

17. INTERACTIONS OF THE FOREGOING

17.1 Introduction

The preceding Chapters 5 to 16 of this EIAR identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity (Flora and Fauna), Ornithology (Birds), Land, Soils and Geology, Water (Hydrology & Hydrogeology), Air Quality, Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage (Archaeological, Architectural and Cultural Heritage), Material Assets (Roads and Traffic, Telecommunications, Aviation, Utilities and Waste Management), and Vulnerability to/from Major Accidents and Natural Disasters as a result of the Proposed Development, as described in Chapter 4 (Description of the Proposed Development) of this EIAR. All of the potential significant effects of the Proposed Development and the measures proposed to mitigate them have been outlined in the preceding chapters of this EIAR. Mitigation measures and best practice measures for the construction, operation and decommissioning of the Proposed Development are detailed in the accompanying Construction and Environmental Management Plan (CEMP) (Appendix 4-3). 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.

As detailed in Section 1.1.1 in Chapter 1 (Introduction), for the purposes of this EIAR, the various project components are described and assessed using the following references: 'Proposed Development', 'proposed turbines', the 'Site', the '2020 Application' and the 'Kealkill Wind Farm'. Please see Section 1.1.1 of this EIAR for further details. A detailed description of the Proposed Development is provided in Chapter 4 (Description of the Proposed Development) of this EIAR.

A matrix is presented in Table 17-1 below to identify potential interactions between the various aspects of the environment already assessed in this EIAR. The matrix highlights the occurrence of potential positive or negative effects during both the construction (C) and operational (O) phases. It is considered that the potential effects during the decommissioning phase will be similar to the construction phase but of a lesser magnitude. The matrix is symmetric, with each environmental component addressed in the chapters of this EIAR being placed on both axes of a matrix, and therefore, each potential interaction is identified twice. In Section 17.2 below, the potential interactions between each environmental component have been discussed in order of the relevant chapters of the EIAR. Once a potential interaction between two environmental components has been discussed, for example, Population & Human Health and Water, the interaction will not be discussed again in the following relevant section, therefore there is no Water and Population & Human Health section.



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Table 17-1 Interaction Matrix Potential for Interacting Impacts

	Phase	Population and Human Health	Biodiversity	Birds	Land, Soils and Geology	Hydrology & Hydrogeology	Air Quality	Climate	Noise and Vibration	Cultural Heritage	Landscape and Visual	Material Assets	Vulnerability to Natural Disasters
Population and Human Health	C	Black	Light Blue	Light Blue	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	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Biodiversity	C	Light Blue	Black	Light Blue	Light Blue	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	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Birds	C	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
	O	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Land, Soils and Geology	C	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	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	Light Blue	Light Blue
Hydrology & Hydrogeology	C	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	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	Light Blue	Light Blue
Air Quality	C	Light Blue	Light Blue	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	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Climate	C	Light Blue	Light Blue	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	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
Noise and Vibration	C	Light Blue	Light Blue	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	Light Blue	Light Blue	Black	Light Blue	Light Blue	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	Light Blue	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue	Light Blue	Light Blue
Landscape and Visual	C	Light Blue	Light Blue	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	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	Light Blue	Black	Light Blue
	O	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue	Black	Light Blue
Vulnerability to Natural Disasters	C	Light Blue	Light Blue	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	Light Blue	Light Blue	Black

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Legend:	No Interacting Effect:		Positive Effect:	
	Neutral Effect:		Negative Effect:	

The potential for interaction of effects has been assessed, throughout this EIAR, as part of the Impact Assessment process. While the work on all parts of the Environmental Impact Assessment Report (EIAR) were not carried out by MKO, the entire project and all the work of the sub-consultants was managed and coordinated by the company. The EIAR was edited and collated by MKO as an integrated report of findings from the impact assessment process, by all relevant experts, and effects that potentially interact have been assessed in detail in the individual chapters of the EIAR and summarised in Section 17.2 below.

Where any potential negative effects have been identified during the assessment process, these impacts have been avoided or reduced by design and the proposed mitigations measures, as presented throughout the EIAR.

