

3.

CONSIDERATION OF REASONABLE ALTERNATIVES

3.1

Introduction

Article 5(1)(d) of Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (codification) as amended by Directive 2014/52/EU (the Environmental Impact Assessment (EIA) Directive) requires that the Environmental Impact Assessment Report (EIAR) prepared by the developer contains *“a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.”*

Article 5(1)(f) of the EIA Directive requires that the EIAR contains *“any additional information specified in Annex IV relevant to the specific characteristics of a particular project or type of project and to the environmental features likely to be affected.”*

Annex IV of the EIA Directive states that the information provided in an EIAR should include a *“description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.”*

As detailed in Section 1.1.1 in Chapter 1 of this EIAR, the various development components are described and assessed using the following references: 'Subject Development', 'Existing Development', 'Prospective Development', 'Permitted Development', 'Site', 'Wind Farm Site', 'Grid Connection Site', 'BMEP Site', 'Grid Connection', 'November 2020 Peat Slide', '2017 EIAR' and 'proposed turbines' or 'proposed turbine locations'. Please see Section 1.1.1 of this EIAR for further details. A detailed description of the Existing Development is provided in Chapter 4 of the rEIAR. A detailed description of the Prospective Development is provided in Chapter 4 of this EIAR.

This section of the EIAR contains a description of the reasonable alternatives that were studied by the developer, which are relevant to the Prospective Development and the Subject Development. It provides an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. The consideration of alternatives is an effective means of avoiding environmental impacts. As set out in the Environmental Protection Agency's *'Guidelines on The Information to be Contained in Environmental Impact Assessment Reports'* (EPA, 2022), the presentation and consideration of reasonable alternatives investigated is an important part of the overall EIA process.

Hierarchy

EIA is concerned with projects. The EPA, 2022 states that in some instances neither the applicant nor the competent authority can be realistically expected to examine options that have already been previously determined by a higher authority, such as a national plan or regional programme for infrastructure.

Non-environmental Factors

EIA is confined to the environmental effects that influence consideration of alternatives. However, other non-environmental factors may have equal or overriding importance to the developer of a project, for example project economics, land availability, engineering feasibility or planning policy.

Site-specific Issues

EPA, 2022 states that the consideration of alternatives also needs to be set within the parameters of the availability of the land, i.e., the site may be the only suitable land available to the developer, or the need for the project to accommodate demands or opportunities that are site-specific. Such considerations should be on the basis of alternatives within a site, for example design and layout. In this instance, given that the objective of the project is to deliver a wind farm at the Site, there is clearly no reasonable alternative site to be considered.

3.1.2 Chapter Scope

Alternatives are different ways of carrying out the project to meet the agreed project objective(s). In relation to the Subject Development, the objective is to regularise the planning status of the Existing Development and obtain permission for the Prospective Development. In addition, it is an objective of the Subject Development to complete the construction and operation of the wind farm in such a way that the greatest environmental benefits of the Subject Development are realised. On this basis, the scope of this chapter is to consider the reasonable alternatives applicable to the Subject Development. Options for the regularisation of the Existing Development and completion of the Prospective Development have also been considered against the overall objectives of the Subject Development in Section 3.4 of this chapter.

As discussed in Chapter 2 of this EIAR, the Meenbog Wind Farm was subject to an Environmental Impact Assessment by An Bord Pleanála in 2017/2018 (ABP-300460-17). The 2017 EIAR for the Meenbog Wind Farm contained a description of the reasonable alternatives that were considered at that time. The 2017 EIAR considered alternative site locations, constraints, and alternative site design options including options for connection to the national grid and turbine delivery route options. It provided an indication of the main reasons for selecting the chosen option at that time, including a comparison of the likely environmental effects.

Alternatives to the proposed site design (Existing Development and Prospective Development) were considered by the applicant in developing the Prospective Development. However, given the level of infrastructure already constructed (Existing Development) and considering the project objectives set out in Section 3.2.4 below, it was determined that there were no reasonable alternatives to the proposed site design and therefore alternative site designs are not discussed further in this chapter. Similarly, alternative site locations, constraints, and alternative site design options are determined to have no reasonable alternatives. The chapter will focus on the consideration of reasonable alternatives to regularising the planning status of the Existing Development and completing the Subject Development.

This chapter also details the iterative design process for the currently proposed Biodiversity Management and Enhancement Plan (BMEP), and the amenity and recreation proposals for the Prospective Development.

3.2 Methodology

The European Commission published a number of guidance documents in December 2017 in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU as amended by 2014/52/EU) including ‘Guidance on Screening’, ‘Guidance on Scoping’ and ‘Guidance on the preparation of the Environmental Impact Assessment Report’. The EU Guidance Document (EU, 2017) on the preparation of an EIAR outlines the requirements of the EIA Directive and states that, in order to address the assessment of reasonable alternatives, the following must be provided:

- A description of the reasonable alternatives studied; and
- An indication of the main reasons for selecting the chosen alternative with regards to their environmental impacts.

There is limited European and National guidance on what constitutes a ‘reasonable alternative’ however the EU Guidance Document (EU, 2017) defines alternatives as:

“Different ways of carrying out the project in order to meet the agreed objective”.

The guidance states that reasonable alternatives *“must be relevant to the proposed project and its specific characteristics, and resources should only be spent assessing these alternatives”*.

The guidance also acknowledges that *“the selection of alternatives is limited in terms of feasibility. On the one hand, an alternative should not be ruled out simply because it would cause inconvenience or cost to the Developer. At the same time, if an alternative is very expensive or technically or legally difficult, it would be unreasonable to consider it to be a feasible alternative”*.

EPA, 2022 states that *“It is generally sufficient to provide a broad description of each main alternative and the key issues associated with each, showing how environmental considerations were taken into account is deciding on the selected option. A detailed assessment (or ‘mini-EIA’) of each alternative is not required.”*

3.2.1 Relevant Legislation and Guidance

The assessment of alternatives for the Existing Development has been undertaken in accordance with the following guidance documents that have been reviewed, considered and applied by the author:

- European Commission (2017) Environmental Impact Assessment of Projects Guidance on the Preparation of the Environmental Impact Assessment Report (Directive 2011/92/EU as amended by 2014 /52/EU).
- European Commission (2022) Guidance on the implementation of Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment.
- The Department of Housing, Planning and Local Government (DHPLG) (2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.
- Environmental Protection Agency (EPA, 2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.

3.2.2 Iterative Design Process

While it was determined that there were no reasonable design alternatives to completing the Meenbog Wind Farm, the selection of the proposed biodiversity management and enhancement areas within the Site was an iterative process and has evolved from the original enhancement areas selected in the 2017 EIAR to the current, preferred BMEP Site. This iterative process is discussed in detail in Section 3.3.1, below. In addition, following the consenting of the Permitted Development, feedback from stakeholders highlighted health and safety risk of fire and anti-social behaviour risk due to the originally proposed amenity area being located in proximity to existing forestry and set back from the local road. A review of the amenity design proposals, the temporary construction compound design, and meteorological (met) mast design was undertaken as part of the Prospective Development design, and the results of that design review are set out in Section 3.3 of this chapter.

3.2.3 Consideration of Potential Environmental Effects

The purpose of this process is to predict and evaluate, insofar as possible, the environmental effects of the proposed alternatives, highlighting any significant environmental risks and / or benefits that are likely to arise from their implementation.

Each of the alternatives have been assessed under the following EIA topics:

- Population and Human Health
- Biodiversity
- Ornithology
- Land, Soils and Geology

- Geotechnical Risk
- Hydrology and Hydrogeology
- Air Quality
- Climate
- Noise & Vibration
- Cultural Heritage
- Landscape and Visual
- Material Assets
- Traffic
- Major Accidents and Natural Disasters

All potential positive and negative effects are presented individually, with a text description. For the purpose of comparing and ranking the alternatives, the potential environmental effects of each alternative have been assigned numerical scores ranging from +3 to -3 that have been adapted from EPA, 2022, as shown in Table 3-1, below. The numerical scores for each alternative are compared in Section 3.4.4.

Table 3-1 Description of Environmental Effect Scores (adapted from EPA, 2022)

Score	Description
+3	Very Significant / Profound (Positive)
+2	Significant (Positive)
+1	Slight / Moderate (Positive)
0	Neutral / Imperceptible
-1	Slight / Moderate (Negative / Adverse)
-2	Significant (Negative / Adverse)
-3	Very Significant / Profound (Negative/Adverse)

For the assessment of alternatives, it is assumed that standard best practice guidance on pollution prevention was and will be followed at all times to avoid or reduce as far as reasonably practicable the potential for adverse effects on the environment. Examples of best practice measures are provided below, please see relevant chapters of this EIAR and the rEIAR for further details:

- Controls and contingency measures to manage runoff from construction areas and to manage sediment.
- Oils, fuels, lubricants or other chemicals will be stored in an appropriate secure container in a suitable storage area, with spill kits provided. No storage of any oils, fuels, lubricants in close proximity to an aquatic feature.
- All plant and machinery will be equipped with fuel absorbent material and pads to deal with any event of accidental spillage. Spill kits will be available to deal with any accidental spillage.
- All plant used on the site will be regularly maintained, paying particular attention to the integrity of silencers and acoustic enclosures.
- Construction machinery and plant in intermittent use will be shut down in the intervening periods between work or throttled down to a minimum.
- Compliance with normal construction working hours.

