

Environmental Impact Assessment Report (EIAR)

Proposed Slievegrine
Renewable Energy
Development, Co.
Waterford

Chapter 17 - Interaction of the
Foregoing



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, Hydrology & Hydrogeology (Water), 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 Project (as described in Chapter 4: '*Description of the Proposed Project*' of this EIAR). All of the potential significant effects of the Proposed Project and the measures proposed to mitigate these 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 Project are detailed in the accompanying Construction and Environmental Management Plan (CEMP) (Appendix 4-3), and Chapter 18: '*Schedule of Mitigation and Monitoring Measures*'. 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 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 in most cases the potential effects during the decommissioning phase will be similar to the construction phase but of a lesser magnitude and duration due to the considerably reduced scope of works associated with the decommissioning phase. 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 Hydrology and Hydrogeology, the interaction will not be discussed again in the following relevant section, therefore there is no Hydrology and Hydrogeology and Population & Human Health section.

Table 17-1 Interaction Matrix: Potential for Interacting Impacts

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

Major Accidents and Vulnerability to Natural Disasters	C													
	O													

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 drafted by Michéal Cahill, supported by Sophie O'Rourke and reviewed by Eoin McCarthy, all of MKO.

Michéal Cahill is an Environmental Scientist with MKO with over 2 years of experience in environmental consulting. Michéal holds a first-class honours degree in Environmental Science at University of Galway and was awarded the Professor Emer Colleran Medal for his academic achievements. Prior to taking up his position with MKO in June 2024, Michéal previously worked as an environmental sustainability intern with RPS Group. Michéal has previous experience in the preparation and review of Environmental Impact Assessment Reports for both offshore and onshore wind farm projects, as well as aiding in the research and design phase of a proposed pumped hydroelectric storage plant. Michéal's key strengths and areas of expertise are in environmental impact assessment, the preparation and writing of high-quality reports, proficiency in geographic information systems and ecology. As an environmental scientist within MKO's environmental renewables team, Michéal is involved in the preparation and revision of a variety of reports for a range of energy infrastructure projects.

Sophie O'Rourke is an Environmental Scientist with MKO. Sophie holds a BA in History and Political Science and a first class honours MSc in Environmental Science from the Trinity College Dublin. Sophie has excellent report writing and research skills. She is experienced in qualitative and quantitative data analysis. Sophie's key strengths and areas of expertise includes report writing and Geographical Information Systems. Within MKO, Sophie works as part of a large multi-disciplinary team to produce EIA Reports on the Environmental Renewables team. Sophie has been involved in a number of projects since starting in MKO.

Eoin is a Project Director with McCarthy O'Sullivan Ltd. with over 15 years of environmental consultancy experience. Eoin holds B.Sc. (Hons) in Environmental Science from NUI, Galway. Eoin's key strengths and areas of expertise are in project management, environmental impact assessment, wind energy site selection and feasibility assessment. Since joining MKO in 2011, Eoin has been involved as a Graduate, Assistant and Project Environmental Scientist on a significant range of energy infrastructure, tourism, waste permit, flood relief scheme and quarrying projects. He has overseen some

of the largest SID wind energy projects in Ireland in that time. In his role as project manager, Eoin works with and co-ordinates large multidisciplinary teams including members from MKO's Environmental, Planning, Ecological and Ornithological departments as well as sub-contractors from various fields in the preparation and production of EIARs. Eoin is also involved in the development of project strategy for the projects that he manages. He has held the role of project manager on over 550MW worth of wind energy projects. Within MKO Eoin plays a large role in the management of and sharing of knowledge with junior members of staff and works as part of a large multi-disciplinary team to produce EIA Reports.

17.2

Impact Interactions

17.2.1

Population and Human Health

Population and Human Health and Land, Soils & Geology

Construction Phase

During the construction phase there may be slight interference with agricultural practices and forestry related activities within the Site. Due to the small permanent built infrastructure footprint of the Proposed Project (33.17 ha) consisting of only 2.29% of the Site, the residual effect is considered to be a Short-term, Slight, Direct, and Negative effect on land use and activities during the construction phase.

The greatest potential for effects on land, soils, and geology to have impacts on population and human health will occur during the approximately 18-24 month construction phase. Construction activities will involve land occupation, site clearance, earthworks, excavation, and the handling, storage, and reuse of topsoil, subsoil, bedrock, and other excavated materials. This has the potential to cause significant contamination of land, soils, subsoil or bedrock arising from accidental spills, leaks or other releases which can cause adverse effects to human health.

With the implementation of the proposed mitigation measures as detailed in Section 8.5.2 of Chapter 8: '*Lands, Soils & Geology*' and the CEMP (Appendix 4-3 of this EIAR), the likelihood of significant contamination of land, soils, subsoil or bedrock arising from accidental spills, leaks or other releases is considered to be very low. Any accidental releases would be contained and remediated. The residual interactive effect between human health and land soils and geology is therefore assessed as being Temporary, Imperceptible, Direct, Negative, and Unlikely.

Operation Phase

With the implementation of mitigation and monitoring measures detailed in Section 8.6.3 of Chapter 8: '*Lands, Soils & Geology*' and the CEMP (Appendix 4-3), the potential for residual interactive effects associated with soil or ground contamination and subsequent health effects during the operational phases are Long-term, Imperceptible, Indirect, Negative, and Unlikely.

Decommissioning Phase

During the decommissioning phase, potential interactions between Land, Soils & Geology and Population and Human Health will principally arise from localised ground disturbance, excavation, plant movement, temporary storage of dismantled components and excavated materials, and the potential for accidental spills or leaks of fuels, oils or hydraulic fluids. Decommissioning works will include the removal of above-ground turbine and mast components and the removal of the 33kV electrical cabling. Proposed Turbine and mast foundations and cable ducting will remain in situ, thereby avoiding more extensive excavation and associated disturbance.