17.1.1 Statement of Authority

This section of the EIAR, has been prepared by Ciarán Fitzgerald, reviewed by Sean Creedon of MKO. Ciarán Fitzgerald is an Environmental Scientist who has been working with MKO since June 2024. Ciarán holds a B.Sc. (Honours) in Marine Science from the National University of Ireland Galway and a First-Class Honours PG. Dip in Geographic Information Systems from University College Cork. Ciarán works as part of the Environmental Renewables team as well as a larger multidisciplinary team. Ciarán’s role involves undertaking tasks such as report writing, EIAR chapter writing, and QGIS mapping. Prior to joining MKO, Ciarán spent time aboard the research vessel “Celtic Explorer,” working as part of a team undertaking chemical water data, pelagic species abundance and sorting, bathymetric GIS mapping, data collection, and report writing. Ciarán’s key strengths lie in GIS mapping and communication. Since joining the company, Ciarán has been involved in a range of projects, including onshore wind, offshore wind, and solar, contributing by reviewing EIAR chapters and assisting with project development. Ciarán holds a membership from the Institute of Sustainability and Environmental Professionals (ISEP).

17.2 Impact Interactions

17.2.1 Population and Human Health

Population and Human Health and Land, Soils & Geology

The use of plant machinery on site during excavation works and the movement of spoil may result in the potential for soil and ground contamination. A wind farm and associated grid infrastructure is not a recognised source of pollution and so the potential for effects during the operational phase are imperceptible. With the implementation of mitigation and monitoring measures detailed in Chapter 8 (Lands, Soils & Geology) and the CEMP (Appendix 4-3), the potential for residual effects associated with soil or ground contamination during the construction and operational phases and subsequent health effects are imperceptible.

On this basis, the identified interaction is not significant.

Population and Human Health, and Hydrology & Hydrogeology

Potential health effects arise mainly through the potential for surface and groundwater contamination which may have negative effects on public and private water supplies, see Section 15.10.2.2.3 of

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Chapter 5 (Population & Human Health). There are no underground water or sewerage networks in proximity to the proposed infrastructure locations. Lough Allua, which exists downstream of the Proposed Development is used as public water supply (PWS). The abstraction point is located at Inchigeelagh at the eastern (downstream) end of Lough Allua. Only the northern section of the Site (entrance and access road as well as the proposed turbine component turning area) drains into Lough Allua. None of the 3 no. proposed turbines or the proposed borrow pit are located in the catchment to Lough Allua. There are no mapped public or group water scheme groundwater protection zones in the area of the Proposed Development. According to GSI mapping, there are no private wells located in the vicinity of the Proposed Development. The Proposed Development design and mitigation measures detailed in Chapter 9 (Hydrology & Hydrogeology) and the CEMP (Appendix 4-2) ensures that the potential for effects on the water environment are not significant. A comprehensive suite of surface water mitigation measures and controls are outlined in Chapter 9 (Hydrology & Hydrogeology) to ensure protection of all downstream receiving waters. Mitigation measures will ensure that surface runoff from the developed areas of the Site will be of a high quality and will therefore not impact on the quality of downstream surface water bodies, no impact on group water schemes, wells and therefore, no subsequent health effects.

On this basis, the identified interaction is not significant.

Population and Human Health, and Air Quality

The excavation and movement of spoil during the construction phase of the Proposed Development is likely to create dust and CO₂ emissions which will result in a short-term, slight, negative effect on local air quality (once greenhouse gases are emitted into the atmosphere even temporarily, this is considered permanent). Mitigation measures to reduce dust and CO₂ emissions generated during the construction phase of the Proposed Development are presented in Chapter 10 (Air Quality).

During the operational phase, the Proposed Development will generate additional traffic to the area in the form of light goods vehicles (LGVs) visiting the Site 1-2 times per day for inspections and maintenance, giving rise to a long-term imperceptible negative impact on air quality. However, wind turbines are not a recognised source of pollution, and will instead be providing clean energy into the National Grid. This will have a long-term positive effect on human health.

By providing an alternative to electricity derived from coal, oil or gas-fired power stations during the operational phase, the Proposed Development will result in emission savings of carbon dioxide (CO₂), oxides of nitrogen (NO_x), and sulphur dioxide (SO₂). The production of renewable energy from the Proposed Development will have a long-term, moderate, positive impact on air quality.

On this basis, the identified interaction is not significant.