3.2.4 Consideration of Overall Project Objectives

As noted in Section 3.1 of this chapter, non-environmental factors may have equal or overriding importance to the developer of a project, for example project economics, land availability, engineering feasibility or planning

policy. Therefore, each of the alternatives are also considered with regard to whether or not they meet the defined objectives of the project.

The overarching objectives for the Subject Development are as follows:

- To deliver a fully operational wind farm at the Site.

This objective has a number of sub-objectives which are listed below:

- Regularise the planning status of the Existing Development;
- Obtain permission to complete the Prospective Development;
- Ensure that all key potential environmental risks are minimised or avoided; and
- Realise the greatest feasible environmental benefit from the Subject Development.

A comparison of the alternatives with the objectives of the Subject Development is provided in Section 3.4.5. A consideration of how the Subject Development meets national climate objectives is provided in Chapter 2 of this EIAR.

3.3 Iterative Design Process

The finalisation of the Prospective Development required an iterative design process for the proposed BMEP Site and the Recreation Amenity Design. These elements form part of the Prospective Development. These alternatives are outlined and considered in this section.

3.3.1 Alternative BMEP Site

The selection of the proposed biodiversity management and enhancement areas within the Site was an iterative process and has evolved from the original enhancement areas selected in the 2017 EIAR to the current, preferred BMEP Site. The final biodiversity enhancement and mitigation measures are detailed within Appendix 6-4: Biodiversity Management and Enhancement Plan (BMEP) of this EIAR. The BMEP Site, as defined in Chapter 1 of this EIAR, refers to the areas of the Site to be enhanced for hen harrier habitat and peatland habitat. The BMEP provides a comprehensive plan for the conversion of approximately 108 hectares of coniferous forestry to peatland and scrub habitats. The BMEP has been designed to create approximately the same amount of permanent foraging habitat for hen harrier as will potentially be lost by the Prospective Development. It is recognised that anything that benefits potential prey species is of benefit to the hen harrier. The BMEP (following this principle) aims to provide an increase in the availability of passerine prey within restoration areas. The BMEP will also include the restoration of approximately 6.2 hectares of blanket bog on a flat section of the felled area with relatively deep and wet peat. This will provide approximately twice as much blanket bog habitat as has been lost or degraded by the Existing Development and the November 2020 Peat Slide combined. No further peatland will be lost to facilitate the Prospective Development.

During the site selection process for the BMEP Site, the preference was for larger, more continuous blocks of forestry within a suitable distance from the Wind Farm Site, that could achieve the objectives of the BMEP. BMEP Alternative Iteration no. 1, along with the final BMEP Site, shown in Figure 3-1 below. Please note, Iteration no. 2 to Iteration no. 5 are not shown on this figure, as these areas were considered in terms of the surrounding landscape as a whole before being excluded, rather than establishing specific areas.

The BMEP (Appendix 6-4 of this EIAR) contains proposed measures to ensure that there is no net habitat loss for hen harrier due to the identified likely significant negative effect resulting from the Prospective Development. This opportunity for the wind farm industry to fund the enhancement of hen harrier habitat was highlighted in the most recent National Survey of Breeding Hen Harrier (2022) report. Section 4.6.7 states:

‘There are opportunities for the wind energy industry to increase levels of land management certainty, and regulation/management of the activities within and surrounding wind farms (e.g. recreational users, dog walkers etc) and identify opportunities for the retention and enhancement of habitats suitable for breeding (and wintering) hen harrier within and surrounding renewable energy developments.’

The land selection for the BMEP Site was based on knowledge of hen harrier use of the area, as well as the current baseline condition of the land and its potential to be of value to hen harrier.

3.3.1.1 BMEP Area Iteration no. 1: Meenacrumlin

North of the Wind Farm Site are the two parcels of forestry that were proposed for enhancement in the Hen Harrier Habitat Enhancement Plan submitted as part of the 2017 EIAR (Meencrumlin). The larger of the two parcels originally proposed is now surrounded by mature forestry blocks, therefore connectivity to this area for hen harrier would be very low. Hen harrier were not recorded in the general area around Meencrumlin during the most recent surveys (although it is acknowledged that survey coverage was low at this location). Due to the mature forestry which had established in the area, these two parcels were no longer considered appropriate for the BMEP measures.

3.3.1.2 **BMEP Area Iteration no. 2: Barnesmore/Carrickaduff and Killeter**

There are four known hen harrier nests at the Wind Farm Site are located to the north and north-west of the turbine layout. Because of this, lands to the south, south-east and parts of the south-west of the Wind Farm Site (Barnesmore/Carrickaduff and Killeter) were excluded from the selection process so as not to create a potential risk for hen harrier to travel through the turbine area for foraging. In addition, because field survey results suggest that there may be another hen harrier resident south of the Wind Farm Site (Killeter), therefore it was decided not to select lands that may be on territory boundaries to avoid interference.

3.3.1.3 **BMEP Area Iteration no. 3: Croaghmagawna**

Some lands that are currently sub-optimal for hen harrier (i.e., forestry) were present to the west of the Wind Farm Site (Croaghmagawna). However, these were partially within 750m of the proposed turbine layout. NatureScot (2022) recommends a disturbance buffer for breeding hen harrier of 500-750m. In order to provide the highest possible quality of enhancement for hen harrier, it was decided to select lands that were further than 750m from any source of displacement that could occur from the proposed turbines. As such, these lands were excluded from the selection process.

3.3.1.4 **BMEP Area Iteration no. 4: Barrack Hill**

Lands further west (Barrack Hill) that are also currently sub-optimal for hen harrier (i.e., forestry) were considered. However, as described above, it is possible that the Barnesmore Gap creates an ecological barrier or that it is the western edge of the pair's territory. These lands were excluded from the selection process because of the possibility that the hen harrier pair would not travel to this area.

3.3.1.5 **BMEP Area Iteration no. 5: Croaghonagh**

Some lands that are currently sub-optimal for hen harrier (i.e., forestry) were present to the north of the Wind Farm Site (Croaghonagh), and are also in closer proximity to the known nest sites. Some forestry was partially within 750m of the proposed turbine layout therefore, as explained above, these were not considered appropriate for enhancement. The blocks of forestry further than 750m from the proposed turbine layout were considered. However, on inspection, some of these areas of forestry contained extensive open areas and large rides, while other areas showed poor tree growth and did not have a closed canopy, therefore may already provide suitable habitat. When hen harrier activity recorded during surveys in this area was analysed, there was evidence of hen harrier already hunting and courting in these areas. As such, these were no longer considered suitable for enhancement as they were already used by hen harrier.

3.3.1.6 **BMEP Area Iteration no. 6: Meenbog**

To the east of the Wind Farm Site, there is an open area of peatland (Meenbog). To the east of this open peatland at Meenbog is an area of forestry that is currently sub-optimal for hen harrier. This area of forestry separates Meenbog from further open peatland to the east in Tievecloghoge and Meenalaught. In addition, parts of the peatland in Tievecloghoge and Meenalaught have been planted with forestry and are currently sub-optimal for hen harrier. As described above, field survey data suggest that the pair nesting at the Wind Farm Site hold a territory extending from Croaghonagh in the west to Meenalaught in the east. As such, these forestry blocks in Tievecloghoge and Meenalaught fall within the territory. Hunting and winter roosting has been recorded in the open peatland adjacent to the forestry blocks.

Two blocks of forestry that are suitable for enhancement were identified. One of these is a large block in Tievecloghoge, while the second block divides Meenbog from Tievecloghoge. These are referred to as Parcel 1 and Parcel 2 respectively, and together form the BMEP Site.

The justification for the choice of this location of the BMEP Site is further detailed in Appendix 6-4 of this EIAR, and includes the following:

- By replacing forestry habitat with favoured peatland foraging habitat, the BMEP will provide habitat of much higher quality than that currently used by the hen harrier.
- Larger and more continuous areas of land are widely recognised to be more ecologically valuable for conservation, with hen harrier in particular relying on extensive, uninterrupted habitat with low disturbance. The areas are already adjacent to open peatland and in proximity to each other. Enhancing habitat in these plots will therefore provide connectivity between areas of suitable habitat in the wider landscape.
- The removal of forestry will reduce negative edge effects through deforestation, e.g., predation.
- There is a high likelihood of the BMEP Site being encountered by hen harrier as breeding hen harrier occur locally and the lands are within their territory. Field survey data for the Prospective Development shows that hen harrier are using open peatland (Tievecloghoge bog) that is adjacent to Parcel 1 and within 1.5km of Parcel 2.
- Both plots are within the South Donegal 1 non-designated regionally important area for hen harrier (as shown in 'Hen Harrier Conservation and the Wind Energy Sector in Ireland'; NPWS, 2021).

Appendix 6-4 BMEP of this EIAR provides further detail on the proposed BMEP Site and sets out the methodology to achieve the management objectives of the BMEP Site.

The outcome of the iterative process resulted in the selection of Iteration no. 6 to form part of the Prospective Development.

