White Hill Wind Farm Electricity Substation & Electricity Line

Environmental Impact Assessment Report

Chapter 13: Interaction of the Foregoing

White Hill Wind Limited

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13.1 Introduction

This chapter summarises the critical results and conclusions of each individual chapter of this EIAR and identifies interactions between issues arising under separate factors which might otherwise not be noticed but which need to be assessed to ensure all likely significant effects are identified and assessed.

The interactions between effects on different environmental factors are also addressed, as relevant, throughout this EIAR by ensuring that effects are cross-referenced between topics, thus reducing the need to duplicate coverage of such topics. Close coordination and management within the EIA project team, and careful read-across editing, ensured that assessors were vigilant for complex interactions (direct, indirect, secondary and cumulative) and, where they are likely to arise, they are adequately identified and assessed. This included interactions between effects, and possible cumulative effects, arising from the mitigation measures proposed that could magnify effects through the interaction or accumulation of effects.

Reference should also be made to **Chapter 2** which provides an evaluation of reasonable project alternatives and **Chapter 3** which provides a detailed description of the project. The design of the project is an iterative process; the final project integrates numerous 'mitigation by design' measures, and these *a priori* respond directly to many of the likely effects identified in this EIAR.

13.2 Interactions

It is general practice that interactions are shown by a means of a matrix, as set out in **Table 13.1** below, examining each aspect of the receiving environment which is considered in detail in the respective chapters of this EIAR, and cross-tabulated against all other aspects that have also been considered. This is accompanied by a brief text describing the interactions, including during the construction and operational phases.

Where an interaction is considered to be both likely and significant, it is given a reference number in the matrix and detail of the interaction is discussed below, including whether it is weak or strong, or whether the interaction is positive or negative. Where there is no number indicated in the matrix, it is assessed there is no likelihood for any significant effects by way of interaction between the environmental factors.

Interactions	Population & Human Health	Biodiversity	Land &Soils	Water	Air Quality & Climate	Landscape	Cultural Heritage	Noise & Vibration	Material Assets
Population & Human Health					1	2		3	4
Biodiversity			5	6					
Land & Soils		5					7		
Water		6							
Air Quality & Climate	1								8
Landscape	2								
Cultural Heritage			7						
Noise & Vibration	3								
Material Assets	4				8				

Table 13.1: Matrix of Interactions

13.2.1 Interaction 1: Population & Human Health and Air Quality & Climate

The likely effects of the project on Population & Human Health, and the interaction with Air Quality & Climate, have been discussed at **Chapter 4** and **Chapter 7** of this EIAR. The likely effects of the project have been assessed having regard to its characteristics and those of the receiving environment. While it is assessed that the construction of the project will result in dust emissions and emissions from plant and machinery, the likely effects of these increased emission levels are not assessed to be significant and will not significantly affect human health.

The operation of the project will facilitate the transmission of renewably generated electricity from the permitted White Hill Wind Farm to the national electricity network which will, in turn, displace electricity which would otherwise have been generated by, at least in part, fossil fuels. The displacement of fossil-fuel generated electricity will have a positive effect on human health through improved air quality.

13.2.2 Interaction 2: Population & Human Health and Landscape

The likely effects of the project on the landscape, and the interaction with population and human health, have been discussed at **Chapter 4** and **Chapter 9** of this EIAR. The project has been assessed having regard to the sensitivity of the landscape, the degree of intrusion or dominance created by it and the degree to which is it visible in the landscape. Viewshed Reference Points (VRPs) consisting of views from key prospects and receptors were identified and a detailed analysis of each, accompanied by photomontages, is discussed at **Chapter 9**. Overall, it is assessed that the project will not give rise to any likely significant landscape or visual effects such that could result in adverse population or human health effects.

13.2.3 Interaction 3: Population & Human Health and Noise & Vibration

During the construction phase, noise will be generated through a number of typical on-site construction stage activities which will be managed through appropriate mitigation and good construction practices. Likely effects will therefore be short-term and temporary in nature and a perceptible increase in noise, which is sufficient to cause a significant effect to local residential amenity, is not likely. No significant

vibration generating activities are proposed to be undertaken.

No effects are assessed as likely during the operational phase such that could significant affect population & human health.

Accordingly, it is assessed that there will be no significant interactions between Population & Human Health and Noise & Vibration.

13.2.4 Interaction 4: Population & Human Health and Materials Assets

In terms of Population & Human Health and Material Assets, the only likely interaction relates to Transport & Access.

The project is predicted to generate construction traffic during the construction stage. In terms of vehicle movements, it is estimated that approximately 2,341 trips (includes both in and out) of HGVs will be required. The increase in traffic volumes on the surrounding road network will be temporary in nature as the expected duration of the construction phase is 18-months.

