

# ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) FOR THE PROPOSED COOM GREEN ENERGY PARK GRID CONNECTION

---

## VOLUME 2 – MAIN EIAR

### CHAPTER 15 - INTERACTIONS OF THE FOREGOING

---

**Prepared for:**

Coom Green Energy Park Limited



**Date:** April 2026

**Document No:**

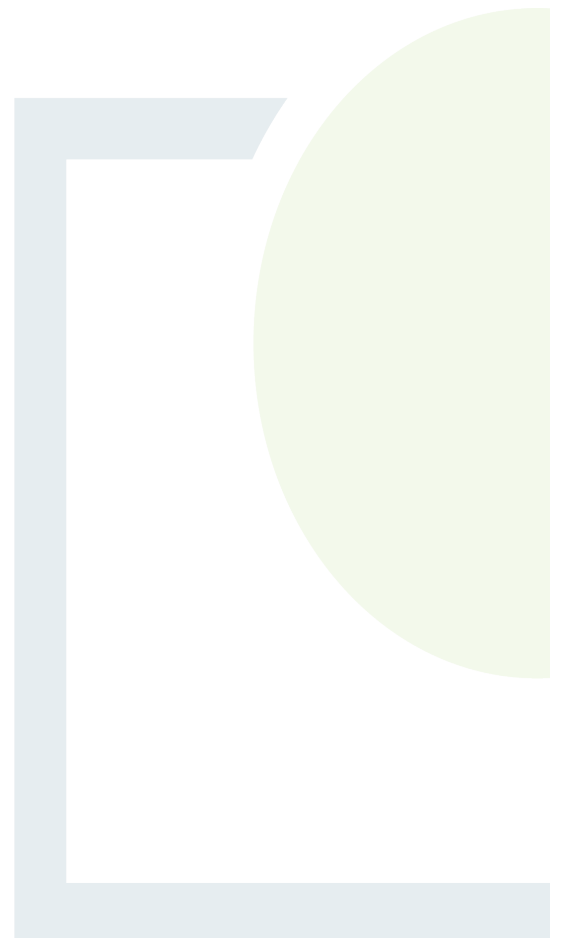
P24308-FT-EGN-XX-RP-EN-0001

Core House, Pouladuff Road, Cork, T12 D773, Ireland

T: +353 21 496 4133 | E: [info@ftco.ie](mailto:info@ftco.ie)

**CORK | DUBLIN | CARLOW**

[www.fehilytimoney.ie](http://www.fehilytimoney.ie)



# TABLE OF CONTENTS

15. INTERACTIONS OF THE FOREGOING .....	1
15.1 Introduction.....	1
15.2 Assessment of Potential Interactions.....	1
15.3 Conclusion .....	7

## LIST OF TABLES

	<u>Page</u>
Table 15-1: Matrix of Interaction Between Key Environmental Aspects (Highlighted orange cells indicate a potential interaction between aspects) .....	2
Table 15-2: Descriptions of interactions and inter relationships between key environmental aspects of the proposed development.....	3



## 15. INTERACTIONS OF THE FOREGOING

### 15.1 Introduction

The requirement for the identification of interactions between the various aspects of the environment as detailed throughout the EIAR is set out in Article 3(1) of the EIA Directive 2011/92/EU as amended by the Directive 2014/52/EU, which states the following:

*“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 protect 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 chapter adheres to guidance in the Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact interactions (European Commission, 1999), the EPA Guidelines on the information to be contained in Environmental Impact Assessment Reports 2022, and the European Commission’s Guidance on the Preparation of the Environmental Impact Assessment Report (2022).

This Chapter assesses the potential for interactions and inter-relationships between one aspect of the environment and another which can result in an effect being either positive or negative, as well as having varying significance. The chapter assesses potential significant environmental effects that may occur in terms of the interaction and inter-relationships of Population and Human Health, Air Quality and Climate, Noise and Vibration, Biodiversity, Soils, Geology and Hydrogeology, Hydrology and Water Quality, Material Assets, Archaeology, Architectural and Cultural Heritage, and Landscape and Visual as a result of the Proposed Development as described in Chapter 2 of this EIAR.

### 15.2 Assessment of Potential Interactions

Table 15-1 herein provides a matrix detailing the key interactions and inter-relationships between the key environmental aspects of the Proposed Development. Table 15-2, below provides further details and examples of the diverse range of interaction and inter-relationships between the key environmental aspects, such as:

- **Direct interactions:** Where one environmental factor directly affects another (e.g. soil disturbance affecting water quality);
- **Indirect interactions:** Where effects occur through a pathway (e.g. air emissions affecting human health);
- **Cumulative interactions:** Where the project interacts with other plans or projects;
- **Interactive effects:** Where multiple effects combine to produce a greater (or lesser) overall effect.