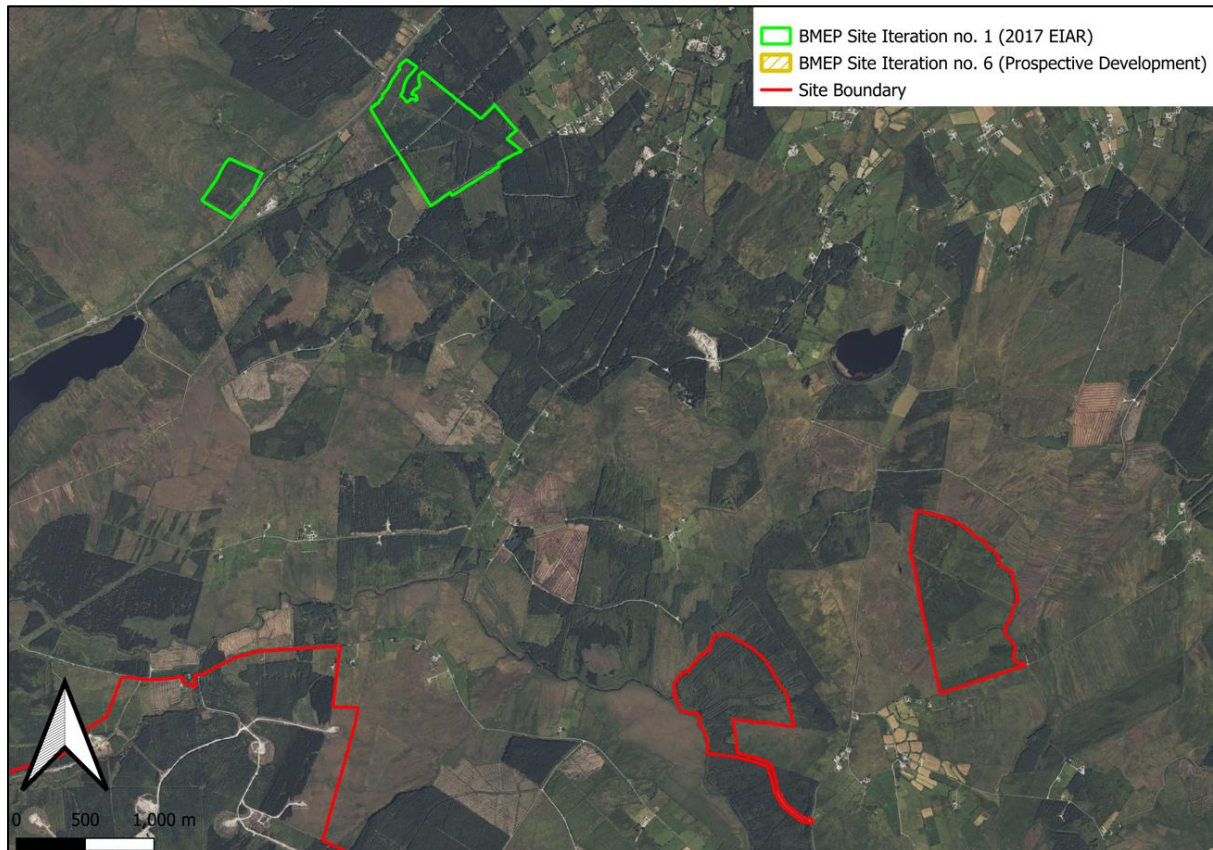


Figure 3-1 BMEP Site Iteration no 1 (2017 EIAR) and no. 6 (Prospective Development)

3.3.2 Alternative Recreation Amenity Design

The identification of the recreation amenity area and walkways locations within the Site was an iterative design process and has evolved from the original amenity design selected in the 2017 EIAR to the current, preferred design. The final amenity design proposal is discussed in detail in Section 4.4.1.10 of this EIAR. Figure 3-2 below illustrates the amenity design Iteration no. 1 and amenity design iteration no. 2.

3.3.2.1 Amenity Design Iteration no. 1

The amenity design proposal in the 2017 EIAR comprised of a walkway and footbridge from the secondary Wind Farm Site entrance off the L-6554 Local Road and an Amenity Area to be established on the temporary construction compound following the completion of the construction of the Permitted Development, located in the northwest of the Wind Farm Site. Additional amenity trails proposed for the Permitted Development extended from T06 to T05 and connected T04, T07 and T09, comprised of walkways across peatlands, separate to the Permitted Development wind farm roads.

3.3.2.2 Amenity Design Iteration no. 2

Post consent process feedback from stakeholders on the Permitted Development highlighted health and safety risk of fire and anti-social behaviour risk due to the proposed amenity area being located in proximity to existing forestry and set back from the local road. Since the amenity area has not yet been constructed, a review of the amenity design proposal was undertaken as part of the Prospective Development design.

In order to reduce the potential impact on existing habitats in the area, to avoid interaction with areas of deep peat and address concerns raised as part of the post consent process, the original area (iteration no. 1) was not considered optimal for the amenity design proposal. The proposed amenity design was updated to utilise existing infrastructure to reduce the Prospective Development footprint and potential impacts on habitats. The final amenity design proposal consists of the upgrade of an existing entrance and forestry track off the L-6554 Local Road, approximately 150m west of the secondary Wind Farm Site entrance, with the proposed amenity area located adjacent to the road, with a set back of approximately 25m from the public roadway. A shorter amenity walkway and footbridge linking the new carpark and amenity area to the Wind Farm Site roads to the east is proposed, along with a shorter boardwalk from T06 to Carrickaduff Lough reducing the footprint of the Prospective Development. The remainder of the proposed walkways are located within the Wind Farm Site, on existing infrastructure.

The preferred amenity design proposal considers concerns raised in relation to the Permitted Development, while minimising potential impact on existing habitats by the utilisation and upgrading of existing infrastructure, removing the requirement for tracking of machinery across intact peatland and avoiding interaction with areas of deep peat.

The outcome of the iterative process resulted in the selection of Iteration no. 2 to form part of the Prospective Development.

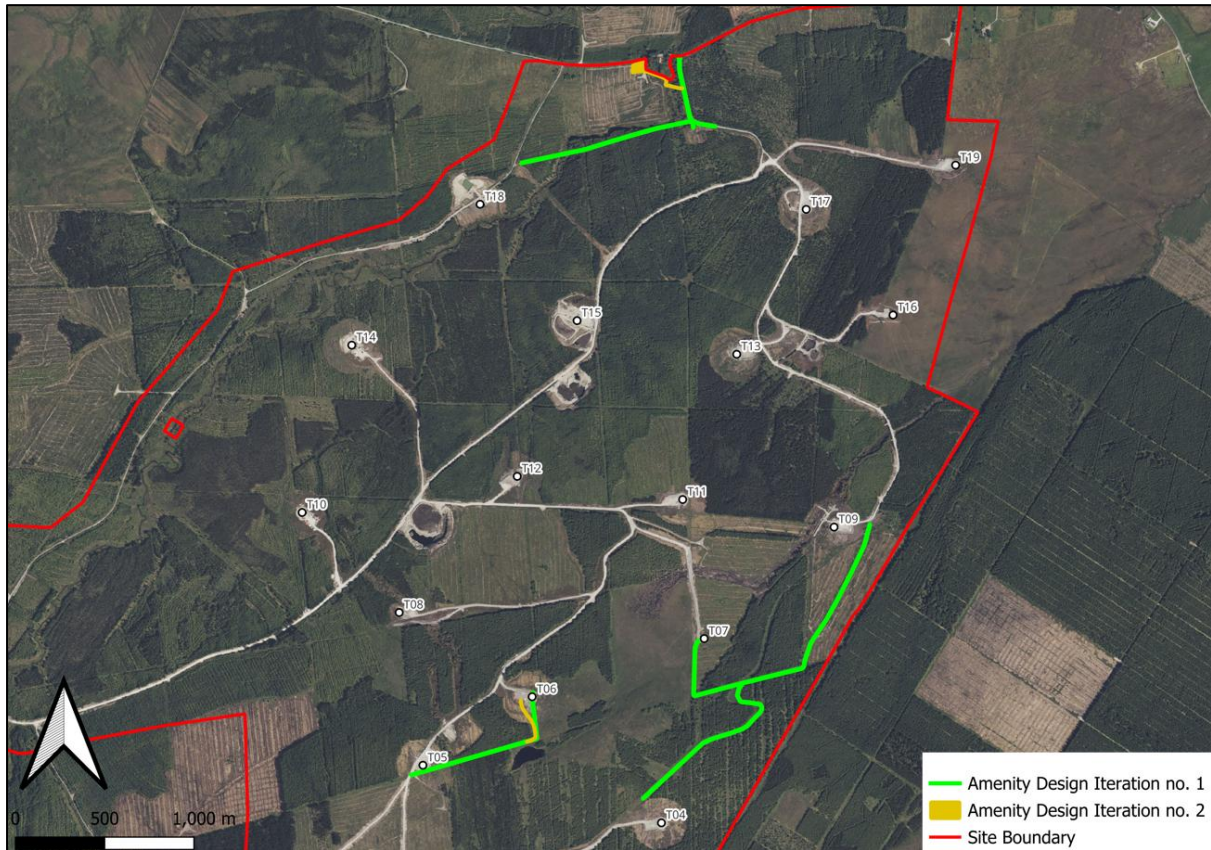


Figure 3-2 Amenity Design Iteration no. 1 (2017 EIAR) and no. 2 (Prospective Development)

3.3.3 Alternative Met Mast Location

The identification of the meteorological (met) mast design within the Wind Farm Site was an iterative design process and has evolved from the original design selected in the 2017 EIAR to the chosen option for the Prospective Development. Figure 3-3 below illustrates met mast location iteration no. 1 and no. 2.

