

## **14 INTERACTION OF THE FOREGOING**

### **14.1 Introduction**

The preceding Chapters 5 to 13 of this EIA identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity, Land, Geology and Soils, Water, Air and Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage and Material Assets, as a result of the proposed Solar Farm and Substation and Grid Connection (the 'Proposed Project'). All of the potential significant effects of the Proposed Project and the measures proposed to mitigate them have been outlined in the preceding sections of this EIA. However, for any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them, or have a neutral effect.

A matrix is presented in Table 14.1 below to identify potential interactions between the various aspects of the environment already assessed in this EIA. The matrix highlights the occurrence of potential positive or negative effects during both the construction (C) and operational (O) phases. The matrix is symmetric, with each environmental component addressed in the previous sections of this EIA being placed on both axes of a matrix, and therefore, each potential interaction is identified twice.

**Table 14.1 Interaction Matrix: Potential for Interacting Impacts**

	Phase	Human Beings, Population & Human Health	Biodiversity, Flora & Fauna	Biodiversity, Birds	Land, Soils & Geology	Water	Air & Climate	Noise & Vibration	Landscape & Visual	Cultural Heritage	Material Assets
Population, Human Health	C	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	O	Black	Light Blue	Light Blue	Light Blue	Light Blue	Green	Light Blue	Light Blue	Light Blue	Light Blue
Biodiversity, Flora & Fauna	C	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	O	Light Blue	Black	Light Blue	Light Blue	Light Blue	Green	Light Blue	Light Blue	Light Blue	Light Blue
Biodiversity, Birds	C	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	O	Light Blue	Light Blue	Black	Light Blue	Light Blue	Green	Light Blue	Light Blue	Light Blue	Light Blue
Land, Soils & Geology	C	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	O	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Water	C	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Air & Climate	C	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue
Noise & Vibration	C	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue
Landscape & Visual	C	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue
Cultural Heritage	C	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue
Material Assets	C	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black

  

**Legend:**

No Interacting Effect:	Light Blue	Positive Effect:	Green
Neutral Effect:	Yellow	Negative Effect:	Pink

The potential for interaction of effects has been assessed as part of the Impact Assessment process. While the work on all parts of the EIAR were not carried out by McCarthy Keville O’Sullivan, the entire project and all the work of all sub-consultants was managed and coordinated by the company. This EIAR was edited and collated by McCarthy Keville O’Sullivan. as an integrated report of findings from the impact assessment process, by all relevant experts, and effects that potentially interact have been assessed in the individual chapters of the EIAR above.

## 14.2 Impact Interactions

Where any potential negative impacts have been identified during the assessment process, these impacts have been avoided by design or reduced by the proposed mitigation measures.

## **14.2.1 Population and Human Health**

### **Population and Human Health and Air & Climate / Noise**

As identified in Chapter 5 of this EIAR, the construction phase has the potential to generate noise and dust, which could create a temporary negative effect. During the operational phase the Proposed Project has the potential to generate noise but as identified in Chapter 10, this will be at acceptable levels.

During the operational phase, the energy generated by the proposed Solar Farm will offset energy and the associated emission of greenhouse gases from electricity-generating stations dependent on fossil fuels, thereby having a positive effect on climate (i.e. slowing the rate of global warming). In doing so, there will likely be reduced effects from climate change on human beings over the 'do-nothing' scenario and continuing to generate energy using fossil fuels.

### **Population and Human Health and Water**

As described in Chapter 8 of this EIAR, the construction phase of the Proposed Project has the potential to give rise to some water pollution as a result of site activities, and any water pollution could have a potential significant effect on other users of that water within the catchment. Mitigation measures are presented in Chapter 8 to minimise the risk of any such issues.

### **Population and Human Health and Material Assets**

Chapter 13 of this EIAR discusses how the construction phase of the Proposed Project will give rise to traffic movements, and is likely to create some temporary inconvenience for other road users. A Traffic Management Plan will be in place to minimise disruption insofar as possible, as described in the Construction & Environmental Management Plan (see Appendix 4-5).

