



Case Number ABP-316178-23

Oweninny Wind Farm Phase 3

Response to Request for Further Information

EIAR Addendum



Document Control Sheet

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1. INTRODUCTION

1.1 PURPOSE OF THIS REPORT

This Environmental Impact Assessment (EIAR) Addendum Report has been prepared by TOBIN Consulting Engineers on behalf of Bord na Móna Powergen Ltd. (the Applicant) in response to a request for further information (RFI) from An Bord Pleanála (ABP) dated 24th January 2024.

The RFI relates to the planning application for the proposed Oweninny Wind Farm Phase 3 development (case number ABP-316178-23) and invited the Applicant to respond to six individual items which are addressed in this report.

This EIAR Addendum Report should be read in conjunction with the Environmental Impact Assessment Report that accompanies the planning application for the Oweninny Wind Farm Phase 3 development, which was lodged with ABP on 31st March 2023.



2. FURTHER INFORMATION RESPONSES

2.1 ITEM 1: SITE LAYOUT PLAN

2.1.1 Further Information Requested

“Submit a site layout plan which indicates the location of existing structures and development on site, including turbines and access roads. The site layout plan shall also indicate the turbines and access roads of adjoining windfarm developments such as Phase 1 and Phase 2 Oweninny windfarm. Annotate and label the turbines (both on and off site.) Indicate the extent of existing access track to be retained as part of the proposed development.”

2.1.2 Applicant’s Response

We have included as **Appendix 1** an amended Site Layout Plan (both with an aerial and OSI Discovery basemap) that includes all of the details requested.



2.2 ITEM 2: APPROPRIATE ASSESSMENT SCREENING

2.2.1 Further Information Requested

“Owenduff/Nepkin Complex SPA: (a) The Department of Housing, Local Government and Heritage, by submission dated 22nd June 2023, expressed concern that the Owenduff/Nepkin Complex was screened out from further consideration/assessment in the NIS as it considered that it is uncertain whether the proposed development is likely to have significant effect on this European Site. Notwithstanding the applicants response to the submission and the argument put forward that Owenduff/Nepkin Complex SPA is not required to be screened in, you are advised that the Board shares the opinion of the Department that further detailed information is required to adequately address the legal tests of the Appropriate Assessment (AA) process including in-combination effects with other projects in the area, and consider that Owenduff/Nepkin Complex SPA should be screened in because of uncertainty of effect and should be subject to further detailed analysis in the NIS.

You are therefore requested to submit an Addendum to the AA Screening Report and NIS which screens in Owenduff/Nepkin Complex SPA due to uncertainty of significance of effects either alone or in combination with other plans and projects. The NIS should be supported by scientific evidence as to why the Golden Plover and Merlin recorded at the windfarm are or are not associated with the Owenduff/Nepkin Complex SPA populations and why any potential impacts caused by the proposed development would not undermine the conservation objectives of the Golden Plover and Merlin of the SPA so as to exclude adverse effects on site integrity beyond reasonable scientific doubt. In the absence of detailed site-specific conservation objectives for this SPA, the best available scientific information should be relied upon including reference to the Natura 2000 data form and any more up to date information on the species distribution and breeding status currently available (See Suddaby, D. & O'Brien, C. (2020) A survey of breeding Golden Plover within the Owenduff/Nepkin Complex SPA, County Mayo. Irish Wildlife Manuals, No 120.) You should also consider the relevance of application of the targets and objectives set for both Special Conservation Interest Species Breeding Golden Plover and Merlin for Connemara Bog Complex SPA [004181]. The assessment should also take account of any possible in-combination effects with the lodged planning application of Sheskin South windfarm (Reference ABP-315933-23 and sheskinsouthwfplanning.com).”

2.2.2 Applicant's Response

We have revised our conclusions regarding the Owenduff/Nepkin Complex Special Protection Area (SPA) and have screened in the site following a precautionary approach. The Appropriate Assessment (AA) Screening Report and Natura Impact Statement (NIS) have been updated to include the Owenduff/Nepkin Complex SPA, both of which are included in **Appendix 2**.

In the NIS, the significance of effects, either alone or in combination with other plans or projects, has been fully assessed using scientific evidence. Information regarding the distribution and breeding status of Merlin and Golden Plover within the SPA was obtained from available scientific sources, including:

- Suddaby & O'Brien (2020), *A survey of breeding Golden Plover within the Owenduff/Nepkin Complex SPA, County Mayo*. Irish Wildlife Manuals, No 120; and

-
- Lusby et. al (2020), *Survey of breeding Merlin in the Special Protection Area network 2018*. Irish Wildlife Manuals, No. 139.

