

Chapter 14:

Interactions of the Foregoing

14.1 Introduction

This chapter summarises the critical results and conclusions of each impact and to ascertain how those impacts may interact. Reference should be made to Chapter 2, which addresses site selection and design alternatives. As the design of a wind farm is an iterative process, the final proposed development integrates numerous mitigation measures, these *a priori* respond directly to many of the potential impacts identified in this EIS.

14.2 Interactions

Interactions are considered by a means of a matrix are set out in **Table 14.1** examining each aspect of the receiving environment which is considered in detail in the appropriate chapters of this EIS and cross-tabulated against all other aspects that have also been considered.

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. The most common interactions for a proposed wind farm are between human beings and noise, human beings and shadow flicker, visual perceptions, construction impacts, biological resources and landscape.

<i>Interactions</i>	<i>Human Beings</i>	<i>Flora & Fauna</i>	<i>Soil & Geology</i>	<i>Water</i>	<i>Noise</i>	<i>Shadow Flicker</i>	<i>Landscape & Visual Impact</i>	<i>Transport & access</i>	<i>Climate & Air Quality</i>	<i>Archaeology & Cultural Heritage</i>	<i>Telecommunications</i>
<i>Human Beings</i>					1	2	3	5			4
<i>Flora & Fauna</i>			8	7							
<i>Soil & Geology</i>		8								9	
<i>Water</i>		7									
<i>Noise</i>	1										
<i>Shadow Flicker</i>	1										
<i>Landscape & Visual Impact</i>	3									6	
<i>Transport & Access</i>	5									10	
<i>Air Quality & Climate</i>											
<i>Archaeology & Cultural Heritage</i>			9				6	10			
<i>Telecommunications</i>	4										

Table 14.1: Matrix of Interaction

14.2.1 Interaction 1: Human Beings/Noise

In terms of the construction phase, this noise will be generated through a number of normal on-site construction activities and can be considerably mitigated through appropriate mitigation and good-practice operational controls. Impacts will be short-term and temporary in nature and a perceptible increase in noise which is sufficient to cause a significant impact to residential amenity is not likely given the distance of the existing properties in the area from the subject site.

In terms of the operation phase, noise predictions have been carried out at 33 no. receptors within ten rotor diameters (1,030m) from each proposed turbine. The predictions confirm that the proposed development will not increase noise levels above the applicable lower fixed limits (see **Chapter 10**).

14.2.2 Interaction 2: Human Beings/Shadow Flicker

Once the proposed wind farm is operational there is potential for shadow flicker to occur depending on certain conditions as explained in detail in **Chapter 11**. All properties within ten rotor diameters (1,030metres) of the proposed wind turbines have been assessed for shadow flicker. Thus 33 no. properties were identified and assessed.

It is predicted that, under the 'worst case' scenario, 21 no. of the 33 no. receptors identified would exceed 30 minutes per day. However, this calculation is a 'worst case' scenario and not representative of actual conditions and a very significant over-estimation of likely impact

A more realistic projection is the 'expected' hours per year. Under this scenario, none of the 33 no. receptors surveyed are predicted to experience shadow flicker in excess of 30 hours per annum.

With ongoing monitoring, in the event that shadow flicker exceeding minimum thresholds identified in the Wind Energy Development Guidelines for Planning Authorities 2006, technological mitigation can be simply introduced to fully eliminate any impact on human beings and residential amenity as a result of shadow flicker.

14.2.3 Interaction 3: Human Beings/Landscape & Visual Impact

The landscape and visual impacts of the proposed development have been discussed in **Chapter 8** of this EIS. In terms of wind farm developments, the landscape and visual impact can be considered the most significant impact. Viewshed Reference Points (VRPs) consisting of views from key receptors were identified and a detailed analysis of each is discussed in **Chapter 8**. A series of photomontages is also presented in **Volume II**.