The mitigation measures identified for the construction phase in Section 8.5.2 of Chapter 8: '*Land, Soils & Geology*' will also be implemented during decommissioning, where relevant. These measures include limiting ground disturbance to the minimum area required, using existing access roads and hardstanding areas, appropriately managing excavated soils, reinstating temporarily disturbed areas, and implementing measures for the prevention and management of accidental spills and leaks.

Following implementation of these measures, the residual interactive effect between Land, Soils and Geology and Population and Human Health is considered to be Brief to Temporary, Imperceptible, Direct, Negative and Unlikely.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not considered significant.

Population and Human Health, and Hydrology and Hydrogeology

Construction Phase

The greatest potential for effects on hydrology and hydrogeology to have impacts on population and human health will occur during the approximately 18-24 months construction phase, as described in Chapter 4. As described in Chapter 4, clear-felling is part of preparatory groundworks for the Proposed Wind Farm. A total of 69.27 ha of coniferous trees will be felled to accommodate the Proposed Project. The related activity can release sediments, organic matter (including dissolved organic carbon) and nutrients into drains which can be a source of contamination and result in adverse effects on human health.

Hydrological receptors that may be impacted by construction works include nearby tributary watercourses, the Licky, Goish and Brickey Rivers, and associated downgradient receptors (SACs, SPAs, pNHAs). There are also several groundwater wells at farms and sensitive receptors within the Site which are used for private and farm water supplies. Livestock also drink surface water by accessing watercourses at multiple locations throughout the Site. There are no surface water or groundwater abstractions used for public water supply purposes within or downslope/downgradient of the Site. The nearest source of public water supply is the Dungarvan public water supply, which is several kilometres away and outside any sub catchments that are linked with the Site. Without mitigation, the potential effects on the above receptors and subsequent effects on human health will be Temporary, Moderate, both Direct and Indirect, Negative, and Likely.

The Proposed Project design and mitigation measures detailed in Chapter 9: '*Hydrology and Hydrogeology*' and the CEMP (Appendix 4-3) 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 Section 9.4.3 Chapter 9: '*Hydrology and 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, downgradient receptors, wells, or surface water accessed by livestock.

The residual interactive effect between human health and hydrology and hydrogeology is therefore assessed as being Temporary, Imperceptible, Indirect, Negative and Unlikely.

Operation Phase

During the operational phase, all Permanent drainage controls will be in place and the disturbance of ground and excavation works will be complete. Only minor maintenance works may be completed and would be very infrequent. It is not envisaged that any significant refuelling works will be undertaken on site during the operational phase. There will be a Temporary, Imperceptible, Indirect, and Negative and Unlikely effect on human health due to water quality.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is considered to be not significant.

Population and Human Health, and Air Quality

Construction Phase

The greatest potential for effects on Air Quality to have impacts on population and human health will occur during the approximately 18-24 months construction phase, as described in Chapter 4. The excavation and movement of spoil during the construction of the Proposed Wind Farm and Proposed Grid Connection, as well as the transport of construction materials and staff, will also give rise to some localised dust emissions, especially during periods of dry weather.

As discussed in Chapter 10: '*Air Quality*', the IAQM 2024 Guidance is used to assess the potential risk to high sensitivity receptors from dust deposition. Dust deposition impacts can occur for a distance of 250m from works areas, but the majority of deposition occurs within the first 50m (IAQM, 2024). The effect on air quality is therefore likely to have a subsequent impact on human health for nearby residents. Sensitive receptors within 50m of areas where there are likely to be localised dust emissions have been identified;

- Within 50m of the permanent built infrastructure footprint of the Proposed Wind Farm there are 2 no. sensitive receptors.
- Within 50m of the Proposed Grid Connection permanent built infrastructure footprint there are 21 no. sensitive receptors.
- Within 50m of the identified combined 15.26km stretches of the local road network there are 31 no. sensitive receptors.

In total there are 44 no. sensitive receptors that are located in an area likely recipients of dust deposition. The overall sensitivity of the area to dust soiling impacts is considered to be 'Medium'. Mitigation measures to reduce dust and exhaust emissions generated during the construction phase of the Proposed Project are presented in Chapter 10: '*Air Quality*'. With the implementation of the above, the Proposed Project is considered to have a Short-term, Slight, Negative, Indirect residual interaction effect on air quality and human health brought about by dust emissions generated during the construction activities.

Operational Phase

During the operational phase, the Proposed Project 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, Indirect 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.

By providing an alternative to electricity derived from coal, oil or gas-fired power stations during the operational phase, the Proposed Project 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 Project will have a Long-term, Moderate, Positive, Indirect impact on air quality.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Population and Human Health, and Climate

Construction Phase

The construction of the Proposed Project will result in the emission of greenhouse gases arising from construction phase activities. 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 and therefore population and human health.

Operational Phase

The Proposed Project when in operation, will reduce the input of carbon intensive energy into the national grid and reduce the amount of greenhouse gas emissions being released to the atmosphere. 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 Proposed Project will displace, 79,376 tonnes of carbon dioxide per annum (2,778,160 tonnes over the 35-year operational life) from the largely carbon-based traditional energy mix, the detail of which is presented in Section 11.4. The 445,183 MWh of electricity produced by the Proposed Wind Farm would be sufficient to supply approximately 106,000 Irish households with electricity per year. Therefore, the Proposed Project is considered to have a Long-term Moderate Positive residual interaction effect on air quality and human health.