The assessment within this Chapter pertains specifically to the Proposed Development as defined and detailed in Volume 2 - Chapter 2: Development Description.



**Table 15-1: Matrix of Interaction Between Key Environmental Aspects (Highlighted orange cells indicate a potential interaction between aspects)**

	Population and Human Health	Air Quality and Climate	Noise and Vibration	Biodiversity	Soils, Geology and Hydrogeology	Hydrology and Water Quality	Material Assets	Archaeology, Architectural and Cultural Heritage	Landscape and Visual
Population and Human Health		Orange	Orange				Orange		Orange
Air Quality and Climate	Orange				Orange		Orange		
Noise and Vibration	Orange			Orange			Orange		
Biodiversity			Orange		Orange	Orange			
Soils, Geology and Hydrogeology		Orange		Orange		Orange	Orange	Orange	
Hydrology and Water Quality				Orange	Orange		Orange		
Material Assets	Orange	Orange	Orange		Orange	Orange			
Archaeology, Architectural and Cultural Heritage					Orange				
Landscape and Visual	Orange								



**Table 15-2: Descriptions of interactions and inter relationships between key environmental aspects of the proposed development**

Interaction	Description
<p><b>Population and Human Health</b></p> <p>Interacts with: Air Quality and Climate, Noise and Vibration, Material Assets, Landscape and Visual.</p>	<p>Chapter 6 - Population and Human Health has a direct relationship with Chapter 7 - Air Quality and Climate and Chapter 8 - Noise and Vibration, as local residents and the wider community are the primary receptors for dust emissions and elevated noise levels generated during the construction phase. These factors have the potential to temporarily affect residential amenity and human health.</p> <p>This interacts with Chapter 12 - Material Assets, Telecommunications, Traffic and Transport, as the construction of the grid connection requires trenching within the public road network. This affects the population through potential journey delays, temporary restricted access to private properties, and the management of local utility services.</p> <p>The project further relates to Chapter 14 - Landscape and Visual, as the physical presence of construction machinery, the felling of forestry, and the development of the Lackendarragh substation will temporarily alter the visual character and landscape amenity for the local population.</p> <p>To address these potential effects, comprehensive mitigation measures have been developed. As outlined in Chapter 12 - Material Assets, community disruption will be minimised by restricting the active construction zone to a "moving footprint" of 100m to 150m at any given time, with a maximum of 100m of open trench allowed at any one time. A site-specific Traffic Management Plan (TMP) will utilise alternating one-way stop/go systems and designated haul routes or rolling road closures where required. A Community Liaison Officer (CLO) as outlined in Chapter 6 will provide advance notice of works. Temporary noise barriers as outlined in Chapter 8 and standard dust management (water bowsers, wheel-washes) as outlined in Chapter 7 will further protect residential amenity.</p> <p>Operational safety is managed via a Supervisory Control and Data Acquisition (SCADA) system, providing 24/7 remote monitoring and the capability for instantaneous emergency de-energisation of the substation and grid connection as outlined in Chapter 6. There is no specific permanent visual mitigation required as the cable is underground and visual effects are deemed not significant as outlined in Chapter 14 - Landscape and Visual.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to population and human health and its interactions with other environmental disciplines.</p>



Interaction	Description
<p><b><i>Air Quality and Climate</i></b></p> <p>Interacts with: Population and Human Health, Soils, Geology and Hydrogeology, Material Assets.</p>	<p>Chapter 7 - Air Quality and Climate interacts with Chapter 10 - Soils, Geology and Hydrogeology, as earthworks and the handling of excavated materials create the potential for dust generation. This directly impacts the health of local residents addressed in Chapter 6 - Population and Human Health regarding respiratory health and the soiling of property.</p> <p>There is also a correlation with Chapter 12 - Material Assets, Telecommunications, Traffic and Transport through the exhaust emissions and fuel combustion from HGV construction traffic and plant machinery, which contributes to the carbon balance of the project.</p> <p>To address these potential effects, mitigation measures set out in Chapter 7 - Air Quality and Climate include a dust control plan within the CEMP. This involves the use of water bowsers on active work areas and haul roads, the covering of loads, and a strict no-idling policy for construction vehicles. To further reduce carbon effects, Chapter 12 - Material Assets stipulates that stone resources will be sourced from local quarries where possible to minimise haulage distances. Operationally, the grid connection facilitates the consented CGEP Development, resulting in a significant positive cumulative effect by offsetting approximately 86,921 tonnes of CO<sub>2</sub> per annum and displacing fossil fuel reliance as outlined in Chapter 7.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to air quality and climate and its interactions with other environmental disciplines.</p>
<p><b><i>Noise and Vibration</i></b></p> <p>Interacts with: Population and Human Health, Biodiversity, Material Assets.</p>	<p>Chapter 8 - Noise and Vibration interacts with Chapter 6 - Population and Human Health, as sound from trench excavation and construction machinery acts as a potential nuisance to sensitive residential receptors. There is a notable overlap with Chapter 9 - Biodiversity, as elevated noise and vibration levels can cause the temporary displacement of sensitive fauna from their habitats. This relationship is driven by the frequency of HGV movements and plant operations identified in Chapter 12 - Material Assets, Telecommunications, Traffic and Transport.</p> <p>To address these potential effects, mitigation measures detailed in Chapter 8 - Noise and Vibration require that works be carefully phased to avoid simultaneous noisy operations (e.g. tree felling and grid connection works). Where works occur within 50m of Noise Sensitive Locations (NSLs), temporary noise barriers (with a minimum mass of 7kg/m<sup>2</sup> and no gaps) will be deployed, which can reduce noise by up to 10 dB. This also serves to protect sensitive fauna from acoustic disturbance as outlined in Chapter 9 - Biodiversity. Standard working hours will be strictly adhered to and HGV idling is prohibited outside residential properties as outlined in Chapter 8 - Noise and Vibration.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to noise and vibration and its interactions with other environmental disciplines.</p>