Population and Human Health, and Climate

The construction of the Proposed Development will have a long-term, imperceptible, negative effect on climate, and therefore human health, and will be restricted to the duration of the construction phase.

The Proposed Development when in operation, will reduce the input of carbon intensive energy into the national grid and reduce the amount of greenhouse gas (GHG) emissions being released to the atmosphere that are associated with electricity generation and use. Harnessing more energy by means of renewable sources will reduce dependency on fossil fuels, thereby resulting in a reduction in harmful emissions that can be damaging to human health and the environment. The rated output of 4.8MW per turbine for the Proposed Development would result in an estimated installed capacity of 14.4MW, displacing approximately 9,535 tonnes of carbon dioxide per annum or 333,725 tonnes over its operational life from traditional carbon-based electricity generation. This will have a long-term positive effect on climate and therefore a long-term positive effect on health.

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On this basis, there identified interaction is not significant.

Population and Human Health, and Noise and Vibration

As identified in Chapter 5 (Population & Human Health) of this EIAR, the construction phase will generate an increase in noise levels in the vicinity of the Site which has the potential to cause a nuisance to sensitive receptors in the area. The contractor undertaking the construction of the works will be obliged to take specific noise abatement measures and comply with the recommendations of British Standard BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Noise* and all mitigation measures, as detail in Chapter 12 (Noise & Vibration) and the CEMP, will be implemented. The construction phase will likely create a short-term, negative effect on human health due to the nuisance caused by construction plant and vehicle noise emissions.

As detailed in Chapter 12 (Noise & Vibration), the predicted noise emissions during the operational phase, once the appropriate mitigation measures are implemented, will not be significant. Furthermore, as noise emissions from turbines are controllable via inbuilt technologies, the Proposed Development will be able to comply with the Guidelines (DoEHLG, 2006) and future iterations should they come into effect before a decision is made on this application. Likewise, the proposed turbines will be capable of achieving compliance with noise conditions imposed should the Proposed Development receive a grant of planning permission.

On this basis, the identified interaction is not significant.

Population and Human Health, and Landscape and Visual

The construction phase of the Proposed Development will see the temporary introduction of construction machinery and the erection of wind turbines into a natural, but already modified landscape. The erection of the turbines in particular will change the existing landscape. Whether the long-term change in landscape created by the erection of the turbines is deemed to be positive or negative is a subjective matter. What appears to be a positive visual effect to one viewer could be deemed to be a negative effect by another viewer.

Chapter 13 (Landscape & Visual) of this EIAR comprises the landscape and visual impact assessment of the Proposed Development. As detailed in Chapter 13 (Landscape & Visual), during the operational phase there are no significant landscape or visual effects on sensitive receptors predicted as a result of the Proposed Development. The Proposed Development adheres to the recommended minimum 500m set back distance in the Guidelines (DoEHLG, 2006) and also the 4 times tip height set-back distance for third party sensitive receptors set out the draft Guidelines (DoHPLG, 2019) specifically for visual amenity purposes.

On this basis, the identified interaction is not significant.

Population, and Human Health, and Material Assets

During the Construction phase, the Proposed Development will give rise to traffic movements of abnormal loads and increased traffic volumes on the local road network and, therefore, is likely to create some short-term inconvenience for other road users as well as dust and exhaust emissions. A Traffic Management Plan will be implemented prior to construction to minimise all disruption, as described in Chapter 15 (Material Assets) and the CEMP (Appendix 4-3).

During the operational phase, impacts on the surrounding local highway network will be imperceptible. With the implementation of measures detailed in Chapter 5: Population & Human Health and the CEMP (Appendix 4-3) dust and exhaust emission will be contained and the potential for impact on health will be imperceptible.

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During the operational phase, there will be an imperceptible effect on utilities, telecoms, and aviation. However, the Proposed Development has the potential to supply 14.4MW of electricity to the national grid during the operational phase, offsetting the use of fossil fuels within the electricity generating sector. This has a long-term slight positive effect on national electricity supply and the offsetting of fossil fuel consumption, thereby resulting in a reduction in harmful emissions that can be damaging to human health.

On this basis, the identified interaction is not significant.