Decommissioning Phase

The decommissioning of the Proposed Project will result in the emission of the greenhouse gas emissions that arising from decommissioning phase activities such as the operation of plant and machinery, transport movements associated with the removal of turbine and mast components from the Site, and the handling and transport of materials for recycling or recovery. As the extent of excavation and construction activity required during decommissioning will be substantially less than during the construction phase and of a shorter duration, the associated greenhouse gas emissions will also be lower. The mitigation measures prescribed for the construction phase of Chapter 11: '*Climate*' will be implemented during decommissioning, where relevant, to minimise greenhouse gas emissions from plant, vehicles and material handling.

In the context of Population and Human Health, the scale of greenhouse gas emissions associated with decommissioning is not considered sufficient to result in a significant adverse effect on human health.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Population and Human Health and Noise and Vibration

Construction Phase

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 detailed in Chapter 12: ‘*Noise & Vibration*’ and the CEMP, will be implemented. The construction phase will likely create a Short-term, Slight to Moderate Direct, Negative residual interaction effect between noise and vibration and human health due to the nuisance caused by construction plant and vehicle noise emissions.

Operational Phase

As detailed in Chapter 12: ‘*Noise & Vibration*’, the predicted noise emissions and subsequent effect on human health during the operational phase, once the appropriate mitigation measures are implemented, will be Long-term Negative, Not Significant and Direct. Furthermore, as noise emissions from turbines are controllable via inbuilt technologies, the Proposed Project 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 Project receive a grant of planning permission. The operational phase will likely create a Long-term Imperceptible Negative residual interaction effect between noise and vibration and human health due to the predicted noise emissions caused by turbines.

Decommissioning Phase

During the decommissioning phase, noise and vibration emissions will arise from site traffic, the operation of plant and machinery and the dismantling and removal of above-ground infrastructure. Similar types of plant and equipment to those used during construction may be required and, consequently, similar noise levels may occur locally while individual decommissioning activities are taking place. These activities have the potential to cause temporary nuisance or disturbance to nearby sensitive receptors. However, the overall extent of decommissioning works will be less than during the construction phase in both extent and duration.

Chapter 12 therefore assesses the residual noise and vibration effect during decommissioning as Short-term, not significant and Negative. Consequently, while decommissioning activities may result in a temporary increase in noise experienced by nearby residents, the associated interaction between noise and vibration and population and human health will not result in a significant effect.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Population and Human Health, and Landscape and Visual

Construction Phase

The construction phase of the Proposed Project 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 proposed turbines in particular will change the existing landscape. The construction activities may potentially cause temporary impacts on the landscape such as the creation of temporary structures, dust, soil erosion and alterations to drainage. It is considered that the construction phase will have a Direct, Short-term, Negative effect in terms of direct landscape effects.

Preference in visual aesthetics is highly subjective, what may be deemed as a Positive landscape change to one person may be considered as highly negative by another person. In the context of the EIAR, we will consider the worst case scenario and assume that the residual interaction effect between landscape and visual and human health will likely create a Direct, Short term, Imperceptible, Negative effect.

Operational Phase

As detailed in Chapter 13: *'Landscape and Visual'*, the landscape character of the Proposed Wind Farm site will undergo substantial change through the introduction of the Proposed Turbines as tall, vertical man-made structures, together with turbine hardstands, access roads and other ancillary infrastructure. As outlined in Section 13.7.3.1 of Chapter 13, these changes will result in Long-term landscape effects of 'Moderate' significance upon the physical fabric of the Proposed Wind Farm site. These direct landscape effects will be highly localised to the footprint of the Proposed Project within the Proposed Wind Farm site. Effects on the perceptual and aesthetic character of the Proposed Wind Farm site are also assessed as Long-Term, Moderate, Direct and Negative, which is not significant in the context of EIA.

Within the LVIA Study Area, the visual impact on residential receptors ranges from Imperceptible to Significant (for a small number of residences in very close proximity). Given the adherence to the 4x tip height set-back distance to protect visual amenity, on balance, effects on residential receptors are mitigated and are therefore not significant.

Decommissioning Phase

Turbine foundations and hardstand areas would remain in place underground and would be covered with earth and reseeded as appropriate. This naturalisation process would return the landscape of the Proposed Wind Farm site to a condition broadly similar to the current landscape baseline. The Proposed Turbines and ancillary infrastructure would be removed during decommissioning, with the exception of the Proposed 110kV Substation, Proposed 220kV Loop-in Substation and associated grid infrastructure, which would remain in place as Permanent elements of the national electricity grid. The removal of the Proposed Turbines and ancillary infrastructure during decommissioning is predicted to result in Direct, Short-Term and Negative visual effects of Slight significance, which are not significant in the context of EIA. While 'Significant' visual effects are identified at a small number of representative viewpoint locations and for certain local residential receptors during the Operational Phase, these effects are highly localised and would be experienced by a low number of receptors. Overall, visual effects on designated scenic routes and protected views are predicted to range from Imperceptible to Moderate and are Not Significant in the context of EIA.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Population, and Human Health and Material Assets

Construction Phase

During the construction phase, the Proposed Project will give rise to traffic movements of abnormal loads and increased traffic volumes on the local road network and, therefore, will have the potential to inconvenience road users. Dust and exhaust emissions associated with traffic movements will also have the potential to affect road users. A Traffic Management Plan is included as Appendix 15-3 and will be updated and agreed with the county council prior to construction to minimise all disruption, as described in Chapter 15: *'Material Assets'* and the CEMP (Appendix 4-3). It is considered that the construction phase will have a Short-Term, Slight to Moderate Negative Direct residual interactive effect between Material Assets and Population and Human Health as a result of traffic movements, dust and exhaust emissions.