3.3.3.1 Met Mast Location Iteration no. 1

The met mast design in the 2017 EIAR comprised of a proposed structure up to a maximum height of 110 metres located to the south of proposed turbine T10, and to the west of the access track to this turbine. No met mast was constructed as part of the Existing Development.

3.3.3.2 Met Mast Location Iteration no. 2

As part of the Prospective Development iterative design process, the met mast was moved to its current location to the west of the access road to turbine T10, approximately 65 metres northeast of the location proposed in the 2017 EIAR. The chosen location for the Prospective Development utilises an existing cleared hardcore area, and does not necessitate any clearance of vegetation that would be required at the location of iteration no. 1 proposed in the 2017 EIAR. Use of an existing hardcore area will also allow for a shorter construction period. The chosen location also allows for the relaying of a telecommunications link, if required, that may be disrupted by the location of proposed turbine T08. This is further discussed in Section 15.2.4.2 of Chapter 15 of this EIAR.



Figure 3-3 Met Mast Location Iteration no. 1 (2017 EIAR) and no. 2 (Prospective Development)

3.3.4 Alternative Temporary Construction Compound Location

The selection of the temporary construction compounds (TCC) within the Wind Farm Site was an iterative process and has evolved from the original location selected in the 2017 EIAR to the chosen locations for the Prospective Development. Figure 3-4 below illustrates the TCC locations iteration no. 1 and no. 2.

3.3.4.1 Temporary Construction Compound Iteration no. 1

The TCC design proposals in the 2017 EIAR included 1 no. TCC located north of the onsite 110kV substation, and a second TCC northeast of T15. Similar to Amenity Design Iteration no. 2 above, post-consent process feedback from stakeholders on the Permitted Development highlighted health and safety risk of fire and anti-social behaviour risk due to the TCC northeast of T15 being located in proximity to existing forestry and set back from the local road. As part of the Existing Development, a smaller TCC was constructed to the east of the onsite 110kV substation. The main wind farm TCC was constructed to the southeast of proposed turbine T10, at the location of a pre-existing commercial forestry compound.

3.3.4.2 Temporary Construction Compound Iteration no. 2

As part of the Prospective Development, it is proposed to extend the main wind farm TCC at its current location southeast of T10. The TCC adjacent to the onsite 110kV substation will not be extended, and requires only minor surfacing works as part of the Prospective Development.

Expansion of the existing TCC southeast of T10 as part of the Prospective Development, rather than developing the TCCs proposed as part of the Existing Development, was considered to be the most environmentally prudent option. This approach results in a smaller overall development footprint, thereby reducing the potential for impacts on habitats and air quality during construction.

The TCC at the onsite 110kV substation will continue to be utilised as part of the Prospective Development.

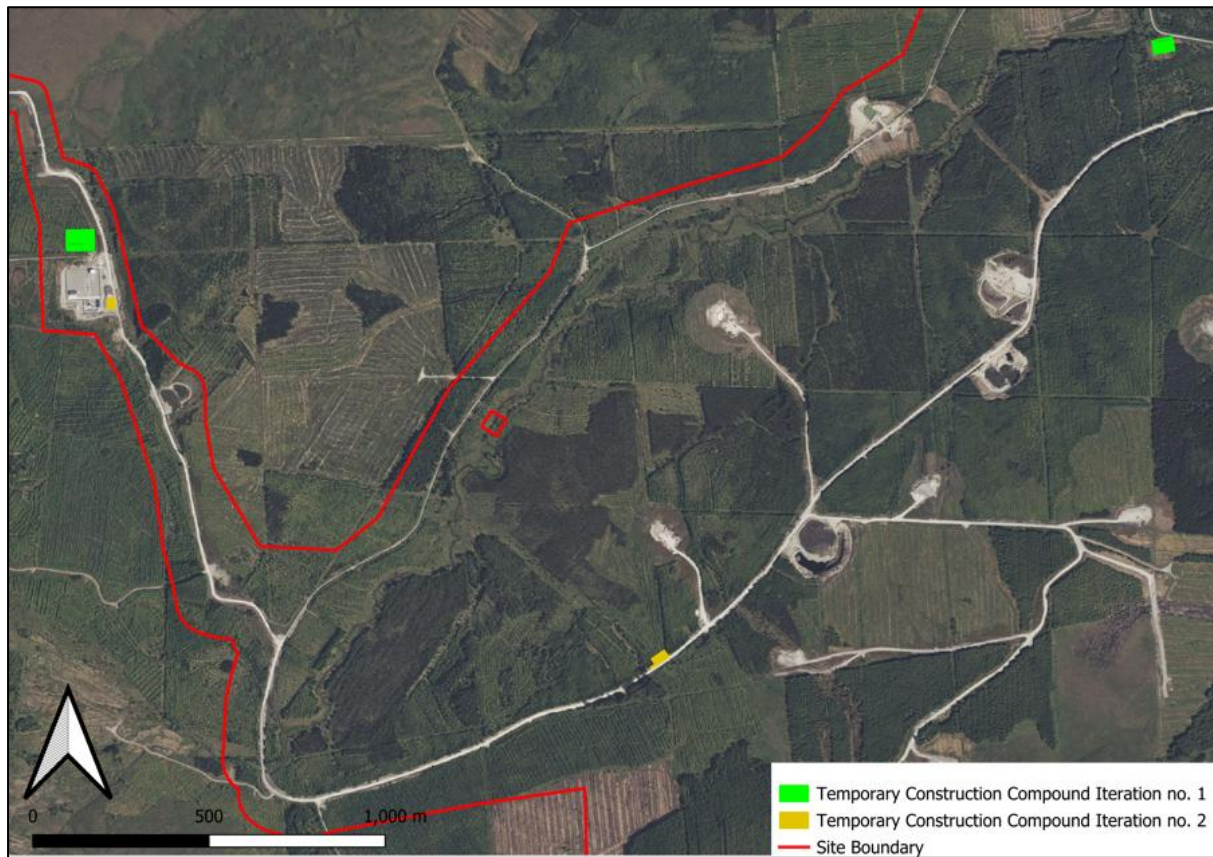


Figure 3-4 Temporary Construction Compound Iteration no. 1 (2017 EIAR) and no. 2 (Prospective Development)

3.4 Consideration of Alternatives

This section considers reasonable alternatives for the regularisation of the Existing Development and completing the Prospective Development which is in effect the implementation of the Subject Development.

The three alternatives considered are:

- **Alternative 1 – “Do-Nothing”.** substitute consent not granted. Existing Development remains *in situ* as an unauthorised development.
- **Alternative 2 – Decommissioning of Existing Development.** substitute consent not granted. Orders made to remove unauthorised development and restore site to the greatest extent practicable. Under this scenario access tracks would most likely remain in-situ for forestry/agricultural use and the 110kV substation and grid connection would be de-energised, secured, remain in-situ pending further planning application to retain them.
- **Alternative 3 – Retain Existing Development and Complete the Prospective Development (Preferred Alternative).** Retain and regularise all existing infrastructure as constructed, and complete and operate the Subject Development.

Each of these alternatives is addressed in the following sections.

3.4.1 Alternative 1 - ‘Do-Nothing’

Annex IV, Part 3 of the EIA Directive states that the description of reasonable alternatives studied by the developer should include *“an outline of the likely evolution thereof without implementation of the project as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.”* This is referred to as the “do-nothing” alternative. EU guidance (EU, 2017) states that this should involve the assessment of *“an outline of what is likely to happen to the environment should the project not be implemented – the so-called ‘do-nothing’ scenario.”*

The ‘Do-Nothing’ alternative is an alternative scenario to retaining and regularising the Existing Development. In this scenario, the Existing Development will remain in-situ as an unauthorised and partially completed wind farm, which is, in effect, the “Do-Nothing” alternative insofar as it represents the current situation as at the date of the application for substitute consent.

There would be no direct negative environmental effects as a result of implementing the “Do-Nothing” alternative. However, by implementing this ‘Do-Nothing’ alternative, the opportunity to capture a significant part of the country’s renewable energy resource by completing the Meenbog Wind Farm (subject to appropriate planning consents) would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The opportunity to generate local employment, local authority development contributions, rates and investment in the local area would also be lost. Furthermore, the opportunity to implement the proposed biodiversity enhancement measures would be lost. Please see Appendix 6-4 Biodiversity Management and Enhancement Plan for details. Under the “Do-Nothing” alternative the opportunity to put in place the community benefit scheme proposed as part of the Prospective Development would also be lost.

For the reasons set out above, the proposal for a wind energy development at the Site was progressed over a Do-Nothing Scenario despite the potential environmental effects. By regularising the Existing Development and progressing the Prospective Development, there is an opportunity to enhance employment and investment in the local area and to capture the available renewable energy resource within County Donegal, thus contributing to meeting national and international climate targets. Please refer to Chapter 5 through to Chapter 16 of this EIAR for further details on the impact associated with the progression of the Prospective Development.

As such, on the basis of the positive environmental effects arising from the chosen alternative when compared to the ‘Do-Nothing’ alternative, the ‘Do-Nothing’ alternative was not the chosen option.

A comparison of the potential environmental effects of the 'Do-Nothing' alternative when compared against the effects of chosen alternative of retaining and regularising the Existing Development and completing the Subject Development are presented in Table 3-2, below.

Table 3-2 Comparison of environmental effects of the 'Do-Nothing' alternative when compared against the preferred alternative of retaining and regularising the Existing Development.