### **Population and Human Health and Landscape**

The construction phase of the Proposed Project will see the temporary introduction of construction machinery and the erection of solar arrays and substation into a natural, but already modified landscape. The erection and operation of the solar arrays and substation will cause an imperceptible landscape and visual effect as a result of the Proposed Project.

## **14.2.2 Biodiversity, Flora and Fauna**

### **Biodiversity, Flora & Fauna and Soils & Geology**

The removal of peat is likely to result in some disturbance of fauna in the non-designated areas surrounding the proposed works area. The removed peat will be stored in peat repositories located within the site and where possible, reinstatement will also be completed e.g. within cable trenches.

### **Biodiversity, Flora & Fauna and Water**

Site activities during the construction phase have the potential to give rise to some water pollution, and consequential indirect effects (such as disturbance and deterioration of habitat quality) on flora and fauna that use that water within the same catchment. The site activities during the construction phase, and continuing on for the operational phase, will give rise to additional localised drainage, which has the potential to have a significant effect on flora and their associated habitats. These potential impacts have been assessed, and the relevant measures will be in place to avoid any water pollution and subsequent effect on flora and fauna.

### **Biodiversity, Flora & Fauna and Air & Climate**

During the operational phase, the Proposed Project will help offset carbon emissions from fossil fuel based electricity generation plants, which will help contribute to a slower increase in the rate of global warming and, consequently, could in combination with other renewable energy projects, contribute to preventing the loss of breeding bird species from Ireland as a result of climate change.

### **Biodiversity, Flora & Fauna and Noise & Vibration**

Site activity during the construction phase could give rise to noise that could be a temporary disturbance to fauna.

### **Biodiversity, Flora & Fauna and Landscape**

The proposed solar array is situated partially within an area of woodland that will be felled during construction. This has the potential to have a visual impact during construction however the area to be felled is located within a central area of the site and will be screened by vegetation and nearby forestry and therefore there is no visual impact on any visual receptors. During the operational phase, proposed landscaping and planting around the substation mitigates potential visual effects.

## **14.2.3 Biodiversity, Birds**

### **Biodiversity, Birds and Water**

Site activities during the construction phase have the potential to give rise to some water pollution, and consequential indirect effects on birds and their prey species (such as disturbance and deterioration of habitat quality) that use that water within the same catchment.

The site activities during the construction phase, and continuing on for the operational phase, are likely to give rise to additional localised drainage, which has the potential to have an effect on the habitats of birds.

### **Biodiversity, Birds and Air & Climate**

During the operational phase, the Proposed Project will help offset carbon emissions from fossil fuel based electricity generation plants, which will help contribute to a slower increase in the rate of global warming and, consequently, could in combination with other renewable energy projects, contribute to preventing the loss of bird species from Ireland as a result of climate change.

### **Biodiversity, Birds and Noise & Vibration**

Site activity during the construction phase could give rise to noise that could be an annoyance for birds.

## **14.2.4 Land, Soils and Geology**

### **Land, Soils & Geology and Water**

As identified in Chapter 7 of this EIAR, the movement and removal of peat during the construction phase has the potential to have an effect on water quality and quantity. Mitigation measures are presented in Chapter 7.

## **14.2.5 Air and Climate / Noise**

### **Air & Climate and Material Assets**

The movement of construction vehicles both within and to and from the site has the potential to give rise to noise and dust annoyance effects during the construction phase. This is assessed further in Chapter 9 of this EIAR, and mitigation measures are presented to minimise any potential effects.

### **14.2.6 Landscape & Visual**

#### **Landscape & Visual and Cultural Heritage**

As described in Chapter 12 of this EIA, the potential for the Proposed Project to change the landscape setting of recorded sites and monuments in the wider area is low.

### **14.3 Mitigation and Residual Impacts**

Where any potential interactive negative impacts have been identified in the above, a full suite of appropriate mitigation measures has already been included in the relevant sections (Chapters 5-14) of the EIA, and summarised in Chapter 15. The implementation of these mitigation measures will reduce or remove the potential for these effects. Information on potential residual effects, and their significance, is also presented in each relevant chapter.