Interaction	Description
<p><b>Biodiversity</b></p> <p>Interacts with: Noise and Vibration, Soils, Geology and Hydrogeology, Hydrology and Water Quality.</p>	<p>Chapter 9 - Biodiversity is influenced by Chapter 11 - Hydrology and Water Quality and Chapter 10 - Soils, Geology and Hydrogeology, as aquatic biodiversity can be indirectly affected if soil erosion or hydrocarbon spills enter watercourses during ground-breaking. There is a direct link with Chapter 14 - Landscape and Visual regarding the removal of forestry, which alters habitat availability. Furthermore, the chapter relates to Chapter 8 - Noise and Vibration as fauna may experience displacement due to construction noise and lighting.</p> <p>To address these potential effects, mitigation measures as outlined in Chapter 9 - Biodiversity include an Ecological Clerk of Works (ECoW) with "stop work" authority to oversee construction. Aquatic habitats will be protected via the use of Horizontal Directional Drilling (HDD) to avoid instream works on EPA watercourses. Silt traps and brash mats will be used during felling to prevent sediment from reaching watercourses as outlined in Chapter 11 - Hydrology and Water Quality. Vegetation clearance will strictly occur outside the breeding bird season (1st March – 31st August). Trenches deeper than 1m will be covered or fitted with ramps to prevent mammal entrapment. An Invasive Species Management Plan will be implemented as outlined in Chapter 9, and bat-sensitive lighting (warm-white LED <math>\leq 3000\text{K}</math>) will be utilised.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to biodiversity and its interactions with other environmental disciplines.</p>
<p><b>Soils, Geology and Hydrogeology</b></p> <p>Interacts with: Air Quality and Climate, Biodiversity, Hydrology and Water Quality, Material Assets, Archaeology, Architectural and Cultural Heritage.</p>	<p>Chapter 10 - Soils, Geology and Hydrogeology is connected to Chapter 7 - Air Quality and Climate as a source of dust and to Chapter 11 - Hydrology and Water Quality and Chapter 9 - Biodiversity as a source of sediment runoff. It has a relationship with Chapter 12 - Material Assets regarding the structural stability of road foundations and with Chapter 13 - Archaeology as soil stripping is the primary activity that could potentially disturb unrecorded subsurface artefacts.</p> <p>To address these effects, subsurface works will be overseen by geotechnical personnel as outlined in Chapter 10 - Soils, Geology and Hydrogeology. To prevent cable trenches from acting as conduits for groundwater, clay plugs will be installed at intervals. All fuels will be stored in 110% bunded, double-walled tanks to prevent aquifer contamination. Archaeological monitoring will be conducted during all greenfield soil-stripping to protect potential heritage assets as outlined in Chapter 13 - Archaeology, Architectural and Cultural Heritage. Road cleanliness will be maintained via road sweeping and adherence to the restricted excavation limits as outlined in Chapter 12.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to soils, geology and hydrogeology and its interactions with other environmental disciplines.</p>