Operational Phase

During the operational phase, impacts on the surrounding local highway network will be a Long term, Negative, Imperceptible, impact. With the implementation of measures detailed in Chapter 5 and the CEMP (Appendix 4-3) dust and exhaust emissions will be contained and the potential for impact on health will be Long Term, Imperceptible, Direct, Negative and Unlikely.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, such as the effect on traffic in the local road network and dust and exhaust emissions, however to a lesser extent and lesser duration.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.2 Biodiversity

Biodiversity, and Ornithology

Construction Phase

Site activities during the construction phase of the Proposed Project have the potential to interact with ornithological receptors through the loss, fragmentation and disturbance of habitats that provide nesting, roosting and foraging opportunities for birds and support their prey species. Potential impacts on Key Ornithological Receptors (KORs), including direct habitat loss and disturbance/displacement, are assessed in Section 7.5 of Chapter 7: '*Ornithology*'.

Following implementation of mitigation, no potential for residual interactive effect exists at any geographic scale between biodiversity and ornithology during the construction phase. The planting of additional linear habitats as outlined above will result in a net gain of linear habitats within the Proposed Project site, however the likely benefits of such on biodiversity including birds will not be of much merit until the operational phase of the Proposed Project. Therefore the residual interactive effect between biodiversity and ornithology during the construction phase is considered to be Long Term, Slight, Direct, Negative and Likely.

Operational Phase

During the operational phase, there will be no additional land take or habitat loss associated with the operation of the Proposed Project. The Biodiversity Management and Enhancement Plan (BMEP), included as Appendix 6-4, provides for habitat creation and enhancement measures including approximately 5.5 km of hedgerow planting and approximately 3.6 ha of native woodland creation. These measures will strengthen habitat connectivity within the Site and increase the availability and quality of habitats capable of supporting birds and their prey species as the planting becomes established.

The establishment and Long-term management of these habitats will therefore result in a Positive interaction between Biodiversity and Ornithology through improved ecological connectivity and increased nesting, sheltering and foraging opportunities. The residual interaction effect between Biodiversity and Ornithology during the operational phase is therefore considered to be Long term, Slight, Direct and Positive in the context of EIA.

Decommissioning Phase

No further habitat loss will occur during the Decommissioning Phase, however there will be a temporary disturbance of habitats associated with plant, vehicle movements, noise and human activity. However, these effects will occur over a more limited extent and duration. Habitat enhancement measures established under the BMEP will remain in place and will continue to provide ecological and ornithological benefits.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Biodiversity and Land, Soils & Geology

Construction Phase

The felling of 69.27 ha conifer forestry and the excavation spoil during the construction phase of the Proposed Project is likely to result in the disturbance of flora and fauna in and adjacent to the Proposed Project footprint thereby, potentially causing a Long term, Slight, Direct, Negative effect on flora and fauna.

As outlined in Section 6.2.2.1.1 of Chapter 6: '*Biodiversity*' consultation with the National Parks and Wildlife Services identified the importance of considering sediment and nutrient loss pathways across the Site, particularly in areas where flow paths may increase susceptibility to sediment mobilisation. This informed the identification of appropriate construction mitigation and the consideration of suitable locations for spoil management. Measures for the management of excavated material, erosion and sediment are detailed in Chapter 8: '*Land, Soils and Geology*' and the CEMP (Appendix 4-3).

The BMEP included as Appendix 6-4, provides for habitat creation and enhancement measures including approximately 5.5km of hedgerow planting and approximately 3.6ha of woodland creation. The implementation of these measures will require localised ground preparation and disturbance of soil and subsoil. However, the works are relatively small-scale and will be undertaken in accordance with the measures prescribed within the BMEP and relevant environmental management measures. Once established, the proposed planting will strengthen habitat connectivity and increase the ecological value of habitats within the Site.

Taking account of the proposed mitigation outlined in Chapter 6, Chapter 8 and the CEMP (Appendix 4-3) the residual interactive effect between Biodiversity and Land, Soils and Geology during the construction phase is deemed to be Long-term, Slight, Negative, Direct and Likely.

Operational Phase

The BMEP works will have Long Term, Slight, Direct, Positive Likely effect on the land environment. Please see Chapter 6 and the BMEP for details.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase to a lesser extent and lesser duration, with the exception of the implementation of the BMEP works which are intended to be Permanent.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Biodiversity and Hydrology and Hydrogeology

Construction Phase

Site activities during the construction phase of the Proposed Project have the potential to effect local hydrology and hydrogeology in a number of ways through changes to surface water and groundwater quality and drainage, which in turn would have the potential to negatively effect biodiversity. As outlined in Chapter 9: '*Hydrology & Hydrogeology*', construction activities including tree felling, vegetation removal, earthworks, excavation, watercourse crossings, dewatering and the movement and storage of construction materials have the potential, in the absence of mitigation, to result in the mobilisation of sediment, suspended solids, organic matter and other pollutants to the Site drainage network and downstream watercourses. Such effects could result in a deterioration in water quality and consequently affect aquatic habitats and species.

The principal surface water receptors associated with the Proposed Project include the Licky, Goish and Brickey Rivers and their tributaries. Of particular sensitivity is the Licky River, which forms part of the Blackwater River (Cork/Waterford) SAC and supports a freshwater pearl mussel population that is particularly sensitive to sedimentation and deterioration in water quality.

A comprehensive drainage management system will be implemented during the construction phase to prevent potentially contaminated runoff from reaching watercourses. Measures include the interception and diversion of clean water around works areas, collection and treatment of potentially sediment-laden runoff, settlement ponds, check dams, silt controls, buffered diffuse discharges and the avoidance of direct discharges to watercourses. Works will also be restricted during significant rainfall events and water quality monitoring, including turbidity monitoring, will be undertaken during construction. These measures are detailed in Section 9.4.3 Chapter 9, and the CEMP. A Freshwater Pearl Mussel Management Plan is similarly included as Appendix 6-6 of this EIAR, and details the mitigation and monitoring measures for the protection of freshwater pearl mussel during the construction and operational phases of the Proposed Wind Farm.