17.2.2 Biodiversity

Biodiversity and Land, Soils & Geology

The removal of forestry, hedgerow and soil during the construction phase of the Proposed Development is likely to result in some disturbance of flora and fauna in and adjacent to the Proposed Development footprint thereby, potentially causing a long term, slight, negative effect on flora and fauna. These potential impacts have been assessed in Chapter 6 (Biodiversity) of this EIAR and excavated spoil will be contained on site in the spoil management areas or used for landscaping.

It is also proposed to establish 2 ha of heath habitat within the Site, as well as plant approximately 0.7ha of riparian woodland (700m of linear habitat) on either side of a section of the Lackavane river in the southwestern corner of the Site. The establishment of both heath and riparian woodland within the Site will result in a positive, slight, direct, permanent likely effect. Please see Chapter 6 (Biodiversity) and Appendix 6-5 Biodiversity Enhancement Management Plan (BEMP) for details.

On this basis, the identified interaction is not significant.

Biodiversity and Hydrology & Hydrogeology

Site activities during the construction phase of the Proposed Development may have the potential to give rise to 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. These potential impacts have been assessed in Chapter 6 (Biodiversity) and Chapter 9 (Hydrology & Hydrogeology) and the relevant mitigation measures outlined in these chapters and the CEMP (Appendix 4-3) will be in place to avoid any water pollution and subsequent effect on flora and fauna.

As part of the Proposed Development, it is proposed to establish approximately 350m of riparian woodland on either side of a section of the Lackavane river in the southwestern corner of the Site. This planting will establish and develop during the operational phase and will have a slight long-term positive effect on water quality, aquatic fauna and aquatic habitats.

On this basis, the identified interaction is not significant. 06 NOV 2025

Biodiversity and Air Quality

During the construction phase of the Proposed Development, increased vehicular and dust emissions within and around the Site have the potential to be a nuisance to flora and fauna, thereby having a temporary, slight, negative effect. The mitigation measures outlined in Chapter 10 (Air Quality) of the EIAR will ensure that the potential for negative effects is reduced or eliminated.

During the operational phase, the potential for effects on biodiversity from vehicular and dust emissions are imperceptible, however the overall displacement of fossil fuel emissions will have a long-term moderate positive effect on air quality for biodiversity.

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On this basis, the identified interaction is not significant.

Biodiversity and Climate

The construction of the Proposed Development will result in greenhouse gas emissions associated with tree felling, production of construction materials, and operation of vehicles and plant. The impact on biodiversity will be negative and slight only given the quantity of greenhouse gases that will be emitted to the atmosphere and will be restricted to the duration of the construction phase. As discussed above in section 17.2.1, once emitted to the atmosphere, the greenhouse gas emissions that will arise from construction phase activities will have a permanent imperceptible, negative effect on the climate and therefore biodiversity. This is assessed further in Chapter 11 (Climate) of this EIAR, and mitigation measures are presented to minimise any potential effects.

The construction of the Proposed Development will involve the removal of carbon fixing vegetation and habitat, however, as detailed in BMEP (Appendix 6-5), it is also proposed to establish approximately 2 ha of heath habitat within the Site, as well as plant approximately 350m of riparian woodland on either side of a section of the Lackavane river in the southwestern corner of the Site.

During operational phase, the Proposed Development 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 a reduction in air pollution, consequently, could in combination with other renewable energy projects, have a long term, moderate positive effect on flora and fauna.

On this basis, the identified interaction is not significant.

Biodiversity and Noise & Vibration

Site activity during the construction phase could give rise to noise that could be a nuisance for fauna, which use the Site. Best practice mitigation measures are included in Chapter 6 (Biodiversity) and Chapter 12 (Noise & Vibration) and the CEMP (Appendix 4-3) to minimise the potential negative effect of noise generated during the construction phase on biodiversity.

On this basis, the identified interaction is not significant.

17.2.3

Birds

Birds and Land, Soils & Geology

The removal of hedgerows and soil, during construction phase of the Proposed Development is likely to result in some disturbance of flora and fauna, including birds, in the areas surrounding the Proposed Development works area. During the construction and operational phase, there will be a short-term to long-term, imperceptible to slight, negative effect on birds. The relevant mitigation measures outlined in Chapter 7 (Birds), Chapter 8 (Lands, Soils & Geology) and the CEMP (Appendix 4-3) will be in place to avoid any potential significant effect on birds.

On this basis, the identified interaction is not significant.