Environmental Consideration	Alternative 1 'Do-Nothing'	Alternative 3. Retain Existing Development and complete the Prospective Development (Preferred Alternative)
Population and Human Health	No further impacts are expected.	Approximately 70 jobs would be created during the construction phase, and approximately 2-3 jobs will be created during operational phase of the Prospective Development. This represents a long-term, slight, positive effect. Based on the assessment detailed in EIAR Chapter 5 (Population & Human Health), and the mitigation measures proposed, there will be no significant negative effects related to shadow flicker from the Subject Development. As detailed in Chapter 12 of the EIAR, residual effects from Noise and Vibration are assessed to be not significant, temporary to short-term, negative effects for the construction and decommissioning phases. For the Operational Phase, the residual effect on sensitive receptors ranges from not significant to imperceptible, long term, negative. As detailed in Chapter 13 (Landscape & Visual) of the EIAR, there will be no significant residual negative effect. The proposed turbine locations adhere to the recommended 500m set back distance in the 'Wind Energy Development Guidelines for Planning Authorities' (hereafter referred to as 'the Guidelines (DoEHLG, 2006) (Department of the Environment, Heritage and Local Government (DOEHLG), 2006) and also the 4 times tip height set-back distance set out for visual amenity purposes, prescribed by the 'Draft Wind Energy Development Guidelines' (December 2019) (hereafter referred to as the 'Draft Guidelines (DoHPLG, 2019)'). As detailed in the assessment in EIAR Chapter 10 (Air Quality), the overall impact will be a Long-term Moderate Positive effect on air quality. There will be a temporary to short-term, slight, negative effect on air quality during the construction phase of the Prospective Development. Overall, no significant negative effects are anticipated on Population and Human Health.
Biodiversity	No further impacts are expected.	The Subject Development includes for a Biodiversity Management and Enhancement Plan (BMEP) providing a local boost to biodiversity. Please see

	The peatland restoration proposal detailed in the Prospective Development Biodiversity Management and Enhancement Plan (EIAR Appendix 6-4) would not be realised and therefore the consequent benefit to local biodiversity would also not be realised.	EIAR Appendix 6-4 for details. This would result in a long term, moderate, positive effect on biodiversity. As detailed in Chapter 6 Biodiversity, the Prospective Development has been designed to avoid or mitigate impacts on biodiversity, including habitats such as blanket bog and wet heath, and upland eroding rivers and species such as Atlantic salmon, otter and freshwater pearl mussel. As detailed in Chapter 6 of the EIAR, it is assessed that there will be no significant residual effect on bats in relation to collision risk as a result of the Subject Development. With the implementation of the BMEP, the overall effect of the Subject Development on peatlands will be a long term, positive effect which is Significant.
Ornithology	No further impacts are expected	As detailed in Chapter 7 of the EIAR, no significant effects of the Prospective Development on any of the Key Ornithological Receptors have been identified. No significant effects on receptors of International, National or County Importance were identified.
Land, Soils and Geology	No further impacts are expected.	As detailed in the assessment in the EIAR Chapter 8 Land Soils and Geology, peat, topsoil and subsoil excavation volumes will be managed within the Wind Farm Site. There will be an imperceptible to moderate, permanent, negative effect on land soils and geology associated with the completion and operation of the Subject Development. The residual effects on peat, topsoil and subsoil are considered not significant. The peat and spoil management proposals set out in the EIAR Appendix 4-2 Peat and Spoil Management Plan sets out the optimal treatment for peat and spoil excavated/generated on site without creating significant impacts for biodiversity, hydrology, land use etc. There will be long term, moderate, positive effects associated with the proposed blanket bog restoration.
Geotechnical	No further impacts are expected	Minor ground works are required to complete the Subject Development. It is considered that these works will have an imperceptible, negative, direct, permanent, unlikely effect in terms of geotechnical risk.
Hydrology and Hydrogeology	No further impacts are expected	There is potential for an imperceptible, negative, indirect, temporary, unlikely effect on downstream

		water quality and aquatic habitats associated with the works required to complete and operate the Subject Development. These potential effects are not considered to be significant.
Air Quality	No direct effects on air quality or climate are expected However, the Do-Nothing alternative would preclude the completion of the Meenbog Wind Farm and would not allow the significant positive effect on greenhouse gas emissions that would result from completing the wind farm.	As detailed in the assessment in the EIAR Chapter 10 (Air Quality), there will be no significant effects on air quality during the construction, and decommissioning phases of the Prospective Development. There will be a Long-term Moderate Positive Impact on air quality during the operational phase.
Climate	This alternative would preclude the completion of the Meenbog Wind Farm and would not allow the significant positive effect on greenhouse gas emissions that would result from completing the wind farm.	As detailed in the assessment in the EIAR Chapter 11 Climate, over the proposed 25-year lifetime of the Prospective Development, 53,097 tonnes of carbon dioxide per annum will be displaced from traditional carbon-based electricity generation. The addition of an estimated installed capacity of 91.2MW of clean energy to the national grid will be a positive contribution to the States renewable energy targets set out in the Climate Action Plan 2025 (CAP25).
Noise and Vibration	No further impacts are expected	Based on the assessment detailed in the EIAR Chapter 12 and the mitigation measures proposed, there will be not significant, temporary to short-term effects on sensitive receptors due to an increase in noise levels from the Prospective Development during the construction phase and decommissioning phase. For the operational phase, the residual effect on sensitive receptors ranges from not significant to imperceptible, long term, negative. None of these effects are considered significant.
Landscape and Visual	No change to the existing landscape is expected.	The LVIA has determined that the Subject Development will have no significant landscape and visual effects. Overall, the Subject Development will be effectively accommodated within the landscape without any Significant effects on the key scenic or landscape sensitivities of receptors identified in the 20km LVIA Study Area. The assessments have determined that the landscape of the Wind Farm Site is a suitable environment capable of effectively accommodating the Subject Development.
Cultural Heritage	No further impacts are expected	As detailed in the assessment in the EIAR Chapter 14 (Archaeological, Architectural and Cultural Heritage), there will be no direct or indirect effects on

		known or unknown archaeology and cultural heritage during the construction, and decommissioning phases of the Prospective Development. During the operational phase, there will be some not significant to moderate residual indirect negative effects on monuments and protected structures. However, in reality the effect will be less severe since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the impact on setting altogether.
Material Assets	No further impacts are expected	There will be no significant effects on aviation, telecommunications, electricity infrastructure and supply, water infrastructure and supply, or waste management services associated with the Subject Development. A small amount of construction waste will be generated associated with the completion of the Subject Development. The effect on waste infrastructure will be imperceptible and it therefore also not significant.
Traffic	No further impacts are expected	Construction of the Existing Development was assessed to have had a short-term, slight negative effect on traffic. Similarly, completion of the Prospective Development is anticipated to have a temporary, slight, negative effect. Operation of the Subject development will have no significant effect on traffic. Overall, the Subject Development has had and will have no significant effects on traffic and transport infrastructure.
Major Accidents and Natural Disasters	The Wind Farm Site has been determined to be stable and since no works would be undertaken under Alternative 1 there is no realistic probability of the Existing Development resulting in or being subject to a major accident or natural disaster.	As detailed in the EIAR Chapter 16 Major Accidents and Natural Disasters, the risk of a major accident and/or disaster during the construction of the Prospective Development is considered 'Low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). The highest risk scenarios (i.e., Traffic Incidents) are considered to be unlikely to occur at any phase of the Subject Development. The Prospective Development has been designed and will be built in accordance with current best practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design. With the implementation of all mitigation and monitoring measures detailed in the EIAR, there will not be significant residual effects associated with the construction, operation and decommissioning of the Subject Development.

3.4.2 Alternative 2 –Decommissioning of Existing Development

For the purposes of this EIAR an alternative has been considered where the Existing Development is required to be removed and the Wind Farm Site and Grid Connection Site remediated to the greatest extent practicable, **notwithstanding the fact that other options may exist or emerge to address the planning status of the Existing Development.**

Alternative 2 represents a scenario where substitute consent is not granted for the Existing Development and an order is made to remove and/or remediate, in part or in full unauthorised development at the Site which has taken place since 2019.

For the purposes of this EIAR it is assumed that the works associated with Alternative 2 would comprise the following:

- Remove/stabilise all unused construction material from site.
- Remove steelwork from partially completed turbine foundations where concrete has not been poured.
- Backfill all excavated but incomplete turbine foundations with side cast spoil material.
- Controlled dismantling and removal of 14 no. reinforced concrete wind turbine foundations. Backfilling of the open excavations with suitable source of rock, glacial till and peat to blend the area into the surrounding area. This will require further excavation from borrow pits.
- Removal of onsite underground electrical and communication cable ducting.
- Excavation and removal of 18 no. hardstand areas and re-profiling of the adjacent areas and covering with 0.5 -1.0m of vegetated peat to blend into the surrounding area
- Removal of naturalised peat cells. Some material may be relocated to on-site borrow pits but a substantial quantity would have to be taken off-site for disposal in a licenced waste disposal facility.
- Reinstatement of the 3 no. Borrow Pits through infilling with material from removed peat cells and hardstands.
- Disconnect the Meenbog 110kV Substation.
- Provide permanent fencing around all borrow pits.