The BMEP also includes woodland, hedgerow and riparian planting measures. Riparian planting has been incorporated in part to stabilise soils, reduce the erosive energy of surface runoff and reduce sediment transport towards the Licky River and its tributaries. While implementation of these measures will involve localised ground disturbance, the works will be undertaken in accordance with the environmental management measures set out in the BMEP and relevant chapters of this EIAR. Once established, the proposed planting will provide a Positive interaction between biodiversity and the water environment by improving riparian habitat, increasing habitat connectivity and assisting in the protection of downstream water quality.

Taking account of the proposed mitigation and monitoring measures the residual interactive effect between Biodiversity and Hydrology and Hydrogeology will have a Short term, Imperceptible, Indirect, Negative residual interactive effect during the construction phase.

Operational Phase

During the operational phase, the replacement of natural ground surfaces with turbine hardstands, access roads and other permanent infrastructure will result in a localised increase in surface water runoff. There is therefore potential for an interaction with biodiversity where changes to runoff volumes, drainage or water quality could affect downstream aquatic habitats and species.

The operational drainage system will continue to collect, attenuate and discharge runoff in a controlled manner through the drainage measures established during construction. Routine inspection and maintenance of drains, check dams and settlement ponds will also be undertaken to ensure that the drainage system continues to operate effectively. Chapter 9 concludes that, following implementation of these measures, effects associated with increased runoff and water quality during operation will be Imperceptible or not significant and therefore will not have a significant interactive effect on biodiversity.

The continued establishment and management of the habitat enhancement measures proposed in the BMEP, including riparian, woodland and hedgerow planting, will also provide longer-term ecological benefits and assist in maintaining habitat connectivity and protecting water quality.

Taking account of the of the proposed mitigation and monitoring measures the residual interactive effect between Biodiversity and Hydrology and Hydrogeology will be Long term, Imperceptible, Indirect, Negative during the operational phase.

Decommissioning Phase

Potential interactive effects during the decommissioning phase will generally be similar to those identified during the construction phase, including the potential mobilisation of sediment and accidental

release of pollutants during the removal of infrastructure and movement of plant and machinery. However, the scale and duration of decommissioning works will be less than during construction.

The mitigation and water management measures described for the construction phase will also be implemented, where relevant, during decommissioning. Measures established under the BMEP will remain in place and will continue to provide biodiversity and water-quality benefits.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Biodiversity and Air Quality

Construction Phase

During the construction phase of the Proposed Project, increased vehicular and dust emissions within and around the Site have the potential to be a nuisance to flora and fauna, thereby having a Short-term, Slight, Negative, Indirect effect. The mitigation measures outlined in Chapter 10: '*Air Quality*' and the CEMP (Appendix 4-3) of the EIAR will ensure that the potential for negative effects is reduced or eliminated. Therefore the residual interactive effect between Air Quality and Biodiversity is Short term, Slight, Negative and Indirect.

Operational Phase

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 resulting from the operation of the Proposed Project will have a Long-term Moderate Positive Indirect effect on air quality, which will positively impact biodiversity.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration given the reduced amount of excavation works required and due to the fact that all foundations and access roads will remain in-situ.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Biodiversity and Climate

Construction Phase

The construction of the Proposed Project will result in greenhouse gas emissions associated with tree felling, production of Proposed Project infrastructure and construction materials, and operation of vehicles and plant. As well, the built infrastructure footprint will result in the loss of carbon fixing vegetation within the Site. 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. However, 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.

Operational Phase

During operational phase, the Proposed Project will displace carbon dioxide from fossil fuel-based electricity generation, over the proposed 35-year operational lifespan due to the provision of clean renewable energy to the national grid, consequently, in combination with other renewable energy projects, the Proposed Project will have a Long term, Moderate, Direct, Positive, residual interactive effect on flora and fauna.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Biodiversity and Noise & Vibration

Construction Phase

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. Taking into account the mitigation measures the residual interactive effect of noise and biodiversity is considered to be Short term, Slight, Indirect and Negative.

Operational Phase

The Proposed Project will introduce a new operational noise source into the existing environment; however, operational activity within the Site will otherwise be limited, with maintenance visits and associated vehicle movements occurring intermittently. The predicted noise levels associated with the Proposed Turbines are not considered to have potential to cause a significant effect associated with turbine noise for biodiversity within the Proposed Wind Farm site. The limited onsite noise activity generated by the Proposed Project during the operational phase will have a Long-term, Imperceptible, Indirect and Negative effect on biodiversity.

Decommissioning Phase

Site activity during the decommissioning phase could give rise to noise that could be a nuisance for fauna, which use the Site. Noise levels associated with decommissioning will be similar to the construction phase noise, however to a much lesser extent and lesser duration, given the lack of excavation works require throughout the Site.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.3

Ornithology

Ornithology and Land, Soils & Geology

Construction Phase

Construction of the Proposed Project will require permanent and temporary land-take together with site clearance, earthworks and the excavation and handling of topsoil, subsoil and locally occurring bedrock. These activities have the potential to interact with ornithological receptors through the loss, alteration and disturbance of habitats used by birds for breeding, foraging and roosting. Direct habitat loss and disturbance/displacement as potential effects on a number of Key Ornithological Receptors (KORs) are identified in Chapter 7.

The Proposed Project has been designed to minimise permanent land-take and excavation through the use of existing forestry tracks and previously disturbed areas where practicable, while temporary construction areas will be reinstated following completion of the works. Measures outlined in Chapter 7: 'Ornithology', Chapter 8: 'Land, Soils and Geology' and the CEMP (Appendix 4-3) will also minimise disturbance to birds during construction, including pre-construction and construction-phase bird monitoring and the establishment of appropriate disturbance buffers around sensitive nests or roosts where required. Additionally, the permanent built infrastructure footprint of the Proposed Project (33.17 ha) consisting of only 2.29% of the Site will minimise the negative residual interactive effect between Ornithology and Land, Soils and Geology.