In addition, local road users will experience some disruption during the installation of the underground electricity line due to temporary road closures and implementation of diversionary routes; however, traffic management measures will be agreed with the Planning Authority (Authorities) and implemented in full to ensure that any likely significant effects on local residents, business owners and landowners are avoided.

Once the project is in operation, traffic movements to and from the project site will be infrequent, generally averaging 1-2 no. visits per week by a light commercial vehicle for maintenance purposes.

Overall, it is assessed that the project will not result in any likely significant interactions between Population & Human Health, and Transport and Access.

The project will not result in any likely significant interactions between Population & Human Health and Aviation, Telecommunications and Renewable & Non-Renewable Resources.

13.2.5 Interaction 5: Biodiversity and Land & Soils

As outlined at **Chapter 6**, excavated ground exposed during the construction phase may lead to the sedimentation of nearby watercourses. Mitigation measures will be implemented such that there will be no likelihood of silt laden runoff having an adverse effect on water quality and aquatic ecology in surrounding water bodies. Mitigation measures proposed during construction will also ensure that the project does not result in a likely significant effect on soils or the geological environment.

The excavation and removal of soils during construction will lead to habitat loss. However as discussed at **Chapter 5**, the project is predominately located within areas of improved agricultural grassland and the public road corridor, which are of lower ecological importance, and is not located within an ecologically sensitive area.

Overall, the conclusion of the Biodiversity assessment is that the residual effects on the important ecological receptors; including designated sites, habitats, flora and fauna; are not likely to be significant. Therefore, it is assessed that the project will not result in a likely significant interaction between Biodiversity and Land & Soils.

13.2.6 Interaction 6: Biodiversity and Water

As outlined at **Chapter 7**, excavated ground exposed during the construction phase may, in the absence of mitigation, lead to the sedimentation of downstream waters and, consequentially, downstream effects on habitats and species. A suite of comprehensive mitigation measures is proposed which will be fully implemented to exclude the possibility for silt laden runoff to discharge from the site and to ensure that adverse effects on water quality and aquatic ecology do not occur.

The interaction between Biodiversity and Water is also closely related to the interaction between Biodiversity and Land & Soils and this interaction should also be read in conjunction with **Interaction 5**.

In light of the assessment undertaken and the mitigation proposed, there is no likelihood of significant interactions between Biodiversity and Water.

13.2.7 Interaction 7: Land & Soils & Cultural Heritage

The excavation of soils raises the possibility for previously unrecorded sub-surface cultural heritage features to be discovered. To limit any likely adverse effects or significant interactions, as is normal practice on construction sites, archaeological monitoring of all excavations will be undertaken under licence from the Department of Housing, Local Government and Heritage to ensure that any features that may be encountered are appropriately recorded and managed. Overall, therefore, it is assessed that the excavation of soils will not result in any likely significant interaction with Cultural Heritage.

13.2.8 Interaction 8: Air Quality & Climate and Materials Assets (Transport & Access)

There will be no likely significant interaction between Material Assets (Transport & Access) and Air Quality & Climate. Exhaust emissions from construction vehicles will, as described at **Chapter 8**, result in a temporary effect on local air quality. As the likely traffic volumes associated with the operational phase of the project will be very low; overall, it is assessed that there will be no likely significant interaction between Air Quality, Climate and Material Assets (Transport & Access).

13.3 Summary of Interactions & Effects

All environmental factors are interrelated to some degree and the assessment of these interactions is an important requirement of the EIAR process. Having assessed the interaction of likely effects during the construction and operational phases; the interactions are not assessed as likely to result in any impacts that could magnify or accumulate effects through the interaction. All interactions of effects are assessed and have been fully considered in the relevant chapters of this EIAR.

Through facilitating the export of renewable energy to the national grid from the permitted White Hill Wind Farm, the project will result in positive environmental effects at international, national, regional and local level; particularly in relation to air quality where any localised adverse effects resulting from the construction phase will be entirely off-set during the operational phase due to the long term positive effect on both air quality and climate and, in turn, on human health.

Overall, it is assessed that the effect of the project on the receiving environment is not likely to be significant. Likely effects from the project vary in significance but are generally in the minor to negligible range. A number of positive effects have also been identified such as community benefits; a reduction in the use of fossil fuels; and

a significant contribution towards achieving Ireland's national and European targets for energy production from renewable sources.

The likely effects which have been identified in this EIAR demonstrate that the project will not result in any likely significant negative effect on the environment, and will result in a positive effect on the environment by facilitating the production of energy from renewable sources.