As no site-specific conservation objectives are available for the Owenduff/Nephin Complex SPA, targets and objectives were instead adopted from the Connemara Bog Complex SPA.

The updated AA screening report and NIS concluded that the special conservation interest (SCIs) for the Owenduff/Nephin Complex SPA are not associated with the proposed development, however following a precautionary approach based on core foraging ranges, there is potential for disturbance effects on both species, which would undermine the conservation objectives of the SPA. Robust mitigation in the form of disturbance management and a pre-construction survey are proposed. Additionally, the potential for in-combination effects was examined in comparison to the lodged Shesking South windfarm.



2.3 ITEM 3: ORNITHOLOGY

2.3.1 Further Information Requested

“The Board acknowledges the Applicants response related to the DAU submissions on the use of national population figures e.g. for Golden Plover and use of arbitrary thresholds however, you are advised that the Board is not satisfied that this explanation is adequate in terms of its application to the impact assessment process in either the EIAR or the NIS. The use of national population figures to determine magnitude of effects at a local level is not appropriate as clearly described in the Departments submission. The Board requests that the applicant further engages with the request of the Department in the impact assessment presented in the EIAR and NIS. Similarly, the Board considers that further scientific justification for the use of arbitrary thresholds should be integrated into the rationale for the collision risk model. You are therefore requested to submit an addendum to the Ornithology impact assessment and the NIS as relevant, clearly setting out the rationale behind the use of arbitrary thresholds for the collision risk model and also addressing the significance of predicted bird collision mortality at a more locally relevant level having regard to Percival methodology on same.”

2.3.2 Applicant’s Response

We have reviewed the submission from DAU again, in addition to the request from ABP and in response to the issues raised we have updated a number of sections of Chapter 8 (Ornithology) of the EIAR as follows:

- Section 8.8.3.2.1 - The following text should be inserted as Paragraph 5 of this section with the remaining text in this section unchanged:

“The potential significance of a predicted collision risk to an Important key avian receptor (KAR) will depend upon its population size and its background mortality rates. A threshold level of a 1% increase in annual mortality as a consequence of collision risk has been suggested to determine whether the impact is non-negligible (Percival, 2003)¹. Despite this 1% threshold being widely used in Irish and UK wind farm assessments it is likely an arbitrary, and probably conservative, threshold. Therefore, the Percival (2003) criterion of a 1% increase in annual mortality should be used as an indication for the requirement of a more detailed assessment. Where an increase in annual mortality is around 1%, although it is unlikely that it will have a significant impact on the population trend, some further consideration of the potential impact will be required (e.g. a review of published population viability analyses on the species concerned, or for comparable species). However, when the increase in annual mortality is substantially greater than 1%, then a detailed assessment may be required, such as the development of a population viability analysis for the specific population of concern (depending on the conservation importance of the population). In both circumstances, consideration should also be given to the level of

¹ Percival, S. M. (2003). Birds and wind farms in Ireland: a review of potential issues and impact assessment. Ecology Consulting, 17, 2234-2236.

uncertainty in the collision risk prediction (i.e. what is the likely upper bound of the confidence interval around the predicted collision risk)."

- Section 8.8.3.2.1.2 - All text in this section is to be replaced with the following text.

"Golden Plover was included in a collision risk model due to the amount of flight activity recorded over the survey period and the amount of time in which these flights were recorded in the collision risk zone (CRZ) and at potential collision height (PCH). As Golden Plover were recorded roosting and feeding within the study area, they are expected to spend time traveling within the site ('non-directional flight') rather than passing directly through, the observed time spent flying within the CRZ at PCH is calculated and extrapolated up to predict the number of transits through the rotor-swept volume, per season (Band et al., 2007)¹. The model estimated that, based on a 158m rotor diameter turbine model, and based on the predicted avoidance rate for Golden Plover of 98% (SNH 2018)⁵ an annual collision of 6.77 was calculated (which would equate to 203 collisions over the 30-year lifespan of the wind farm). The population recorded over the survey period related almost entirely to a wintering population within and around the proposed development boundary. No breeding or breeding activity was recorded between April and August over the survey years of 2019, 2020, 2021 and 2022. The only records observed during the breeding period related to non-breeding birds recorded in the month of September.