Birds and Hydrology & Hydrogeology

Site activities during the construction phase of the Proposed Development may have the potential to give rise to some water pollution, and consequential short term indirect effects on birds and their prey species (such as disturbance and deterioration of habitat quality) that use that water within the same catchment. With the implementation of mitigation and monitoring measures outlined in Chapter 7

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(Birds), Chapter 9 (Hydrology & Hydrogeology) and the CEMP (Appendix 4-3), the effects during the construction phase from site activities will be not significant.

On this basis, the identified interaction is not significant.

Birds and Air Quality

During the construction phase of the Proposed Development, increased vehicular and dust emissions within and around the Site have the potential to be a nuisance for birds. The mitigation measures outlined in Chapter 10 (Air Quality) and the CEMP (Appendix 4-3) will ensure that the potential for negative effects is reduced or eliminated.

During the operational phase, the potential for effects on birds, from vehicular and dust emissions are imperceptible, however the overall displacement of fossil fuel emissions will have a long-term moderate positive effect on air quality for birds.

On this basis, the identified interaction is not significant.

Birds and Climate

The construction of the Proposed Development will result in greenhouse gas emissions associated with tree felling, production of construction materials, and operation of vehicles and plant. This impact on birds' ranges from a negative, slight to imperceptible effect, given the quantity of greenhouse gases that will be emitted to the atmosphere, and will be restricted to the duration of the construction phase. As discussed above in section 17.2.1, once emitted to the atmosphere, the greenhouse gas emissions that will arise from construction phase activities will have a permanent imperceptible negative effect on Climate.

During the operational phase, the Proposed Development 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.

On this basis, the identified interaction is not significant.

Birds and Noise & Vibration

Site activity during the construction phase could give rise to noise that could be a nuisance for birds, which use the Site. Best practice mitigation measures are included in Chapter 7 (Birds) and Chapter 12 (Noise & Vibration) and the CEMP (Appendix 4-3) to minimise the potential negative effect of noise generated during the construction phase.

On this basis, the identified interaction is not significant.

17.2.4 Land, Soils and Geology

Land, Soils & Geology, and Hydrology and Hydrogeology

As identified in Chapter 8 (Lands, Soils & Geology) of this EIAR, the movement and removal of spoil during the construction phase has the potential to have a significant, negative effect on water quality through potentially silt-laden runoff from the Proposed Development works areas. Mitigation measures to ensure there are not significant, negative effects on water quality are presented in Chapter 8 (Lands, Soils & Geology), Chapter 9 (Hydrology & Hydrogeology), and the CEMP (Appendix 4-3).

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On this basis, the identified interaction is not significant.

Land, Soils & Geology and Air Quality

The excavation works and transportation of vehicles to/from and around the Site will give rise to dust, which is considered a short-term, slight, negative impact on air quality. Mitigation measures outlined in Chapter 10 (Air Quality) will reduce the potential for negative effects on land, soils, and geology, including dust suppression measures which is further outlined in the CEMP (Appendix 4-3).

On this basis, the identified interaction is not significant.

Land, Soils & Geology and Climate

The construction of the Proposed Development will result in greenhouse gas emissions associated with production of construction materials and operation of vehicles and plant. This effect will be short-term, negative and slight only, given the quantity of greenhouse gases that will be emitted to the atmosphere, and will be restricted to the duration of the construction phase. As discussed above in Section 17.2.1, once emitted to the atmosphere, the greenhouse gas emissions that will arise from construction phase activities will have a permanent imperceptible negative effect on Climate.

Land, Soils & Geology and Landscape & Visual

The removal of spoil and the subsequent replacement with crushed stone for the construction of the site roads and hardstanding areas within the Site has the potential to alter the local landscape. The visual effect of this change is expected to be temporary, localised in nature and slight.

On this basis, the identified interaction is not significant.

