

MWP

Chapter 14 Interaction of the Foregoing Carrownagowan 110kV Grid Connection

14. Interaction of the Foregoing

14.1 Introduction

This Environmental Impact Assessment Report (EIAR) has presented the environmental assessments of the Proposed Development under each required environmental factor. Where relevant, the interaction between the factors, which is the interactions between specific environmental aspects and effects, are already addressed within each of the individual assessment topic areas or chapters of this EIAR.

This chapter of the EIAR evaluates the potential interaction of impacts, which the Proposed Development may have on the receiving environment and sensitive receptors.

14.1.1 Scope and Methodology of Assessment

Article 3 of EIA Directive 2014/52/EU stipulates that “*The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors: (a) population and human health; (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape; (e) the interaction between the factors referred to in points (a) to (d)*”.

The purpose of this chapter is to draw attention to important interactions and interdependencies between one factor or topic and another. Consequently, this chapter now highlights those interactions of the environmental aspects and topics previously detailed and assessed throughout this EIAR. The potential for interactions between one aspect of the environment and another can result in direct or indirect effects, which may be positive or negative. This chapter is completed based on a desktop review and by provision of a matrix to present the main interactions. The assessments and results have previously been presented in the preceding chapters of this EIAR.

14.2 Identification of Environmental Impacts

While all environmental aspects can be inter-related to some extent, the following outlines the key interactions identified between each of the various environmental subject areas considered in this EIAR for both the construction and operational phases of the Proposed Development. The majority of the impacts will occur during the construction phase given the type of development.

Where the potential for significant effects has been identified, the impacts have been avoided or reduced by mitigation measures, as outlined throughout the chapters of the EIAR.

A matrix has been generated to summarise the relevant interactions between specific environmental factors identified for the Proposed Development. The matrix is presented in **Table 14-1**. It contains each of the environmental factors or aspects, which were considered as part of this environmental impact assessment, on both axes. These interactions have been identified for both the construction and operation phases of the Proposed Development and positive impacts are identified.

Full details of the significance of the effects and the relevant interactions of the environmental aspects along with any proposed mitigation are discussed within each of the individual preceding Chapters.

14.2.1 Population and Human Health

Population and Human Health interactions are summarised under the following sections.

14.2.1.1 Noise and Vibration

Plant and machinery used during the construction phase has the potential to cause a temporary nuisance to residents and road users through noise emissions. The results of the construction noise predictions indicate that noise generated during the construction phase will not exceed the acceptable construction noise limit at any dwelling location for the duration of the construction phase. Mitigation measures are presented in **Chapter 9** Noise and Vibration to minimise the risk of any such issues. In the event of cable repair there will be a requirement to open the cable trench to allow access during the operational phase. This will need machinery typically an excavator. It's impossible to know when and where and how often this may occur but it is very unlikely this will be a significant source of major noise nuisance and disturbance.

14.2.1.2 Air Quality and Climate

There is the potential for temporary, negative effects in terms of dust emissions during the construction phase of the Proposed Development. Dust generated during the construction phase is not likely to significantly affect the local air quality; however, there is the possibility of nuisance occurring from dust generated in the vicinity of the site entrances and along the local public road which could affect road users. Dust mitigation measures are presented in **Chapter 11** Air Quality and Climate to minimise the risk of any such issues. Once operational, there will be no dust generated from the Proposed Development. If there is a fault on the line, it would involve a van driving to the location of the nearest cable pulling box and opening the cover and testing the line. The vehicle emission is negligible and may well be electric.

The Proposed Development has a positive effect on air quality during its operational phase as it facilitates the transmission of renewable energy from the wind farm to the national grid, thereby reducing the emissions associated with traditional energy generation from fossil fuels.

14.2.1.3 Material Assets

Chapter 12 Material Assets of this EIAR discusses how the construction phase of the Proposed Development will give rise to increased traffic on the local road network and a number of traffic management measures, including alternating one-way stop/go traffic and temporary road closures with local diversion routes. This will result in temporary disruption to existing traffic and access for local landowners, as well as property owners/residents in the vicinity of the route and is likely to create some temporary and negative effects. A construction-phase Traffic Management Plan (**Appendix 2-3**, Volume III) will be implemented to manage traffic coming to and from the Proposed Development site.

14.2.1.4 Landscape and Visual

As outlined in **Chapter 13** Landscape and Visual, there will be visual effects from the Proposed Development where it is in the road corridor or track are only evident during the construction stage. Once any areas which were disturbed are re-vegetated these areas will appear similar to what they were before. The chapter concluded that the Proposed Development will likely result in temporary to short term, not significant visual effects.

Operational phase visual effects are not likely to arise where the cable is underground and installed in the road corridor, which is the case for the majority of the cable route. Any maintenance operations unlikely to result in visual effects and would be similar to temporary road works.

14.2.2 Biodiversity

Biodiversity interactions are summarised under the following sections.