Taking into account the mitigation measures the residual interactive effect is considered to be Short-term, Direct, Imperceptible, and Negative.

Operational Phase

During the operational phase, no significant excavation or ground disturbance will be required during normal operation of the Proposed Project. The Permanent infrastructure footprint will remain in place, and therefore the land-use and habitat changes established during construction will persist throughout the operational life of the Proposed Wind Farm.

Potential effects on land, soils and geology during operation are principally limited to the unlikely occurrence of accidental leaks or spills associated with maintenance activities. With the implementation of the mitigation measures detailed in Chapter 8, the residual effect on land, soils and geology is assessed as Negative, Imperceptible, Brief to Temporary and unlikely. As no significant ground disturbance is expected during normal operation, no additional significant interaction with ornithological receptors is anticipated.

Notwithstanding the above, the habitat enhancement measures outlined within the BMEP (Appendix 6-4) will provide permanent nesting, roosting and foraging habitat for a range of avian species throughout the Site, as well as suitable habitat for prey species of these species through the establishment of 3.6ha of broadleaf woodland planting and approximately 5.5 km of hedgerow planting.

Taking into account the mitigation measures the residual interactive effect is considered to be Long-term, Imperceptible, Indirect and Negative.

Decommissioning Phase

Interactive effects during the decommissioning phase will generally be similar to those arising during construction, principally through localised ground disturbance, plant movement and temporary disturbance of habitats used by birds. However, Chapter 8 identifies decommissioning effects as being of a lower magnitude than those arising during construction due to the more limited extent of excavation and ground disturbance. Relevant construction-phase mitigation measures will also be applied during decommissioning, while Chapter 7 provides for bird monitoring during the decommissioning phase.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Ornithology and Hydrology and Hydrogeology

Construction Phase

Site activities during the construction phase of the Proposed Project may have the potential to give rise to some water pollution, and consequential effects on birds and their prey species (via impacts 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: ‘*Ornithology*’, Chapter 9: ‘*Hydrology and Hydrogeology*’ and the CEMP (Appendix 4-3), the effects during the construction are considered to be Short term, Imperceptible, Negative, Indirect and Unlikely.

Operational Phase

During the operational phase, the potential for interaction between Ornithology and Hydrology and Hydrogeology will be substantially reduced compared with the construction phase. Chapter 9: ‘*Hydrology & Hydrogeology*’ identifies operational risks to water quality principally in relation to drainage, periodic maintenance activities and the potential for accidental spills or leaks, with possible effects including sedimentation, changes in water colour or clarity and hydrocarbon contamination. These effects could, in the absence of mitigation, adversely affect aquatic habitats and associated biota and thereby result in indirect effects on birds which rely upon watercourses, wetlands or aquatic prey resources.

Operational drainage will continue to be managed in accordance with the Surface Water Management Plan, including continued water-quality monitoring. Consequently, significant consequential effects on birds arising from changes to the hydrological environment are not anticipated during the operational phase. The residual interactive effect between ornithology and hydrology and hydrogeology is Long term, Imperceptible, Indirect, Negative and Unlikely.

Decommissioning Phase

Site activities during the decommissioning phase of the Proposed Project may have the potential to give rise to some water pollution, and consequential effects on birds and their prey species (via impacts such as disturbance and deterioration of habitat quality) that use that water within the same catchment. Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Ornithology and Air Quality

Construction Phase

During the construction phase of the Proposed Project, increased vehicular and dust emissions within and around the Site have the potential to be a nuisance to birds. The mitigation measures outlined in Chapter 10: ‘*Air Quality*’ and the CEMP (Appendix 4-3) of the EIAR will ensure that the potential for negative effects is reduced or eliminated. The residual interactive effect is thereby considered to be Short-term, Imperceptible, Indirect, Negative and Unlikely.

Operational Phase

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 resulting from the operation of the Proposed Project will have a Long-term Moderate Indirect Positive effect on air quality for biodiversity.

Decommissioning Phase

During the decommissioning phase of the Proposed Project, increased vehicular and dust emissions within and around the Site have the potential to be a nuisance to birds. Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a much lesser extent and lesser duration, given the lack of excavation works required and reduced traffic generation associated with decommissioning works.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Ornithology and Climate

Construction Phase

The construction of the Proposed Project will result in greenhouse gas emissions associated with tree felling, production of Proposed Project infrastructure and construction materials, and operation of vehicles and plant. As well, the Proposed Project footprint will result in the loss of carbon fixing vegetation within the Proposed Wind Farm site. This impact on Ornithology ranges from a Negative Slight to Imperceptible, Long term, Indirect 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. Once emitted to the atmosphere, the greenhouse gas emissions that will arise from construction phase activities will have a Permanent, Imperceptible, Negative, Direct effect on Climate.

Operational Phase

Climate change is one of the biggest threats to biodiversity, inclusive of bird species globally. Climate change is artificially accelerating due to human activities which release greenhouse gases and other chemicals. During operational phase, the Proposed Project will displace carbon dioxide from fossil fuel-based electricity generation, over the proposed 35-year operational lifespan due to the provision of clean renewable energy to the national grid, consequently, in combination with other renewable energy projects, the Proposed Project will have a Long term, Moderate, Indirect, Positive effect on flora and fauna.