Under this scenario the following elements of the Existing Development would remain in-situ:

- Barrages and peat retaining berms installed in response to peat slides at the site. These would remain in-situ due to safety concerns relating to their removal.
- Access track network within the Wind Farm Site. The access tracks would remain in-situ to facilitate ongoing forestry activities at the site.
- Meenbog 110kV Substation would be de-energised and mothballed pending further planning applications to retain this infrastructure due to its importance in terms of national electricity grid infrastructure. If retention of the substation was not granted this would also have to be demolished and all equipment and waste removed from the Wind Farm Site.
- 110kv grid connection, and associated ducting and joint bays, from the Meenbog Substation to the Clogher Substation pending further planning applications to retain this infrastructure due to its importance in terms of national electricity grid infrastructure. If retention of this infrastructure was not granted then this would also have to be removed.

This above scenario is considered to be a reasonable assumption of the works that might be required to remediate the Wind Farm Site and is considered in detail below.

This alternative would involve significant civil engineering works to remove development from the Wind Farm Site and Grid Connection Site. It is likely that demolition and removal of the concrete foundations would be carried out mechanically using hydraulic excavators, rock breakers and earthmoving transport vehicles similar to the equipment that was used during the construction of the Existing Development.

Open excavations for each incomplete turbine base would need to be backfilled with natural subsoil and peat in a manner that restored the site to its original condition, insofar as was reasonably practicable, so that the turbine areas blended into the surrounding landscape and did not pose a risk to future users of the site.

Removing the turbine foundations would involve open excavations to the underside of the large reinforced concrete pad foundations, which are typically 2.75 m to 3 m below existing ground level over an area of approximately 22.5 m x 22.5 m. The peat and glacial till around the perimeter of the excavation would have to be battered back to a stable temporary slope. In areas of deep or weak peat, temporary support in the form of rockfill berms may be required to support the peat. Hydraulic rock breakers would be required to break up the reinforced concrete foundations, which would generate steel and crushed concrete waste material that would need to be hauled off site along the existing access roads for recycling or disposal. The resulting open excavations for each turbine base would need to be backfilled with natural subsoil and peat in a manner that restored the site to its original condition, insofar as was reasonably practicable, so that the turbine areas blended into the surrounding landscape and did not pose a risk to the stability of the existing peat on the Wind Farm Site.

The hardstand areas were constructed using inert crushed rock granular fill that was processed from the bedrock in the borrow pits on the Wind Farm Site. Therefore, removal of the hardstanding's would involve trimming the surface down, reprofiling it to the existing slope and covering it with 0.5-1.0m of vegetated acrotelm peat to match the profile of the surrounding ground.

A suitable source of glacial till subsoil and peat would need to be identified on site or in the general area to obtain sufficient material to backfill the large open excavations for the turbine foundations and to cover the adjacent re-profiled hardstanding areas with peat. It would have an impact on soils and geology at the source for the fill materials. The sourcing of peat from elsewhere to place over excavations at turbine foundations and hardstands would also create an area of de-graded natural bogland elsewhere (i.e. at the source location of where it was taken from).

The peat cells that were used for the controlled management of the surplus peat that was excavated as part of the Existing Development would need to be removed. The removal of the peat cells will involve excavation of the vegetated surface and underlying remoulded peat with low ground bearing pressure (LGBP) and long-reach excavators and transportation across the site to the existing borrow pits or off-site for disposal. The excavation will leave an area of stripped vegetation and lowered ground over a wide area at each repository site which will be liable to flooding or accumulation of surface runoff. The excavated material could be used to reinstate the backfilled turbine base excavations and re-profiled adjacent crane hardstanding areas, however, there would be a substantial quantity of material that would need to be transported off-site to a licenced disposal facility.

Reinstating the drains that were constructed for the Existing Development will involve blocking and infilling the drains, where possible, which will result in a gradual rise in the groundwater level on the upper slopes of the mountain.

All internal cable ducting would have to be removed by excavation. The excavated cable ducts would be transported to a suitable facility offsite for recycling or disposal.

Under this scenario barrages and berms installed in response to peat slides would remain in situ as part of the access track network. These barrages were constructed using large rocks, processed from the on-site borrow pits, that were placed with an 'open bond' to allow water to pass through the berm in a controlled manner. Inert crushed rock granular fill that was processed from the bedrock in the borrow pits on the site was placed on top of the barrages to provide a running surface for vehicles and equipment. The most downstream barrage forms part of the road network that is required for ongoing forestry activities at the Wind Farm Site and therefore will be left in-situ. There is a high degree of geotechnical uncertainty associated with the removal of the other barrages. As such, it is considered prudent to retain the existing structures in-situ.

This alternative would lead to significant environmental effects due to the extensive groundworks required to remove and restore the existing foundations, peat cells, and hardstands. The borrow pits which form part of the

Existing Development would be backfilled to the greatest extent possible with spoil and peat and revegetated. The peat cells which form part of the Existing Development would be dismantled and the stored peat material used for restoration of roads and hardstands if suitable or removed from the Wind Farm Site for disposal in a licenced waste facility.

Table 3-3 Comparison of environmental effects of Alternative 2 when compared against the preferred alternative of retaining the Existing Development and completing the Prospective Development

Environmental Consideration	Alternative 2 'Reinstatement Alternative'	Alternative 3. Retain Existing Development and complete the Prospective Development (Preferred Alternative)
Population and Human Health	No significant impacts are anticipated.	Approximately 70 jobs would be created during the construction phase, and approximately 2-3 jobs will be created during operational phase of the Prospective Development. This represents a long-term, slight, positive effect. Based on the assessment detailed in EIAR Chapter 5 (Population & Human Health), and the mitigation measures proposed, there will be no significant negative effects related to shadow flicker from the Subject Development. As detailed in Chapter 12 of the EIAR, residual effects from Noise and Vibration are assessed to be not significant, temporary to short-term, negative effects for the construction and decommissioning phases. For the Operational Phase, the residual effect on sensitive receptors ranges from not significant to imperceptible, long term, negative. As detailed in Chapter 13 (Landscape & Visual) of the EIAR, there will be no significant residual negative effect. The proposed turbine locations adhere to the recommended 500m set back distance in the Guidelines (DoEHLG, 2006) and also the 4 times tip height set-back distance set out for visual amenity purposes, prescribed by the Draft Guidelines (DoHPLG, 2019). As detailed in the assessment in EIAR Chapter 10 (Air Quality), the overall impact will be a Long-term Moderate Positive effect on air quality. There will be a temporary to short-term, slight, negative effect on air quality during the construction phase of the Prospective Development. Overall, no significant negative effects are anticipated on Population and Human Health.
Biodiversity	Greater potential for short term negative effect on biodiversity and ornithology due to additional noise and other disturbance impacts from construction machinery and works. Greater potential for short term negative effects on habitats due to removal of	The Subject Development includes for a Biodiversity Management and Enhancement Plan (BMEP) providing a local boost to biodiversity. Please see EIAR Appendix 6-4 for details. This would result in a long term, moderate, positive effect on biodiversity. As detailed in Chapter 6 Biodiversity, the Prospective Development has been designed to avoid or mitigate impacts on biodiversity, including habitats such as blanket bog and wet heath, and upland eroding rivers and species such as Atlantic salmon, otter and freshwater pearl mussel.

	currently revegetated peat cells. The peatland restoration proposal detailed in the Biodiversity Management and Enhancement Plan (EIAR Appendix 6-4) would not be realised and therefore the consequent benefit to local biodiversity would also not be realised. Long term, imperceptible, positive effect due to the restoration of habitats over hardstands and turbine bases.	As detailed in Chapter 6 of the EIAR, it is assessed that will be no significant residual effect on bats in relation to collision risk as a result of the Subject Development. With the implementation of the BMEP, the overall effect of the Subject Development on peatlands will be a long term, positive effect which is Significant.
Ornithology	No further impacts are expected.	As detailed in Chapter 7 of the EIAR, no significant effects of the Prospective Development on any of the Key Ornithological Receptors have been identified. No significant effects on receptors of International, National or County Importance were identified.
Land, Soils and Geology	Additional slight to moderate negative effects on land soils and geology due to additional groundworks to reinstate the site.	As detailed in the assessment in the EIAR Chapter 8 Land Soils and Geology, peat, topsoil and subsoil excavation volumes will be managed within the Wind Farm Site. There will be an imperceptible to moderate, permanent, negative effect on land soils and geology associated with the completion and operation of the Subject Development. The residual effects on peat, topsoil and subsoil are considered not significant. The peat and spoil management proposals set out in the EIAR Appendix 4-2 Peat and Spoil Management Plan sets out the optimal treatment for peat and spoil excavated/generated on site without creating significant impacts for biodiversity, hydrology, land use etc. There will be long term, moderate, positive effects associated with the proposed blanket bog restoration.
Geotechnical	Potential additional significant geotechnical risk to be managed due to additional groundworks to reinstate the site. Removal of turbine foundations in particular will involve intensive groundworks.	Minor ground works are required to complete the Subject Development. It is considered that these works will have an imperceptible, negative, direct, permanent, unlikely effect in terms of geotechnical risk.