Land, Soils & Geology and Cultural Heritage

The removal of spoil during the construction phase is likely to have a permanent, significant, negative effect on any previously unrecorded sub-surface archaeological site and/or artefacts. No recorded monuments, protected structures or NIAH structures are located within the Proposed Development. A hut site was recorded within the Proposed Development boundary, albeit poorly preserved and in clear-felled forestry. The hut site is situated just 35m from the existing road (utilised as part of the Kealkill Wind Farm). A 30m buffer zone has been imposed on this hut site. The construction of the sections of proposed new roads will not have any direct or significant effects on the hut site. Any archaeological sites/features, if detected, during archaeological monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential effect after the implementation of the mitigation measures is likely to be not significant. Mitigation measures outlined in Chapter 14 (Archaeological, Architectural & Cultural Heritage) will reduce the potential for negative effects on unrecorded sites and artefacts during excavations.

On this basis, the identified interaction is not significant.

17.2.5 Air Quality

Air Quality and Material Assets

The transportation of vehicles to/from and around the Site will give rise to dust emissions which is considered a short-term, slight, negative impact on air quality. Following implementation of mitigation measures as outlined in Chapter 10 (Air Quality), Chapter 15 (Material Assets) and the CEMP

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(Appendix 4-3) there will be a short-term, imperceptible, negative effect on air quality due to transportation movements. Dust and exhaust emissions generated through the transportation of vehicles to/from and around the Site during the operational phase (1-2 LGVs per day) are imperceptible.

On this basis, the identified interaction is not significant.

17.2.6 Climate

Climate and Material Assets

The construction of the Proposed Development will result in greenhouse gas emissions, e.g., carbon dioxide (CO₂), carbon monoxide and nitrogen oxides, associated with tree felling, production of construction materials, and operation of vehicles and plant. This negative impact will be permanent and imperceptible, given the quantity of greenhouse gases that will be emitted to the atmosphere and will be restricted to the duration of the construction phase. This is assessed further in Chapter 11 (Climate) of this EIAR, and mitigation measures are presented to minimise any potential effects.

During the operational phase, the Proposed Development will displace carbon dioxide from fossil fuel-based electricity generation, over the proposed 35-year lifespan of the Proposed Development. Therefore, while there will be greenhouse gas emissions associated with the operation of the Proposed Development, this will be offset by the operation of the Proposed Development which will offset 9,535 tonnes of carbon dioxide per annum or 333,725 tonnes over its operational life from traditional carbon-based electricity generation. Subsequently, this will cause a long-term moderate positive effect on Climate as a result of reduced greenhouse gas emissions.

On this basis, the identified interaction is not significant.

17.2.7 Landscape and Visual

Landscape & Visual and Cultural Heritage

As described in Chapter 14 (Landscape & Visual) of this EIAR, the Proposed Development has the potential to change the landscape setting of recorded sites and monuments in the wider area. However, it is concluded in Chapter 14 (Landscape & Visual) that any potential, indirect, visual effect of the Proposed Development on sites and monuments range from imperceptible to moderate. In reality the effect will be less severe due to natural screening, boundaries, buildings and vegetation, which will alleviate if not remove the impact on setting altogether. Furthermore, some monuments may not be readily visible in the landscape which further ameliorates potential effects on setting. Additionally, many of these monuments are located on private land which are not formally accessible to the public.

On this basis, the identified interaction is not significant.

17.2.8 Vulnerability to Natural Disasters

As described in Chapter 16 (Major Accidents and Natural Disasters), major accidents or natural disasters are hazards which have the potential to affect the Proposed Development and lead to environmental effects both directly and indirectly. These include accidents during construction, operation and decommissioning of the Proposed Development caused by operational failure and/or natural hazards. The assessment of the potential for significant accidents or disasters is conducted in connection with the information that must be included in the EIAR. This includes aspects such as population and human health, biodiversity, land and soil, hydrology and hydrogeology, air quality, climate, material assets, cultural heritage, and the landscape. The risk of a major accident and/or disaster during the construction of the Proposed Development is considered 'low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010).

When the above mitigation is implemented, and all mitigation detailed in the EIAR is implemented, the residual effect(s) associated with the construction, operation and decommissioning of the Proposed Development are not significant.

17.3

Mitigation and Residual Impacts

No potential interactive negative effects have been identified in the above, as a full suite of appropriate mitigation measures has already been included in the relevant sections (Chapters 5 – 16) of the EIAR and are detailed in the CEMP (Appendix 4-3). The implementation of these mitigation measures will reduce or remove the potential for there to be effects. Information on potential residual impacts and the significant of effects, is also presented in each relevant chapter. On this basis the effects arising from the identified interactions are not significant.

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