According to Percival (2003)¹, the magnitude of impact on a species population as a result of collisions would be negligible if the estimated mortality does not increase the natural mortality rate by 1%. Calculations to determine this difference were conducted and are presented in Table 8-16. Because no accurate figures for the wintering population of Golden Plover in county Mayo were available to use in the calculations, a data request was made to BirdWatch Ireland (BWI) to obtain the most up to date Irish Wetland Bird Survey (I-WeBS) data, from 2018/2019 to 2022/2023 for county Mayo. An average of these five years was calculated and used as an approximate population size. It should be noted that this figure is likely to be a very conservative number as Golden Plover are known to be distributed in a variety of wetland and non-wetland habitats that are not sampled during I-WeBS, such as on large, small and ephemeral wetlands, agricultural land or bog habitats. This can be demonstrated when

comparing I-WeBS locations in county Mayo² with records of wintering Golden Plover populations reported in the Bird Atlas 2007-2011 (Balmer et al. 2013)³. This shows there is some overlap with IWeBS sites and wintering Golden Plover records along the coast and inland wetland areas, but in areas such as the large bog complexes to the north and north-east of the proposed development, no IWeBS sites occur in the occupied 10km². The national population from the most recent available published data was also assessed.

The estimated 6.77 collisions per year was projected to not increase the national natural mortality rate above 1% (Table 8-16). However, the projected effect for the Mayo population was estimated at 1.46% of the County mortality rate which is above the 1% limit suggested by Percival (2003), thus warranting a more detailed analysis.

One percent of the Mayo County mortality of Golden Plover, upon which a collision effect could be appraised as significant (Percival, 2003), would equate to a maximum of 4.6 collisions per year, while the modelled collision risk predicts an added mortality of approximately 2.1 individuals each year. Considering that the Golden Plover population in Mayo County was estimated using I-WeBS data, which collects waterbird data through monthly counts, it's important to note that Golden Plovers were observed on only 16 of the 41 wetlands surveyed. Additionally, the species' habitat preference extends beyond wetlands, with a preference for lowland peatlands or agricultural land for roosting and feeding (Balmer et al, 2013)³, both of which are reported to be highly abundant in County Mayo (EPA, 2018)⁴. Therefore, the estimated Golden Plover population for Mayo County of 1,715 individuals is likely to be an underestimation, which would translate in an overestimation on the significance of the projected collision effects.

Additional to the above, the 6.77 collisions per year was projected using an avoidance rate of 98% which is recommended by the SNH (2018)⁵, however, there is robust data available from post-construction monitoring that indicates that a much higher avoidance rate could be applied to wintering Golden Plover

² Map of I-WeBS sites:

<https://bwi.maps.arcgis.com/apps/View/index.html?appid=1043ba01fcb74c78bc75e306eda48d3a> [accessed March 2024]

³ Balmer, D., Gillings, S., Caffrey, B., Swan, B., Downie, I. & Fuller, R. (2013) Bird Atlas 2007-11 The breeding and wintering birds of Britain and Ireland. British Trust for Ornithology

⁴ EPA (2018) Corine Landcover 2018. Available at <https://gis.epa.ie/EPAMaps/>. [accessed March 2024]

⁵ SNH (2018) Avoidance rates for the onshore SNH Wind Farm Collision Risk Model.

populations. As outlined in Gittings (2022)⁶, following a review of post construction monitoring reports for wind farms in the UK, the avoidance rates for wintering Golden Plover are likely to be closer to 99.8%. If this rate was applied to the outputs of the CRM for this Proposed Development would be <1% for both the national and county population of Golden Plover.

Therefore, based on the factors discussed above, the potential increase in annual mortality from collision risk impacts on this species wintering population in county Mayo is evaluated to be **negligible and not significant**.