Hydrology and Hydrogeology	Greater potential for indirect effects on local surface water quality due to extensive additional earthworks and groundworks required for the removal of foundations, roads and hardstand areas and the reinstatement of borrow pits and peat cells	There is potential for an imperceptible, negative, indirect, temporary, unlikely effect on downstream water quality and aquatic habitats associated with the works required to complete and operate the Subject Development. These potential effects are not considered to be significant.
Air Quality	Potential for greater, albeit imperceptible effect on Air Quality due to additional construction works, which would lead to additional exhaust and temporary dust emissions.	As detailed in the assessment in the EIAR Chapter 10 (Air Quality), there will be no significant effects on air quality during the construction, and decommissioning phases of the Prospective Development. There will be a Long-term Moderate Positive Impact on air quality during the operational phase.
Climate	Potential for imperceptible, permanent, negative effect on Climate due to increased greenhouse gas emissions during construction and additional groundworks. This alternative would also preclude the completion of the Meenbog Wind Farm and would not allow the significant positive effect on greenhouse gas emissions that would result from completing the wind farm.	As detailed in the assessment in the EIAR Chapter 11 Climate, over the proposed 25-year lifetime of the Prospective Development, 53,097 tonnes of carbon dioxide per annum will be displaced from traditional carbon-based electricity generation. The addition of an estimated installed capacity of 91.2MW of clean energy to the national grid will be a positive contribution to the States renewable energy targets set out in the Climate Action Plan 2025 (CAP25).
Noise and Vibration	Potential for slight negative effects resulting from additional construction machinery and staff transport to and from the Site under this alternative.	Based on the assessment detailed in the EIAR Chapter 12 and the mitigation measures proposed, there will be not significant, temporary to short-term effects on sensitive receptors due to an increase in noise levels from the Prospective Development during the construction phase and decommissioning phase. For the operational phase, the residual effect on sensitive receptors ranges from not significant to imperceptible, long term, negative. None of these effects are considered significant.
Landscape and Visual	No change to the existing landscape is expected.	The LVIA has determined that the Subject Development will have no significant landscape and visual effects. Overall, the Subject Development will be effectively accommodated within the landscape without any Significant effects on the key scenic or landscape sensitivities of receptors identified in the 20km LVIA Study Area. The assessments have determined that the landscape

		of the Wind Farm Site is a suitable environment capable of effectively accommodating the Subject Development.
Cultural Heritage	No further impacts are expected.	As detailed in the assessment in the EIAR Chapter 14 (Archaeological, Architectural and Cultural Heritage), there will be no direct or indirect effects on known or unknown archaeology and cultural heritage during the construction, and decommissioning phases of the Prospective Development. During the operational phase, there will be some not significant to moderate residual indirect negative effects on monuments and protected structures. However, in reality the effect will be less severe since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the impact on setting altogether.
Material Assets	Loss of 110 kV grid connection through the Barnesmore Gap. Significant quantities of demolition waste would be generated in addition to peat and spoil material that would need to be transported off-site for disposal. This is a potentially significant negative effect in terms of waste generation.	There will be no significant effects on aviation, telecommunications, electricity infrastructure and supply, water infrastructure and supply, or waste management services associated with the Subject Development. A small amount of construction waste will be generated associated with the completion of the Subject Development. The effect on waste infrastructure will be imperceptible and it therefore also not significant.
Traffic	Additional effects on traffic due to need to export material from peat cells for disposal elsewhere and to transport any additional machinery, plant and material to Site that may be needed for the construction of new roads, hardstands, or borrow pits in the planned locations.	Construction of the Existing Development was assessed to have had a short-term, slight negative effect on traffic. Similarly, completion of the Prospective Development is anticipated to have a temporary, slight, negative effect. Operation of the Subject development will have no significant effect on traffic. Overall, the Subject Development has had and will have no significant effects on traffic and transport infrastructure.
Major Accidents and Natural Disasters	As noted above, there is potential for additional significant geotechnical risk to be managed due to additional groundworks to reinstate the site. Removal of turbine foundations in particular would involve intensive groundworks which could increase the	As detailed in the EIAR Chapter 16 Major Accidents and Natural Disasters, the risk of a major accident and/or disaster during the construction of the Prospective Development is considered 'Low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). The highest risk scenarios (i.e., Traffic Incidents) are considered to be unlikely to occur at any phase of the Subject Development.

	likelihood of peat instability occurring. The risk scenarios, such as a major traffic accident, are considered to be unlikely to occur if properly managed through appropriate mitigation measures.	The Prospective Development has been designed and will be built in accordance with current best practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design. With the implementation of all mitigation and monitoring measures detailed in the EIAR, there will not be significant residual effects associated with the construction, operation and decommissioning of the Subject Development.
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On the basis that this alternative would have substantially greater environmental effect than the preferred alternative of retaining and regularising the Existing Development through the substitute consent process, and a significantly greater environmental impact than the Do-Nothing alternative, Alternative 2 is not the preferred alternative, and nor is it a credible alternative as it does not achieve the objectives of the project.

3.4.3

Alternative 3 – Retain Existing Development and Complete the Prospective Development (Preferred Alternative)

This preferred alternative of retaining and regularising the Existing Development and completing the Prospective Development is outlined briefly in Chapters 1 of this EIAR and of the rEIAR for the Existing Development. The preferred alternative is described in detail in Chapters 4 of this EIAR and of the rEIAR for the Existing Development. This alternative constitutes the Subject Development for which permission is being sought. Under this alternative the Existing Development would be retained in its current configuration and the Prospective Development would be completed as described in this EIAR. A detailed description of the Subject Development is provided in Chapter 4 of the rEIAR (Existing Development) and Chapter 4 of this EIAR (Prospective Development). Together, the rEIAR and EIAR which accompany the planning application for the Subject Development provide a comprehensive assessment of the potential effects of the Subject Development on the receiving environment. A brief discussion of the potential effects of the Subject Development is provided below and summarised in Table 3-4.

An assessment of potential effects of the Subject Development concluded that whilst temporary significant effects on aquatic habitats and species (brown trout) were identified as a result of the November 2020 Peat Slide, no ongoing or residual effects resulting from the Existing Development were identified. The assessment found that the Prospective Development does not have the potential to result in significant effects on the aquatic environment.

It is concluded that, taken as a whole, the Subject Development does not have the potential to result in any significant effects on biodiversity at any geographic scale either individually or in combination with other projects and land uses.

Under Alternative 3, additional habitat restoration/rehabilitation and hen harrier habitat enhancement measures would be undertaken at the Site. This plan would offset the loss of habitats identified within the Site and further enhance the biodiversity of the Site and its environs. Section 4.4.2.1 of this EIAR further describes the proposed biodiversity management and enhancement measures, with a detailed plan set out in Appendix 6-4 BMEP of this EIAR.

There would likely be imperceptible negative effects on air and climate as a result of emissions from construction vehicles required to complete construction of the Subject Development. Once operational the Meenbog Wind Farm will have significant indirect positive climate effects through reducing greenhouse gas emissions.

The preferred alternative of consenting the Subject Development will have direct positive climate effects through enabling the production of renewable energy at the Site, reducing greenhouse gas emissions and aid in meeting local, regional, national and European targets. The preferred scenario will also have a direct positive ecological effect through the provision of additional biodiversity restoration/rehabilitation and enhancement measures. There would likely be imperceptible negative effects on air and climate as a result of emissions from construction vehicles required to complete construction of the Subject Development. Once operational, the Meenbog Wind Farm will have significant indirect positive climate effects through reducing greenhouse gas emissions.

There is potential for short term, not significant, negative noise effects resulting from additional construction machinery and staff transport to and from the Site to complete the Subject Development. Once operational the Subject Development will have, at worst, a not significant, long term, negative effect in terms of noise.

An assessment of visual effects was conducted, largely informed by Photomontage Visualisations, and observations recorded during site visits. Imagery was captured from 14 viewpoints within the LVIA Study Area. The assessment concluded that no 'Profound', 'Very Significant' or 'Significant' effects occurred at any of the 14

photomontage viewpoints. The residual effects were found to be Moderate (3), Slight (4), Not Significant (3) and Imperceptible (4). The overall landscape value and sensitivity of the Site is deemed to be 'Low', and the overall residual effects upon the physical fabric of the landscape of the Wind Farm Site, as well as effects on its perceptual and aesthetic character and qualities are deemed to be 'Moderate'. In conclusion, the LVIA determined that no Significant landscape and visual effects were identified. Overall, the Subject Development is effectively accommodated within the landscape without any Significant effects on the key scenic or landscape sensitivities of receptors identified in the 20km LVIA Study Area. The assessments have determined that the landscape of the Wind Farm Site is a suitable environment capable of effectively accommodating the Subject Development.

Table 3-4 below provides a summary of the potential environmental effects of the chosen alternative of retaining the Existing Development and completing the Subject Development.

