



# Pinewoods Wind Farm Substation & Grid Connection

## Chapter 14: Interactions of the Foregoing

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## 14.1 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 co-ordination 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 proposed development. The design of the proposed substation is an iterative process; the final proposed development integrates numerous 'mitigation by design' measures, and these *a priori* respond directly to many of the likely effects identified in this EIAR.

## 14.2 Interactions

It is general practice that interactions are shown by a means of a matrix, as set out in **Table 14.1** 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 operation stage.

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.

The most common interactions for developments of this nature are between human beings and noise, human beings and visual perceptions, and construction traffic effects.

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

**Table 14.1: Matrix of Interactions**

#### 14.2.1 Interaction 1: Population & Human Health and Landscape

The likely effects of the proposed development on landscape, and the interaction with population and human health, have been discussed in **Chapter 4** and **Chapter 9** of this EIA. The proposed development 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 in **Chapter 9**. Overall, it is concluded that the proposed development is likely to go largely unnoticed in the landscape and that it will not result in any likely significant interaction with population and human health.

#### 14.2.2 Interaction 2: 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 mitigated 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, given the

separation distances between existing properties and the subject site.

During the operational phase, noise levels from the proposed development are predicted to be below existing background noise levels at the nearest properties thus avoiding any likely significant adverse effects. Therefore, it is concluded that the proposed development will not result in a likely interaction between population and human health, and noise and vibration.

#### 14.2.3 Interaction 3: Population & Human Health and Materials Assets (Transport & Access)

In terms of population & human health and material assets, the only likely interaction relates to transport and access.

The proposed development will generate traffic during the initial construction stage. In terms of vehicle movements, it is estimated that approximately 4,773 trips (includes both in and out) of HGVs will be required. Some minor levels of disruption may occur; however, traffic management measures will be agreed with the Planning Authority and implemented in full to ensure that any likely significant effects are avoided.

The increase in traffic volumes on the surrounding road network will be temporary in nature as the expected duration of the construction phase is 15-18 months. Once the proposed development is operational, traffic movements to and from the proposed development site will be infrequent, averaging 1-2 no. visits per week by a light commercial vehicle for maintenance purposes. Therefore, it is concluded that the proposed development will not result in a likely significant interaction between population and human health, and transport & access.

#### 14.2.4 Interaction 4: Biodiversity and Land & Soils

As outlined in **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 proposed development does not result in a likely significant negative effect on soils or the geological environment.

The excavation and removal of soils for the construction of permanent features will lead to habitat loss. However as discussed in **Chapter 5**, the proposed development is generally located within areas of improved agricultural grassland, which is of lower ecological importance, and is not located within an ecologically sensitive area.

Overall the conclusion of the biodiversity study is that the residual effects on the important ecological receptors; including designated sites, habitats, flora and fauna; are reduced to slight negative at most, and are not considered likely to be significant. Therefore, it is concluded that the proposed development will not result in a likely significant interaction between biodiversity and land & soils.

#### 14.2.5 Interaction 5: Biodiversity and Water

As outlined in **Chapter 6**, excavated ground exposed during the construction phase may, in the absence of mitigation, lead to the sedimentation of nearby watercourses and downstream effects on habitats and species. A suite of substantial mitigation measures is proposed which will be fully implemented in order to exclude the possibility for silt laden runoff to discharge to surface water features and to

ensure that adverse effects on water quality do not occur. Mitigation measures proposed during the construction phase will also ensure that the proposed development does not result in a likely significant negative effect on soils or the geological environment. The interaction between biodiversity and water is also closely related to the interaction between biodiversity and land and 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.

#### 14.2.6 Interaction 6: Land & Soils and Cultural Heritage

The excavation of soils raises the possibility for previously unrecorded subsurface 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 Culture, Heritage and the Gaeltacht<sup>1</sup> to ensure that any features uncovered are appropriately recorded and managed. Overall, therefore, it is concluded that the excavation of soils will not result in any likely significant interaction with cultural heritage.

#### 14.2.7 Interaction 7: Air Quality & Climate and Materials Assets (Transport & Access)

There will be no likely significant interaction between Material Assets (Transport & Access) and Air Quality and Climate during the construction phase of the proposed development. Exhaust emissions from construction vehicles will result in a negligible adverse effect on local air quality; however, this will not be perceptible to local residents. This is a short-term, temporary effect and is fully addressed at **Chapter 8**. As the likely traffic associated with the operational phase of the proposed development will be very low; overall, it is assessed that there will be no likely significant interaction between Air Quality, Climate and Material Assets (Transport and Access).

### 14.3 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, operational and decommissioning phases; the interaction of effects is not assessed as likely to result in any effects that could magnify effects through the interaction or accumulation of effects. 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 Pinewoods Wind Farm, the proposed development 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 concluded that the effect of the proposed development on the receiving environment is not likely to be significant. Likely effects from the proposed development 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;

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<sup>1</sup> Or as succeeded following reorganisation of Government Departments.

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.

Overall, the likely effects and interactions which have been identified in this EIAR demonstrate that the proposed development will not result in any likely significant negative effect on the environment, and will result in a likely significant positive effect on the environment by facilitating the production of energy from renewable sources at an appropriate location.