14.2.4 Interaction 4: Human Beings/ Telecommunications

Generating electricity from wind energy has the potential to interfere with the quality of radio waves and microwaves used for communication purposes – analogue TV signals, radio signals, aircraft and navigation systems and microwave links.

As outlined in **Chapter 12**, a range of bodies were consulted regarding the proposed development. To date, none of the organisations which were consulted have raised any concerns in relation to potential interference or conflict with their existing operations.

Due to the recent change to digital broadcasting, the proposed wind farm will not impact upon television signal reception. In the unlikely event that interference radio signals should occur, the developer will remedy any issues with technological mitigation. This is standard procedure for such developments.

14.2.5 Interaction 5: Human Beings/Traffic & Access

The proposed development will generate construction traffic during the initial development phase. In terms of vehicle movements during the construction stage of the proposed development, it is estimated that approximately 3,250 trips (includes both in and out) of HGVs will be required, including abnormal loads transporting turbine components. This will require a temporary upgrade to the R430/L7800 junction. All traffic management measures will be agreed with the Planning Authority in relation to these abnormal loads prior to commencement.

The increase in traffic volumes on the surrounding road network will be temporary in nature as the expected duration of the construction phase is 12-18 months. Once turbines are in operation, traffic movements to and from the site will be very light, probably averaging one visit a week by a light

commercial vehicle or car for maintenance purposes. All trips to and from the site will be undertaken in accordance with the principles of sustainable transport and all traffic management measures will be prepared and implemented to the satisfaction of the Planning Authority

14.2.7 Interaction 6: Landscape & Visual Impact/ Archaeology & Cultural Heritage

As outlined in **Chapter 9**, the site is relatively benign in terms of archaeological and cultural heritage resource. There are 28 no. protected structures within the wider study area. However, the visual impact of the proposed development on these structures and other archaeological features is considered negligible.

14.2.8 Interaction 7: Flora & Fauna / Water

As outlined in **Chapter 5**, the excavated soil and exposed area during the construction phase may lead to the sedimentation of nearby watercourses and downstream impacts on protected habitats. A suite of substantial mitigation measures is proposed which will be fully implemented in order to exclude the potential for the generation of silt laden runoff. Mitigation measure proposed during the construction phase will also ensure that the proposed wind farm development does not result in a noticeable or significant negative impact on soils or the geological environment.

14.2.9 Interaction 8: Flora & Fauna / Soils & Geology

The excavation and removal of soils for the construction of permanent features such as hardstands, access route, and substation may potentially lead to habitat loss. However as discussed in **Chapter 4**, the proposed development is not located within an ecologically sensitive area and will be appropriately managed to ensure no likely significant impacts, including significant mitigation by design measures

14.2.10 Interaction 9: Archaeology & Cultural Heritage / Soils & Geology

As discussed in **Chapter 9**, the assessment of the archaeological, architectural and cultural heritage was carried out on the subject site and it is recommended that a licensed archaeologist be present to monitor topsoil stripping across the site. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed.

14.2.10 Interaction 10: Archaeology & Cultural Heritage /Transport & Access

As discussed in **Chapter 9**, there are no recorded archaeological, architectural or cultural heritage features within the land take of the haul route along the local routes to the proposed development. As a result there will be no adverse impact on the recorded archaeological resource.

The removal of all topsoil and overburden within the proposed area of land take down to geologically deposited strata, including all junction improvement land take identified in **Chapter 13** will be monitored under licence from the Department of Environment, Community and Local Government. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed.

14.3 Summary of Impacts

Overall, it is concluded that the impact of the proposed development on the receiving environment will not likely to be significant. Negative impacts from the proposed development vary in significance but are generally in the minor to negligible range. A number of positive impacts have also been identified such as community/population benefits; a reduction in the use of fossil fuels; and a significant contribution towards satisfying national and European targets for energy production from renewable sources. On balance, the combined impacts which have been identified with this EIS show that the proposed development will not result in an unacceptable adverse impact on the environment.