14.2.2.1 Land and Soil

There will be habitat disturbance during the construction phase. The Proposed Development will be confined to existing forestry tracks and the public road network, except where it will traverse degraded upland blanket bog, conifer plantation, recently felled woodland and habitats associated with agriculture at the northern extent of the Proposed Development site. Upland blanket bog habitat that was found to be degraded will be lost along a stretch of no more than 40 meters (m). This loss is not considered significant in the context of the already degraded condition of habitats and ongoing commercial forestry operations within and surrounding this area. Mitigation measures are described in full in **Chapter 6 Biodiversity**.

14.2.2.2 Water

There is the potential for water pollution from different sources during the construction works which may cause effects on the quality of aquatic habitats and thereby adversely impact the fauna that depend on the habitat. These impacts are fully assessed in **Chapter 6 Biodiversity** and **Chapter 7 Water** and the mitigation measures are also described. A CEMP (**Appendix 2-2**, Volume III) has been completed as part of the Proposed Development to manage run-off, particularly of sediment laden water, as a means of protecting water quality and aquatic habitats.

14.2.2.3 Noise and Vibration

The plant and machinery required for the construction works will be noisy. Construction noise will likely result in some avoidance behaviour by fauna, which is addressed in **Chapter 6 Biodiversity**. However, noise disturbance is not considered to be significant in the context of the construction works. Terrestrial fauna utilising the habitats adjacent to the Proposed Development are accustomed to vehicular traffic and agricultural activities.

14.2.3 Water

Water interactions are summarised under the following section.

14.2.3.1 Land and Soil

Construction phase activities will require earthworks resulting in removal of vegetation cover/ road pavement and excavation of mineral subsoil (where present); this will lead to potential sources of pollution for surface waters. The likely impacts and associated effects will be avoided or minimised through the topic specific mitigation measures outlined in **Chapter 7 Water** and **Chapter 8 Land and Soils**.

14.2.4 Cultural Heritage

Cultural heritage interactions are summarised in the following section.

14.2.4.1 Land and Soil

There is potential for previously unrecorded sites of archaeological interest to be disturbed during excavation works. Should any such remains be encountered during construction, impacts may range from moderate to profound direct negative, depending on the nature and significance of the archaeological features. All excavations across previously undisturbed greenfields will also be monitored by a suitably qualified archaeologist. As outlined in **Chapter 10 Cultural Heritage**, if any features of archaeological potential are discovered during the course of the works the Department of Housing, Local Government and Heritage will be informed immediately and further

mitigation will be required, such as preservation in-situ or by record. Any further mitigation will require the approval of the Department of Housing, Local Government and Heritage.

14.2.5 Air Quality and Climate

Air quality and climate interactions are summarised under the following sections.

14.2.5.1 Land and Soils

Dust will be generated from moving and transporting soil and materials in and around the works area and on public roads. This is assessed in **Chapter 11** Air Quality and Climate, and mitigation measures for dust prevention and control are presented to minimise any potential effects.

14.2.5.2 Material Assets

During the construction phase there will be emissions from vehicle exhausts. Exhaust emissions from construction and delivery vehicles during construction are unlikely to have an adverse impact on local air quality and will not impact significantly on local, regional or national Air Quality Standards. This is assessed further in **Chapter 11** Air Quality and Climate, and mitigation measures are presented to minimise any potential effects.

The Proposed Development itself will become a material asset and will have a positive effect on air quality during its operational phase as it facilitates the transmission of renewable energy from the wind farm to the national grid, thereby reducing the emissions associated with traditional energy generation from fossil fuels.

14.2.6 Summary

A matrix has been generated to summarise the relevant interactions and interdependencies between specific environmental aspects and a significance rating has been given. The matrix is presented in **Table 14-1**. It contains each of the environmental topics, which were considered as part of this environmental impact assessment, on both axes. These interactions have been identified for both the construction [C] and operation [O] phases of the proposed development and have been classified as minor or major based on the impacts previously identified. The significance rating is made in accordance with EPA significance rating criteria. Full details of the significance of the impacts and the relevant interactions of the environmental aspects along with any proposed mitigation are discussed within each of the individual preceding Chapters.

A number of interactions have been identified in the EIAR. These are set out below and have been addressed in the relevant chapter.

Table 14-1 Matrix of Impacts

	Population and Human Health	Biodiversity	Water	Land and Soils	Air Quality and Climate	Noise and Vibration	Cultural Heritage	Material Assets	Landscape and Visual
Population and Human Health					C	C		C	C
Biodiversity			C	C		C			
Water		C		C					
Land and Soils		C	C		C		C	C	
Air Quality and Climate	C			C				C/O	
Noise and Vibration	C	C							
Cultural Heritage				C					
Material Assets	C				C/O				
Landscape and Visual									

	Interaction
	No Interaction

C	Construction Phase Impact
O	Operation Phase Impact