MWP

Environmental Impact Assessment Report (EIAR)

Chapter 14 Interaction of the Foregoing

Dernacart Wind Farm
110kV Substation and Grid Connection

Statkraft Ireland

October 2024

Contents

Tables

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
23268	6011	A	01/10/2024	AOC	AOC	CF	Final

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14. Interaction of the Foregoing

14.1 Introduction

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).

This Environmental Impact Assessment Report was prepared with respect to the Dernacart Wind Farm 110kV Substation and Grid Connection project, (please refer to Chapter 2 for a full description of the project and the proposed development). In accordance with the requirements of the EIA directive this EIAR has presented the assessments of the likely significant environmental effects and impacts of the entire project under each required 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.

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 the Environmental Impacts

While all environmental aspects can be inter-related to some extent, the following outlines the key potential interactions identified between each of the various environmental factors considered in this EIAR for both the construction and operational phases of the proposed Dernacart wind farm 110kV substation and grid connection. 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 Dernacart project. 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 [C] and operation [O] phases of the proposed development and have been classified as minor or major based on the impacts previously identified. Potential interactions during decommissioning would be similar to those of the construction phase . The significance rating is made in accordance with EPA significance rating criteria.

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 which included;

Chapter 4	Population and Human Health
Chapter 5	Biodiversity (including Ornithology)
Chapter 6	Land and Soils
Chapter 7	Water
Chapter 8	Air Quality and Climate Change
Chapter 9	Noise and Vibration
Chapter 10	Cultural Heritage
Chapter 11	Landscape and Visuals
Chapter 12	Material Assets – Traffic and Transportation
Chapter 13	Material Assets – Built Services

The most dynamic interaction and interdependencies relate to the connection between ecology, soils, and hydrology. Changes in site run-off from changes and removal of soil cover can result in effects or changes on hydrology, both in terms of water quality and hydraulic regime, which may result in secondary ecological effects on vegetation patterns and habitats and species. The relationship and effects of these aspects have been fully considered in Chapter 5 Biodiversity of the EIAR. The following is a summary of other key interactions:

14.2.1 Population and Human Health

Population and Human Health *and* Noise and Vibration *and* Air Quality and Climate Change

Plant and machinery used during the construction phase has the potential to cause a temporary nuisance through noise and dust emissions. Once operational, there will be noise from the wind turbines and substation, and as assessed in Chapter 9, Noise and Vibration, the project as designed will not result in significant effects.

During the operational phase, the project will contribute towards eventual national decarbonisation which will have beneficial effects on air quality and climate change and a resultant positive effect on the human environment. This is outlined in Chapter 8 Air Quality and Climate Change.

Population and Human Health *and* Water

There is potential for water pollution during the construction phase which could impact on different types of receptors including the human population. Chapter 7 has assessed the potential impacts and describes mitigation measures to ensure there are no significant effects from water pollution.

Population and Human Health *and* Landscape and Visuals

The most visually dominant project infrastructure will be 110kV Substation. Chapter 11 of this EIAR considers the magnitude of landscape change and assesses the landscape and visual impact of the project.

The potential impact on landscape and visual resources during the construction phase will be temporary e.g. use of construction machinery. The operation of the wind farm will introduce wind turbines into a natural, but already highly modified landscape.

Population and Human Health *and* Material Assets (Traffic and Transportation)

Chapter 12 of this EIAR discusses how the construction phase of the project will give rise to increased traffic on a short-term basis and may be an inconvenience for other road users temporarily. A Construction-phase Traffic Management Plan will be implemented to manage traffic coming to and from the site.

Overall, the interaction with Material Assets is considered a positive effect, resulting from the project's contribution to the electricity supply with the provision of a clean energy source.

14.2.2 Biodiversity (including Ornithology)

Biodiversity *and* Land and Soil

There will be some habitat loss during excavation of certain works areas. There will be disturbance to fauna and birds caused by the construction activity. Forestry will be felled to facilitate the construction of infrastructure. The forestry will be replanted elsewhere resulting in no net loss. The likely significant effects and mitigation measures are described in full in Chapter 5, which includes biodiversity enhancement measures for the site. These measures are not a requirement of mitigation or compensation, but rather an opportunity for positive measures to improve the site.

Biodiversity *and* 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 and any others including drainage are fully assessed in Chapter 7 and the mitigation measures are also described.

Biodiversity *and* Noise and Vibration

The plant and machinery required to do the works will be noisy. Construction noise will likely result in some avoidance behaviour by fauna. This is addressed in Chapter 5. The habit loss and disturbance/ avoidance impacts for birds are assessed in Chapter 9.

14.2.3 Land and Soils

Land and Soil *and* Water *and* Biodiversity *and* Cultural Heritage

The civil engineering works will require the excavation and movement of materials. This will lead to habitat loss and potential sources of pollution for surface and underground water. There is also the potential for previously unrecorded sites of archaeological interest to be disturbed during excavation works. The potential for all these interactions and the resultant effects are assessed in detail in the relevant chapters. The likely impacts will be avoided or minimised through the topic specific mitigation measures.

14.2.4 Landscape and Visuals

Landscape and Visual *and* Cultural Heritage

The development site infrastructure has the potential to alter the landscape setting of recorded sites and monuments in the area. The potential impacts and mitigations are described in detail in Chapter 10. The substation and grid development is not situated within a designated landscape therefore the interrelated effects will not be significant.

Table 14.1 Matrix of Impacts

	Major Interaction
	Minor Interaction
C	Construction Phase
O	Operation Phase

	Population & Human Health	Biodiversity	Water	Lands and Soils	Air Quality & Climate	Noise and Vibration	Landscape and Visual	Archaeology & Cultural Heritage	Material Assets – Traffic & Transportation	Material Assets – Built Services
Population & Human Health			C	C	C	C/O	C/O		C	O
Biodiversity			C	C		C/O			C	
Water	C	C		C					C	
Lands and Soils	C	C	C					C	C	
Air Quality and Climate	C								C	
Noise and Vibration	C/O	C/O							C	
Landscape and Visual	C/O							C		
Archaeology and Cultural Heritage				C			C			
Material Assets – Traffic & Transportation	C	C	C	C	C	C				
Material Assets – Built Services	O									