Decommissioning Phase

The decommissioning of the Proposed Project will result in greenhouse gas emissions associated with operation of vehicles and plant. Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Ornithology and Noise & Vibration

Construction Phase

Site activity during the construction phase could give rise to noise and vibration that could be a nuisance for birds, which use the Site. Best practice mitigation measures are included in Chapter 7 and Chapter 12 and the CEMP (Appendix 4-3) to minimise the potential negative effect of noise generated during the construction phase. Accounting for the mitigation measures mentioned above, the residual effect of noise and vibration during construction on birds is considered to be Short-term, Not Significant, Direct and Negative.

Operational Phase

The limited onsite noise activity generated by the Proposed Project during the operational phase could be a nuisance for birds. Operational noise will have a Long term, Imperceptible, Direct, Negative, residual interactive effect on Ornithology.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a much lesser extent and lesser duration due to the lack of excavation works and lesser traffic generation during the decommissioning phase.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.4

Land, Soils and Geology

Land, Soils & Geology, and Hydrology and Hydrogeology

Construction Phase

As identified in Chapter 9: '*Hydrology and Hydrogeology*', 69.27 ha of conifer forestry will be felled to accommodate the Proposed Project. During the Proposed Project construction phase a self-imposed buffer zone of minimum 50 metres will be maintained for all natural watercourses where possible. Proven forestry best practice measures to mitigate the risk of releases of sediment have been proposed to ensure that the deforestation activities have no potential impact on the status, ecology or hydro morphology of downstream waters. The residual interactive effect between Land, Soils and Geology, and Hydrology and Hydrogeology will be Temporary, Imperceptible, Indirect, Negative, and Likely effect on downstream water quality and aquatic habitats.

Operational Phase

As identified in Chapter 8: '*Lands, Soils & Geology*' of this EIAR, the erosion of soil/subsoil can have the effect of reducing the overall volume of soil/subsoil at the Site, with the potential for some eroded subsoils to reach watercourses, leading to water quality issues such as high turbidity. This has the potential to have a Short term, Slight, Direct and Negative, effect on water quality. Mitigation measures to ensure there are no significant negative effects on water quality are presented in Chapter 8: '*Lands, Soils & Geology*', Chapter 9: '*Hydrology and Hydrogeology*', and the CEMP.

Decommissioning Phase

Site activities during the decommissioning such as minor excavation works have the potential to cause the release of sediments that may have an effect on water quality in the locality, similar to the construction phase site activities however to a lesser extent and lesser duration. The same mitigation measures implemented during the construction will be implemented during decommissioning phase

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Land, Soils & Geology and Air Quality

Construction Phase

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, Indirect 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 includes dust suppression measures which is further outlined in the CEMP (Appendix 4-3).

Operational Phase

No anticipated interactive effect.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration due to the lack of large scale excavations and reduced traffic generation.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Land, Soils & Geology and Climate

Construction Phase

The construction of the Proposed Project will result in greenhouse gas emissions associated landcover change including tree felling, production of Proposed Project infrastructure, and the loss of carbon fixing vegetation within the Proposed Wind Farm site. On this basis, the residual interactive effect between Land, Soils and Geology and Climate will be Permanent, Imperceptible and Negative.

Operation Phase

No interactive impact anticipated

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration due to the absence of large excavations and reduced traffic generation.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

Land, Soils & Geology and Cultural Heritage

Construction Phase

The construction of the Proposed Project will not result in any direct, negative effects on the recorded archaeological, architectural or cultural heritage resource as none of these sites are located within the footprint of the development that require excavations and ground works. However, the removal of spoil during the construction phase is likely to have a Permanent, Slight, Negative effect on any previously unrecorded sub-surface archaeological site and/or artefacts. Mitigation measures outlined in Chapter 14: '*Cultural Heritage*' will reduce the potential for negative effects on unrecorded sites and artefacts during excavations.

Operation Phase

During the operational phase, there is no potential for impacts on cultural heritage from a land soils and geology perspective as there will be no groundworks or excavations associated with this phase.

Decommissioning Phase

Similarly to the construction phase, there will be no direct negative effects on the recorded archaeological, architectural or cultural heritage resource as none of these sites are located within the footprint of the development that require excavations and ground works. The potential for direct or indirect negative effects on previously unrecorded monuments is significantly less than during the construction phase as there are no large excavation works required to facilitate the decommissioning of the Proposed Project.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.5 Air Quality

Air Quality and Material Assets

Construction Phase

The transport of turbine components, supporting infrastructure materials, construction and staff vehicles, aggregate materials and waste removal vehicles to, from and within the Proposed Project has the potential to give rise to localised dust and exhaust emissions during the construction phase, particularly during periods of dry weather. Track-out of mud and dust onto the public road network also has the potential to generate localised dust emissions along the construction access routes.

The air quality assessment identifies a combined approximately 15.26 km of local roads comprising sections of the L-2023, L-2024, L-6082, L-6085 and L-99997 for assessment of potential track-out effects associated with construction traffic. As discussed in Chapter 10: 'Air Quality', the IAQM 2024 Guidance is used to assess the potential risk to high sensitivity receptors from dust deposition. Dust deposition impacts can occur for a distance of 250m from works areas, but the majority of deposition occurs within the first 50m (IAQM, 2024). Within these road sections, 31 no. high-sensitivity receptors are located within 50 m of the roads being assessed.

In the absence of mitigation, construction traffic movements and associated track-out have the potential to result in Short-term, Slight, Negative effects on air quality. However, with the implementation of the dust and traffic management measures outlined in Chapter 10, Chapter 15.1: Traffic & Transport and the CEMP, including measures relating to the control of dust, track-out and the cleanliness of public roads, residual effects on air quality associated with construction traffic will be Short-term, Imperceptible and Negative.

Operational Phase

Traffic during the operational phase will be minimal and generally limited to maintenance visits by car or light goods vehicle. The Proposed Grid Connection will also generate only occasional maintenance trips. On occasion, more frequent light goods vehicle or heavy goods vehicle visits may be required for maintenance or component replacement.

