwatchireland.ie/birds-of-conservation-concern-in-ireland/

Furthermore, this assessment has been prepared with respect to the various planning policies and strategy guidance documents listed below and as detailed in Chapter 1 of this EIAR:

- European Commission (2002). Assessment of plans and projects significantly affecting Natura 2000 sites. Publications Office of the European Union, Luxembourg.
- European Commission (2020). Guidance document on wind energy developments and EU nature legislation. Publications Office of the European Union, Luxembourg.
- Planning and Development Acts 2000 (as amended).
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority, Ireland.

- EPA (2022). Guidelines on the information to be contained in Environmental Impact Statement reports. Environmental Protection Agency, Johnstown Castle Estate, Wexford.
- DoHPLG (2018). Guidelines for planning authorities and An Bord Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government, Government of Ireland, Dublin.
- Wexford County Development Plan (2022 – 2028)

7.1.3 Statement of Authority and Competence

This ornithology chapter has been prepared by Kathryn Sheridan (MSc.), Project Ornithologist of MKO and Patrick Manley (BSc.), Senior Ornithologist and reviewed by Padraig Cregg (MSc.), Principal Ornithologist. All are suitably qualified ornithologists with experience in completing avifaunal assessments and competent experts for the purposes of the preparation of this EIAR. The scope of works and survey methodology was devised by Padraig Cregg and followed recent NatureScot (formerly Scottish Natural Heritage) guidance (SNH, 2014 & 2017). Field surveys were undertaken by Conor Berney and Ken Westman. Both surveyors are competent experts in the field of ornithological surveying.

7.2 Assessment Approach and Methodology

7.2.1 Desk Study

A comprehensive desk study was undertaken to search for any relevant information on species of conservation concern that may use the Proposed Development site. The assessment included a thorough review of the available ornithological data including:

- Designated sites within the likely ZOI of the Proposed Development.
- Bird atlases.
- Bird sensitivity mapping tool.
- Online web-mappers from the National Biodiversity Data Centre.
- Irish Wetland Bird Survey data.
- Review of specially requested records from the National Parks and Wildlife Service Rare and Protected Species Database.
- Castledockrell operational phase bird monitoring reports

7.2.2 Consultation

Consultation was undertaken with the relevant statutory and non-statutory organisations as part of the EIAR scoping to inform the current assessment. Full details can be found in Chapter 2 of this EIAR. Table 7-1 Consultation responsesTable 7-1 below provides a list of the organisations consulted with regard to ornithology during the scoping process and notes where scoping responses were received.

Copies of all scoping responses are included in Appendix 2-1 of this EIAR. The recommendations of the consultees have informed the EIAR preparation process and the contents of this chapter; Chapter 2 describes where the comments raised in the scoping responses received have been addressed.

Table 7-1 Consultation responses

	Consultee	Response
01	An Taisce	No response to date
02	BirdWatch Ireland	No response to date

	Consultee	Response
03	Department of Agriculture, Food and the Marine	Response received – no reference to birds
05	Irish Peatland Conservation Council	No response to date
06	Irish Red Grouse Association	No response to date
07	Irish Raptor Study Group	No response to date
08	Irish Wildlife Trust	Response received – Organisation had no capacity to respond

7.2.3 Identification of Target Species and Key Ornithological Receptors

Following a comprehensive desk study, initial site visits and consultation, a list of "target species" likely to occur in the ZOI of the Proposed Development was compiled. Bird surveys conducted at the Site were then specifically designed to survey for these target species, in accordance with SNH (2017). The target species list was drawn from:

- Species listed on Annex I of the EU Birds Directive.
- Special Conservation Interests (SCI) of Special Protection Areas (SPA) within the zone of likely significant effects.
- Red listed Birds of Conservation Concern in Ireland (BoCCI).
- Raptors and species that are particularly sensitive to impacts from wind farm developments.

Following analysis of field survey data (described below), a precautionary screening approach was followed to identify KORs: the list of target species observed during surveys (see Appendix 7-1) was refined to KORs, excluding those for which pathways for a significant effect could not be identified.