Interaction	Description
<p><b>Hydrology and Water Quality</b></p> <p>Interacts with: Biodiversity, Soils, Geology and Hydrogeology, Material Assets.</p>	<p>Chapter 11 - Hydrology and Water Quality links to Chapter 10 - Soils, Geology and Hydrogeology regarding the management of excavated soil and to Chapter 9 - Biodiversity through the potential for pollutants to enter waterbodies. There is a correlation with Chapter 6 - Population and Human Health and Chapter 12 - Material Assets regarding the protection of water quality in local private wells and Group Water Schemes (GWS).</p> <p>Mitigation measures as outlined in Chapter 11 - Hydrology and Water Quality include a Surface Water Management Plan (SWMP). Substation drainage will utilise swales and a Sustainable Drainage System (SuDS) to ensure no increase in flow rates to local waterbodies. No wet cement batching will occur on site, and chute cleaning is restricted to washout ponds. During HDD, an inert, biodegradable drilling fluid will be used, and temporary spoil will be set back at least 20m from watercourses. A water quality monitoring programme will be established as outlined in Chapter 11, and the CLO as outlined in Chapter 6 will keep the local population informed.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to hydrology and water quality and its interactions with other environmental disciplines.</p>
<p><b>Material Assets</b></p> <p>Interacts with: Population and Human Health, Air Quality and Climate, Noise and Vibration, Soils, Geology and Hydrogeology, Hydrology and Water Quality.</p>	<p>Chapter 12 - Material Assets, Telecommunications, Traffic and Transport relates to Chapter 6 - Population and Human Health through journey delays and Chapter 8 - Noise and Vibration through HGV noise. Trenching into the road involves a direct effect on Chapter 10 - Soils, Geology and Hydrogeology (road foundations) and existing utilities (Water/Telecoms).</p> <p>Mitigation measures as outlined in Chapter 12 - Material Assets include a Road Opening Licence (ROL) and site-specific TMP. Pre-construction slit trenching will define the alignment to avoid existing utilities. Where trenching occurs near private wells or GWS, the CLO will ensure residents are informed as outlined in Chapter 6 - Population and Human Health. Road sweeping vehicles and steel plating will ensure access and cleanliness are maintained. All road surfaces will be reinstated to the original profile as per Department of Transport guidelines as outlined in Chapter 12.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to material assets and its interactions with other environmental disciplines.</p>



Interaction	Description
<p><b>Archaeology, Architectural and Cultural Heritage</b></p> <p>Interacts with: Soils, Geology and Hydrogeology.</p>	<p>Chapter 13 - Archaeology, Architectural and Cultural Heritage is tied to Chapter 10 - Soils, Geology and Hydrogeology as soil stripping creates the potential for the disturbance of archaeological remains. There is also a temporary visual connection with Chapter 14 - Landscape and Visual regarding the setting of heritage assets, such as Bride Bridge, during construction.</p> <p>Mitigation as outlined in Chapter 13 - Archaeology, Architectural and Cultural Heritage includes archaeological monitoring under a National Monuments Service licence for all greenfield excavations. As HDD was deemed unfeasible at Bride Bridge, cables will be placed within the bridge deck; archaeological monitoring of the road fill will be carried out to protect the historic masonry. Reinstatement of road surfaces will be conducted as outlined in Chapter 12 and Chapter 13 to protect the visual setting of heritage assets.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to archaeology and cultural heritage and its interactions with other environmental disciplines.</p>
<p><b>Landscape and Visual</b></p> <p>Interacts with: Population and Human Health.</p>	<p>Chapter 14 - Landscape and Visual interacts with Chapter 6 - Population and Human Health, as the visibility of construction plant and substation infrastructure affects the visual amenity for local residents. It also correlates with Chapter 9 - Biodiversity through the physical removal of forestry and hedgerows.</p> <p>Mitigation as outlined in Chapter 14 - Landscape and Visual notes that these effects are short-term and rolling. The substation is contained within a 115m x 145m compound and screened by a 2.6m high steel palisade fence. Upon completion, the undergrounding of the grid connection neutralises any long-term visual impacts on the landscape. The removal of the previously permitted Mullenaboree substation, as outlined in Chapter 14, results in a permanent positive landscape interaction.</p> <p>The Proposed Development is not expected to result in adverse significant effects on the environment during construction, operation and decommissioning with respect to landscape and visual and its interactions with other environmental disciplines.</p>

### 15.3 Conclusion

The Proposed Development has the potential to affect various environmental aspects as detailed throughout this EIAR. As outlined in this Chapter, there are interactions and inter-relationships between these aspects as described above. The EIAR has considered these interactions and inter-relationships throughout the assessment, firstly through the design and routing of cable routes, to avoid effects where possible and also in the definition of suitable mitigation measures to minimise potential effects. It is therefore considered that the potential significant effects associated with the interactions of environmental effects outlined in this chapter will be avoided due to the implementation of mitigation measures as detailed throughout this EIA.



# FEHILY TIMONEY

DESIGNING AND DELIVERING  
A SUSTAINABLE FUTURE

[www.fehilytimoney.ie](http://www.fehilytimoney.ie)

---

 **Cork**

 **Dublin**

 **Carlow**