Table 8-16: Potential Increase in Mortality to the National Wintering Golden Plover Population as a Result of Collision Risk

Parameter	Description	Source	National ⁷		Mayo ⁸	
pop	National (ROI) and County Mayo Population size	(Burke <i>et al.</i> , 2019) ⁷ , I-WeBS Data request (2018/2019 to 2022/2023) ⁸	80,707*		1,715*	
surv	Adult survival rate	(Sandercock, 2003) ⁹ .	0.73		0.73	
mort	Adult mortality rate	1 - surv	0.27		0.27	
m1	Annual population mortality rate	Pop x mort	21,791		463	
m2	Avoidance rate	SNH (2018) ⁵ , Gittings (2022) ⁶	98% ⁵	99.8% ⁶	98% ⁵	99.8% ⁶
	Predicted collision risk	CRM (Appendix 8.2)	6.77	0.68	6.77	0.68
m+	Increase in annual mortality due to collisions (%)	m2/m1 x 100	0.024%	0.003%	1.143%	0.146%

*These figures have been described as conservative, as Golden Plover are known to be distributed in a variety of wetland and non-wetland habitats that are under sampled during I-WeB surveys, such as on large, small and ephemeral wetlands or bog habitats.

We have also revised the proportionate approach to the Collision Risk Model (CRM), whereby it was only run for species that met a specified threshold of flight activity (three flights, or at least 10 individuals, recorded within the collision risk zone at potential collision height). As outlined in our previous response to the DAU submission (included in the document lodged with ABP entitled 'Response to Submissions' on July 25th, 2023), birds that infrequently use the airspace or were recorded in such low numbers within the areas where turbines will operate will produce such a low modelled collision rate that a negligible collision risk will be produced.

⁶ Gittings, T (2022), Ballivor Wind Farm: Golden Plover Avoidance Rates Collision Risk Assessment. Appendix to the Collision Risk assessment report for the Ballivor Wind Farm EIAR (ABP ref: 316212) , available online at: <https://www.pleanala.ie/publicaccess/EIAR-NIS/316212/b.%20Volume%20%20Appendices/Appendix%207-6%20Collision%20Risk%20Assessment.pdf?r=147807> [accessed March 2024]

⁷ Burke, Brian & Lewis, Lesley & Fitzgerald, Niamh & Frost, Teresa & Austin, Graham & Tierney, David. (2019). Estimates of waterbird numbers wintering in Ireland, 2011/12-2015/16. 41. 1-12.

⁸ 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

⁹ Sandercock B.K. 2003. Estimation of survival rates for wader populations: a review of mark-recapture methods. Wader Study Group Bull. 100: 163-174

Following a review of this threshold and in light of the board's request, an update, in the form of an appendix (titled Appendix C), has been included in the CRM report, providing more clarity on the use of the threshold of flight activity as well as the inclusion of all species at potential collision risk modelled. The now included modelled species have been found to have a negligible collision risk (i.e., less than one mortality is predicted over the 30-year lifespan of the Proposed Development as a result of collision), and so the outcomes of the ornithology impact assessment and NIS remain unchanged. This additional appendix to the CRM report has been included in **Appendix 3**. This updated CRM report is also included in the revised NIS document.



2.4 ITEM 4: BAT SURVEY

2.4.1 Further Information Requested

“Clarify the bat activity for Borrow Pit B, where the Bat Survey Report (Appendix 7.2 of the EIAR) on page 48 references that the borrow pit is south of T13 when in fact Borrow Pit B is south of T18.”

2.4.2 Applicant’s Response

The Borrow Pit B referenced within the Bat Survey Report (Appendix 7.2 of the EIAR) referred to an earlier revision of the proposed site layout. This was subsequently amended prior to submission of the planning application and the site layout presented on the planning application drawings is correct. To clarify, all of the bat species mentioned in the Bat Survey Report (Appendix 7.2 of the EIAR) relate to the location south of T13.



2.5 ITEM 5: HYDROLOGY AND HYDROGEOLOGY

2.5.1 Further Information Requested

- (a) *“The IFI, in their submission dated 26th May 2023, request additional detail with respect to location and design of respective culverts. In your response to submissions received, it was advised to “see a copy of the location map for the proposed culverts and a table showing each location and proposed design type.” Neither the site location map nor the site layout plan contains this information. Submit a location map or site layout plan showing the location of proposed culverts accompanied by a table detailing the proposed design type.*
- (b) *The IFI request no extraction from borrow pits occurs below the water table to reduce the volume of water required to be treated for silt and to reduce the potential for siltation of waters downstream. This matter was not addressed in your Response to Submission. Please address.*
- (c) *Borrow Pit A is 43ha, yet it is proposed that only 10ha will be extracted from. Clarify the need for such a large borrow pit.”*

2.5.2 Applicant’s Response

Response to Item (a)

A total of five streams will be crossed as part of the development, in addition to a number of internal drain crossings. Four of the five stream crossings will use existing bridges, with one new bridge required to access T16. At this location it is proposed to use a clear-span type bridge. The four existing and one proposed bridge are listed in Table 2-1 below.