7.2.4 Field Surveys

Field surveys were undertaken during the survey period October 2022 – September 2023, consisting of one breeding season (April – September) and one non-breeding season (October – March). Based on the results of the desk study, consultation and reconnaissance site visits described in the previous sections (Section 7.2.1 to 0), the assemblage of bird species in the Site and the likely importance of the Site for these species was ascertained. Then, adopting a precautionary approach, a site-specific scope for ornithological surveys was devised. The data provided in the field surveys is robust and allows clear, precise and definitive conclusions to be made on the avian receptors identified within the Site.

There is little published information on the survey requirements for an extension of life application for a wind farm, there are however several guidance documents outlining survey recommendations for pre-planning (green field) wind farm sites and repowering projects. These documents (outlined below) have informed the survey scope.

In the absence of specific national ornithological survey guidance for Ireland, the NatureScot (formerly Scottish Natural Heritage) guidelines are widely accepted to provide industry best practice recommendations. These documents include:

- Repowering onshore wind farms: bird survey requirements' (SNH, 2014);
- While the 'Assessing the impact of repowered wind farms in nature' (SNH, 2018) is a NatureScot draft document, it has been considered;
- Recommended bird survey methods to inform impact assessment of onshore wind farms' (SNH, 2017);

- SNH (2009). Monitoring the impact of onshore wind farms on birds; and
- SNH (2016). Assessing connectivity with Special Protection Areas (SPAs).

The survey work that was undertaken between October 2022 and September 2023 forms the core dataset for the assessment of effects on ornithology. As operational wind farms, such as the Proposed Development, are likely to have a reduced bird interest compared with similar sites pre-development, only one year of fresh surveys was required as per SNH (2014). This year of surveying included a breeding season and winter season, to account for the potential differences in use of the area between seasons by the local avian community. The various ornithological surveys undertaken at the Proposed Development site and hinterland are described in detail below.

7.2.4.1.1 Vantage Point Surveys

Vantage point surveys were undertaken in accordance with SNH (2017) to monitor flight activity within the Site and to a 500m radius of the potential turbine positions. Surveys were conducted from two fixed point vantage points with comprehensive coverage of the Site (Figure 7-1). The vantage point locations were selected by undertaking a viewshed analysis (described below) and confirmed by a reconnaissance visit and initial field surveys to ensure that the existing turbine layout was entirely covered.

Viewsheds were calculated using Resoft Wind Farm ZTV (Zone of Theoretical Visibility) software in combination with QGIS software using a notional layer suspended at 49m, which is representative of the minimum height considered for the Potential Collision Risk Area based on the existing turbine model the vantage point locations were selected. Note that while the relevance of being able to view as much of the site to ground level is acknowledged, the NatureScot guidance emphasises the importance of visibility of the 'collision risk volume'. Therefore, the viewshed analysis aims to identify the most suitable locations to site vantage points such that the airspace of the turbine rotor swept area is in view using the fewest possible number of vantage points. The vantage point locations were tested for visibility coverage by creating a viewshed point 1.75m in height (to represent the height of observer) on a map using 10m contours terrain data. The relative height of any surrounding trees and its effects on visibility is also accounted for in the analysis. Using the ZTV software, a viewshed of 360° was produced calculating an area 49m from ground level up to a 2km radius. The resulting viewshed image was then cropped to 180° to give the viewshed. The visible viewshed is presented in Figure 7-2. A reconnaissance visit to the Site confirmed that the lowest swept height of the existing turbines was visible from the vantage points presented in Figure 7-1

Survey methodology followed SNH (2017). The surveyor collected data on bird observations and flight activity from the scanning arc of 180° to a 2km radius at the fixed vantage point locations for two 3 hour watches separated by a minimum 30 minute break (i.e. 6 hours total) per month. Surveys were conducted from October to September inclusive, and were scheduled to provide a minimum of 36 hours per winter or breeding season and spread over the full daylight period, including dawn and dusk watches, to coincide with the highest periods of bird activity (Table 7-2).

Table 7-2 Vantage point survey watch duration

Survey Season and Number of Vantage Points (VPs)	Effort per Vantage Point (VP)
Winter Season 2022/2023 (2 VPs)	36 hours per VP
Breeding Season 2023 (2 VPs)	36 hours per VP

Flight activity of target species was mapped and recorded as per defined flight bands which were chosen in relation to the dimensions of existing turbine models for the site. Bands were split into 0-15m, 15-49m, 49-120m and >120m. All flight activity within a height band 49-120m is within the Potential Collision Height (PCH) with regard to the turbine swept area. In addition, the presence of any non-