Table 3-4 Summary of anticipated environmental effects of Alternative 3 (Retain Existing Development and complete Subject Development)

Environmental Consideration	Alternative 3. Retain Existing Development and Complete the Subject Development
Population and Human Health	Approximately 70 jobs would be created during the construction phase, and approximately 2-3 jobs will be created during operational phase of the Prospective Development. This represents a long-term, slight, positive effect. Based on the assessment detailed in EIAR Chapter 5 (Population & Human Health), and the mitigation measures proposed, there will be no significant negative effects related to shadow flicker from the Subject Development. As detailed in Chapter 12 of the EIAR, residual effects from Noise and Vibration are assessed to be not significant, temporary to short-term, negative effects for the construction and decommissioning phases. For the Operational Phase, the residual effect on sensitive receptors ranges from not significant to imperceptible, long term, negative. As detailed in Chapter 13 (Landscape & Visual) of the EIAR, there will be no significant residual negative effect. The proposed turbine locations adhere to the recommended 500m set back distance in the Guidelines (DoEHLG, 2006) and also the 4 times tip height set-back distance set out for visual amenity purposes, prescribed by the Draft Guidelines (DoHPLG, 2019). As detailed in the assessment in EIAR Chapter 10 (Air Quality), the overall impact will be a Long-term Moderate Positive effect on air quality. There will be a temporary to short-term, slight, negative effect on air quality during the construction phase of the Prospective Development. Overall, no significant negative effects are anticipated on Population and Human Health.
Biodiversity	The Subject Development includes for a Biodiversity Management and Enhancement Plan (BMEP) providing a local boost to biodiversity. Please see EIAR Appendix 6-4 for details. This would result in a long term, moderate, positive effect on biodiversity. As detailed in Chapter 6 Biodiversity, the Prospective Development has been designed to avoid or mitigate impacts on biodiversity, including habitats such as blanket bog and wet heath, and upland eroding rivers and species such as Atlantic salmon, otter and freshwater pearl mussel. As detailed in Chapter 6 of the EIAR, it is assessed that will be no significant residual effect on bats in relation to collision risk as a result of the Subject Development. With the implementation of the BMEP, the overall effect of the Subject Development on peatlands will be a long term, positive effect which is Significant.

Ornithology	As detailed in Chapter 7 of the EIAR, no significant effects of the Prospective Development on any of the Key Ornithological Receptors have been identified. No significant effects on receptors of International, National or County Importance were identified.
Land, Soils and Geology	As detailed in the assessment in the EIAR Chapter 8 Land Soils and Geology, peat, topsoil and subsoil excavation volumes will be managed within the Wind Farm Site. There will be an imperceptible to moderate, permanent, negative effect on land soils and geology associated with the completion and operation of the Subject Development. The residual effects on peat, topsoil and subsoil are considered not significant. The peat and spoil management proposals set out in the EIAR Appendix 4-2 Peat and Spoil Management Plan sets out the optimal treatment for peat and spoil excavated/generated on site without creating significant impacts for biodiversity, hydrology, land use etc. There will be long term, moderate, positive effects associated with the proposed blanket bog restoration.
Geotechnical	Minor ground works are required to complete the Subject Development. It is considered that these works will have an imperceptible, negative, direct, permanent, unlikely effect in terms of geotechnical risk.
Hydrology and Hydrogeology	There is potential for an imperceptible, negative, indirect, temporary, unlikely effect on downstream water quality and aquatic habitats associated with the works required to complete and operate the Subject Development. These potential effects are not considered to be significant.
Air Quality	As detailed in the assessment in the EIAR Chapter 10 (Air Quality), there will be no significant effects on air quality during the construction, and decommissioning phases of the Prospective Development. There will be a Long-term Moderate Positive Impact on air quality during the operational phase.
Climate	As detailed in the assessment in the EIAR Chapter 11 Climate, over the proposed 25-year lifetime of the Prospective Development, 53,097 tonnes of carbon dioxide per annum will be displaced from traditional carbon-based electricity generation. The addition of an estimated installed capacity of 91.2MW of clean energy to the national grid will be a positive contribution to the States renewable energy targets set out in the Climate Action Plan 2025 (CAP25).
Noise and Vibration	Based on the assessment detailed in the EIAR Chapter 12 and the mitigation measures proposed, there will be not significant, temporary to short-term effects on sensitive receptors due to an increase in noise levels from the Prospective Development during the construction phase and decommissioning phase. For the operational phase, the residual effect on sensitive receptors ranges from not significant to imperceptible, long term, negative.

	None of these effects are considered significant.
Landscape and Visual	The LVIA has determined that the Subject Development will have no significant landscape and visual effects. Overall, the Subject Development will be effectively accommodated within the landscape without any Significant effects on the key scenic or landscape sensitivities of receptors identified in the 20km LVIA Study Area. The assessments have determined that the landscape of the Wind Farm Site is a suitable environment capable of effectively accommodating the Subject Development.
Cultural Heritage	As detailed in the assessment in the EIAR Chapter 14 (Archaeological, Architectural and Cultural Heritage), there will be no direct or indirect effects on known or unknown archaeology and cultural heritage during the construction, and decommissioning phases of the Prospective Development. During the operational phase, there will be some not significant to moderate residual indirect negative effects on monuments and protected structures. However, in reality the effect will be less severe since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the impact on setting altogether.
Material Assets	There will be no significant effects on aviation, telecommunications, electricity infrastructure and supply, water infrastructure and supply, or waste management services associated with the Subject Development. A small amount of construction waste will be generated associated with the completion of the Subject Development. The effect on waste infrastructure will be imperceptible and it therefore also not significant.
Traffic	Construction of the Existing Development was assessed to have had a short-term, slight negative effect on traffic. Similarly, completion of the Prospective Development is anticipated to have a temporary, slight, negative effect. Operation of the Subject development will have no significant effect on traffic. Overall, the Subject Development has had and will have no significant effects on traffic and transport infrastructure.
Major Accidents and Natural Disasters	As detailed in the EIAR Chapter 16 Major Accidents and Natural Disasters, the risk of a major accident and/or disaster during the construction of the Prospective Development is considered 'Low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). The highest risk scenarios (i.e., Traffic Incidents) are considered to be unlikely to occur at any phase of the Subject Development. The Prospective Development has been designed and will be built in accordance with current best practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design. With the implementation of all mitigation and monitoring measures detailed in the EIAR, there will not be significant residual effects

	associated with the construction, operation and decommissioning of the Subject Development.
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3.4.4 Comparison of Potential Effects

Each of the alternatives has been scored based on the potential environmental effects identified and discussed in Sections 3.4.1 to 3.4.3, above. Table 3-5 is intended to be a visual representation of the anticipated environmental effects of each alternative. Neutral effects are shown in grey, positive effects are shown in green, slight/moderate negative effects are shown in orange, and significant/very significant negative effects are shown in red. A detailed explanation of the scoring system is provided in Section 3.2.3.

Table 3-5 Comparison of Environmental Effects

Environmental Consideration	Degree of Potential Effects and Significance			
	Alternative 1	Alternative 2		Alternative 3
Population and Human Health	0	0		0
Biodiversity	0	-1 *	+1 *	-1 * +2 *
Ornithology	0	0		-1
Land, Soils and Geology	0	-1	-1 *	+1 *
Geotechnical	0	-2		0
Hydrology and Hydrogeology	0	-1		0
Air Quality	0	-1		+2
Climate	0	-1		+2
Noise and Vibration	0	-1		-1
Landscape and Visual	0	0		-1
Cultural Heritage and Archaeology	0	0		0
Material Assets	0	-1		0
Traffic	0	-1		-1
Major Accidents and Natural Disaster	0	-2		-1

* Split cells indicate both positive and negative effects on a given environmental receptor.

Based on the scoring above and discussed in Sections 3.3.1 to 3.3.4, Alternative 3 is the most environmentally beneficial option while Alternative 2 is the least environmentally beneficial option as it has the potential for greatest amount of significant negative environmental effects.

3.4.5 Consideration of Project Objectives

Non-environmental factors may have equal or overriding importance to the developer of a project, for example project economics, land availability, engineering feasibility or planning policy. Therefore, in addition to the comparison of environmental effects, an assessment was undertaken of the various alternatives against the project objectives, as defined in Section 3.2.4, to determine if they can be considered a practicable alternative. A summary of the alternatives considered against the project objectives is presented in Table 3-6 below.

Table 3-6 Summary of Alternatives against the Project Objectives

Project Objectives	Alternative 1	Alternative 2	Alternative 3
Regularises the planning status of the Existing Development	No	Yes	Yes
Facilitates the completion of the Meenbog Wind Farm	No	No	Yes
Provides Offset for Environmental Impacts that Occurred	No	No	Yes
Ensures that all potential environmental risks are minimised or avoided.	Yes	Yes	Yes
Meets Project Objectives	No	No	Yes

Both the “Do-Nothing” alternative (Alternative 1) or Alternative 2 do not meet the overall objectives of the Subject Development and therefore were not considered a reasonable alternative.

3.5 Conclusions

The overarching project objective is as follows: To regularise the planning status of the Existing Development and to obtain permission for the Prospective Development, which will complete the construction and operation of the Meenbog Wind Farm in such a way that all potential environmental risks are minimised or avoided where possible, and that the greatest environmental benefits of the Subject Development are realised.

This chapter examines the various alternative for regularising the Existing Development and completing the Prospective Development and describes them having regard to the following EIA topics: Population & Human Health; Biodiversity; Ornithology; Land, Soils & Geology; Hydrology & Hydrogeology; Air Quality; Climate; Noise & Vibration; Cultural Heritage; Material Assets, and Traffic; and Major Accidents and Natural Disasters.

Based on the assessment of the various alternatives in relation to the EIA topics listed above, it was determined that Alternative 3 was the most environmentally beneficial alternative.

In addition to the comparison of environmental effects, an assessment was undertaken of the various Alternatives against the project objectives. Alternative 3 was determined to be the only Alternative that meets all of the project objectives.

Alternative 3 was selected as the Preferred Alternative as it facilitates the regularisation of the Existing Development, facilitates the completion of the Subject Development, and ensures the potential risks to the environment are minimised. Alternative 3 also provides the highest level of environmental benefits out all the alternatives considered. Therefore, Alternative 3 is the chosen alternative and is assessed in detail in this EIAR and in the rEIAR for the Existing Development.



APPENDIX 1

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APPENDIX 2

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