Existing and proposed bridge crossings as well as drain crossings are detailed on **Figure 10889-2076 in Appendix 4**.

Smaller peatland drains will be crossed using piped culverts as detailed in 10889-2036.

Table 2-1 Bridge Crossings

Location	X ITM	Y ITM	Description
1	499784	822321	Utilising existing bridge over small (first order) stream. No bridge proposed.
2	499889	821229	Utilising existing bridge over small (first order) stream. No bridge proposed.
3	503328	822837	Utilising existing bridge over small (first order) stream. No bridge proposed.
4	503817	822838	Proposed New Bridge to T16. Bridge will be clear span. No instream works proposed. Clear span bridge as per Drawing 10889-2037 (See Appendix 4)
5	497752	819841	Existing entrance to be utilised, no bridge proposed.

Near-stream construction work will only be carried out during the period permitted by Inland Fisheries Ireland (IFI, 2016)¹⁰ guidance document *“Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites”*, that is, May to September inclusive. This time period coincides with the period of lowest expected rainfall and, therefore, minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface watercourses.

Response to Item (b)

Two extraction techniques were proposed in the planning application and associated EIAR for the proposed development, namely dry extraction or wet extraction. Based on the submission from the IFI, we now confirm that the extraction technique used will be above the water table i.e. dry extraction.

Response to Item (c)

The additional area in Borrow Pit A will allow for phased extraction and deposition.

It is proposed to only extract 10-hectares (or less than 250,000m³) from the Extraction Area 1. The peat overlying the sand and gravel deposits will be stripped over an area of 10 hectares and will be utilised in the remaining areas of Borrow Pit A (which covers a total of 41 hectares).

Surface water settlement and SuDS measures will be accommodated to the south of Borrow Pit A. Surplus peat from the overall project will be used to reinstate the 10-hectare extraction area and will also be used in reinstatement of the remainder of Borrow Pit A.

¹⁰ IFI (2016) *Requirements for the Protection of groundwater of Fisheries Habitat during Construction and Development Works at River Sites*

2.6 ITEM 6: GEOLOGY

2.6.1 Further Information Requested

“Chapter 9, Soils & Geology, Geotechnics & Ground Stability contains the following statement (on page 9-42):

The site is found to comprise the following areas of peat risk: 40% insignificant risk, 40% significant risk, 20% substantial risk and 0% serious risk.

This statement does not appear to correspond with the Peat Stability Risk Assessment where relevant assessment areas are assigned a low or negligible pre-control measure risk-rating. Please clarify.”

2.6.2 Applicant’s Response

The text included in the last sentence on Page 9-42 of Chapter 9 of the EIAR is an erratum. This text reads:

The site is found to comprise the following areas of Peat risk: 40% insignificant risk, 40% significant risk, 20% substantial risk and 0% serious risk.

This text does not apply to this site, which is largely flat and does not have any significant peat stability risk.

A full assessment of peat stability is detailed in the Peat Stability Risk Assessment (PSRA), which is Appendix 9.4 of the EIAR. The evaluation of the peat stability at the site was carried out in accordance with the document *“Peat Landslide Hazard and Risk Assessments, Best Practice Guide for Proposed Electricity Generation Developments – Second edition”* (Scottish Government, 2017).

Peat stability is addressed on a site-specific basis in Section 5.2 and Section 6 of the PSRA (Appendix 9.4 of the EIAR). As per Table 6 of the PSRA, the pre-control risk rating is *Low* or *Negligible*, while the post-control risk rating is also *Low* or *Negligible*, but with a marked improvement to be achieved through post-control measures.

On the *GSI Landslide Susceptibility* mapping for the site, the site is designated as *“Moderately Low”* or *“Low”* susceptibility. There are small areas mapped as *“Moderately High”* susceptibility, but these are located in wooded areas which the site infrastructure has been designed to avoid.



Appendix 1: Drawing 10889-2075 (response to Item 1)



Appendix 2: Revised Natura Impact Statement with AA Screening Report (updated)



Appendix 3: Collision Risk Model (updated)




Appendix 4: Drawing 10889-2076 (response to Item 5)





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