The resulting exhaust and dust emissions will give rise to a Long-term, Imperceptible, Indirect, Negative effect on air quality.

Decommissioning Phase

Traffic associated with decommissioning will be lower than during construction, as the importation of stone and concrete for access tracks and turbine foundations will not be required. There will be minor excavation works but none requiring the level of plant associated with the construction phase. Any interaction and consequential effect during the decommissioning phase will be similar to that during construction, but of lesser magnitude and duration. Construction-phase mitigation measures will also be implemented during decommissioning.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.6

Climate

Climate and Material Assets

Construction Phase

The construction of the Proposed Project will result in greenhouse gas emissions associated with the manufacture and transport of the Proposed Turbines and other construction materials, operation of construction vehicles and plant, transport of construction personnel, forestry felling, waste management and the loss of carbon-fixing vegetation within the Site. Chapter 11: '*Climate*' identifies these construction-related greenhouse gas emissions as Short-term, Slight and Negative prior to mitigation. Some longer-term effects will also arise from the removal of carbon-fixing vegetation and habitat.

There is a direct interaction with Material Assets, particularly Traffic and Transport and Waste Management, as vehicle movements associated with the delivery of construction materials, turbine components and other infrastructure, as well as the removal of waste, will contribute to greenhouse gas emissions. Chapter 11 specifically relies on the construction traffic estimates set out in Chapter 15: '*Material Assets*' in calculating transport-related carbon emissions. Mitigation measures include maintaining construction vehicles and plant in good operational order, switching off stationary vehicle engines, using specified haul routes, maximising the use of material sourced from the onsite borrow pits and local licensed quarries, and managing waste in accordance with the CEMP (Appendix 4-3).

Following implementation of these measures, residual greenhouse gas emissions associated with construction will have a Short-term, Imperceptible, Negative effect. Once emitted to the atmosphere, however, these emissions will result in a Permanent, Imperceptible, Negative effect on climate.

Operational Phase

During the operational phase, traffic associated with the Proposed Project will be minimal and generally limited to maintenance and monitoring vehicles. Accordingly, greenhouse gas emissions arising from operational traffic and maintenance activities will be limited.

Operation of the Proposed Project will displace electricity generated from fossil fuel-based sources. Chapter 11 estimates that the Proposed Project, based on an installed capacity of approximately 145.2 MW, will displace approximately 79,376 tonnes of CO₂ per annum, equivalent to approximately 2,778,160 tonnes of CO₂ over its proposed 35-year operational life. The estimated 297,023 tonnes of CO₂ associated with the construction and operational lifecycle of the Proposed Project are expected to be offset within approximately 44.9 months of operation.

The interaction between Climate and Material Assets during operation is therefore Positive, as the Proposed Project constitutes renewable electricity-generating infrastructure which will contribute to reducing reliance on fossil fuel-based electricity generation and associated greenhouse gas emissions. Chapter 11 assesses the residual operational effect on climate as Long-term, Significant and Positive.

On this basis, while the interaction gives rise to a Significant Positive effect on Climate, no significant interactive effect between Climate and Material Assets is identified.

Decommissioning Phase

Greenhouse gas emissions during the decommissioning phase will arise principally from the operation of plant and machinery and traffic associated with dismantling and removing the Proposed Turbines and ancillary infrastructure. Traffic associated with decommissioning is expected to be lower than during construction, as significant construction-phase activities such as the importation of stone and concrete for access tracks and turbine foundations will not be required.

Construction-phase mitigation measures will also be implemented during decommissioning. The resulting residual effect on climate is assessed as short-term, Imperceptible, Direct and Negative, which is not significant.

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.7 **Landscape and Visual**

Landscape & Visual and Cultural Heritage

Construction Phase

The construction activities may potentially cause temporary impacts on the landscape setting of recorded sites and monuments in the wider area through the creation of temporary structures, dust, soil erosion and alterations to drainage. It is considered that the changes in landscape construction phase will have a Slight, Short-term, Negative, Direct effect in terms of direct landscape effects.

Operation Phase

As described in Chapter 13: '*Landscape & Visual*' of this EIAR, the proposed turbines have the potential to change the landscape setting of recorded sites and monuments in the wider area. However, it is concluded in Chapter 13: '*Landscape & Visual*' that any potential, indirect, visual effect of the proposed turbines 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.

Decommissioning Phase

Any interactive impact and consequential effect that occurs during the decommissioning phase will be similar to that which occurs during the construction phase, however to a lesser extent and lesser duration

On this basis, the identified interaction during the construction, operation and decommissioning phases of the Proposed Project is not significant.

17.2.8 **Vulnerability to Natural Disasters**

Construction, Operation and Decommissioning Phase

As described in Chapter 17: '*Major Accidents and Natural Disasters*', major accidents or natural disasters are hazards which have the potential to affect the Proposed Project and lead to environmental

effects both directly and indirectly. These include accidents during construction, operation and decommissioning of the Proposed Project 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, ornithology, land and soil, Hydrology and Hydrogeology, air quality, climate, cultural heritage, the landscape and material assets. The risk of a major accident and/or disaster during the construction of the Proposed Project is considered 'low' in accordance with the '*A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*'¹(2024, DoHLGH)

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 Project are not significant.

17.3

Mitigation and Residual Effects

Where any potential interactive Negative effects have been identified in the above, 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 effects and the significance of effects, is also presented in each relevant chapter. On this basis the effects arising from the identified interactions are not significant.

¹ DoHLGH (2024) *A Framework for Major Emergency Management – A Guide to Regional Risk Assessment*. Available at: https://assets.gov.ie/static/documents/Guide_to_Regional_Risk_Assessment_September_2024.pdf