Planning and Environmental Consultants

Environmental Impact Assessment Report (EIAR)

Lackareagh Wind Farm, Co. Clare

Chapter 17 – Interaction of Effects

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17. INTERACTION OF EFFECTS

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 and Hydrogeology), Air Quality, Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage (Archaeological, Architectural and Cultural Heritage), Material Assets (Roads and Traffic, Telecommunications and Aviation), and Major Accidents and Natural Disasters as a result of the Proposed Project as described in Chapter 4 of this EIAR. All of the potential significant effects of the Proposed Project 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 Project are detailed in the accompanying Construction and Environmental Management Plan (CEMP) (Appendix 4-3 of this EIAR). 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 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.

Table 17-1 Interaction Matrix: Potential for Interacting Impacts

	Phase	Population and Human Health	Biodiversity, Flora and Fauna	Ornithology	Land, Soils and Geology	Water	Air Quality	Climate	Noise and Vibration	Cultural Heritage	Landscape and Visual	Material Assets	Major Accidents and Natural
Population and Human Health	C												
	O												
Biodiversity,	C												
	O												
Ornithology, Birds	C												
	O												
Land, Soils and Geology	C												
	O												
Water	C												
	O												
Air Quality	C												
	O												
Climate	C												
	O												
Noise and Vibration	C												
	O												
Cultural Heritage	C												
	O												
Landscape and Visual	C												
	O												
Material Assets	C												
	O												
Major Accidents and Natural Disasters	C												
	O												

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

The potential for interaction of impacts 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) was not carried out by MKO, the entire project and all the work of all sub-consultants was managed and coordinated by the company. This EIAR was edited and collated by MKO as an integrated report of findings from the impact assessment process, by all relevant experts, and impacts that potentially interact have been assessed in detail in the individual chapters of the EIAR above and summarised in Section 17.2 below.

Where any potential negative impacts have been identified during the assessment process, these impacts have been avoided or reduced by design and the proposed mitigation measures, as presented throughout the EIAR and highlighted in Section 17.2 below.

17.1.1 Statement of Authority

This section of the EIAR has been prepared by Ciarán Fitzgerald and reviewed by Niamh McHugh and Sean Creedon, all of MKO. Ciarán Fitzgerald is a Graduate 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 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 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 analysing 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 in a range of wind farm projects, reviewing EIAR chapters and assisting with project development. Niamh is a Project Environmental Scientist who has been working with MKO since June 2021. Niamh graduated with a First-Class Honours Degree in Environmental Science from the National University of Ireland, Galway in 2021, and has been working as an Environmental Scientist since then. Since beginning her work with MKO, Niamh has been working as part of a multi-disciplinary team conducting tasks such as report writing, shadow flicker assessments, project management, and QGIS mapping. Niamh's particular strengths lie in report writing and project management and communication. Niamh has been involved in the preparation of Environmental Impact Assessment Screening Reports, Strategic Environmental Assessment Pre-Screening Reports, Planning and Environmental Reports, and Environmental Impact Assessment Reports for a wide range of projects, but mostly focusing on large-scale onshore renewable energy developments. In her role as an Environmental Scientist, Niamh has been charged with co-ordinating large multidisciplinary teams in order to produce robust Environmental Impact Assessment Reports to accompany Planning Applications for various large-scale developments. Sean Creedon is an Associate Director in the Environment Team at MKO. He leads a team of highly skilled environmental professionals working on EIAR for large-and medium scale Renewable Energy infrastructure. Sean has directed and overseen multiple renewable energy projects across wind, solar, battery and hydrogen as well as a range of thermal and other energy related developments. He has worked on the planning and environmental impact elements within all stages of wind farm project delivery. Sean's professional experience includes the development and management of a portfolio of wind farm developments to the consenting decision. He is a member of the MKO senior management team. Sean has over 22 years' experience in program and project development,

holds an MSc from NUI Galway and a Diploma in Project Management from Institute of Project Management Ireland.

17.2 Impact Interactions

17.2.1 Population and Human Health

Population and Human Health, Land, Soils and Geology

The use of plant machinery on site during excavation works and the movement of peat and spoil may result in the potential for soil and ground contamination. A wind farm and associated underground grid connection cabling 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 and the Construction and Environmental Management Plan (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.

Population and Human Health, and Water

Potential health effects arise mainly through the potential for surface and groundwater contamination which may have negative effects on public and private water supplies. The Proposed Wind Farm site is drained by several 1st and 2nd order streams and lies within 2 no. surface water catchments. 1 no. new junction is proposed within 50m of a watercourse along the L7080. However, as outlined in Chapter 9, no negative effects on this watercourse are anticipated owing to the gradients of the topography and the location of the works relative to the watercourse. The Proposed Grid Connection Route is predominantly located in the Lower Shannon surface catchment and Hydrometric Area 25D with the northern section of the Proposed Grid Connection Route is mapped in Shannon Estuary surface water catchment and Hydrometric Area 27 which are listed as DWPA. Within these catchment areas there are a total of 12 no. watercourse crossings, comprising 3 no. bridge crossings and the remainder being culvert crossings. There are no public water schemes or group water schemes within the Proposed Project site. The Proposed Project design and mitigation measures detailed in Chapter 9 and the CEMP (Appendix 4-3) ensures that the potential for effects on the water environment are not significant. A comprehensive Surface Water Management Plan (SWMP) (Appendix 4-4) is provided, and controls are outlined in Chapter 9 to ensure protection of all downstream receiving waters. Mitigation measures will ensure that surface runoff from the developed areas of the Proposed Wind Farm 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.

Population and Human Health, and Air Quality

The excavation and movement of peat and spoil during the construction phase of the Proposed Project is likely to create dust and exhaust emissions which will result in a permanent, slight, negative effect on local air quality (once air pollutants are emitted into the atmosphere, they are considered permanent). Mitigation measures to reduce dust and exhaust emissions generated during the construction phase of the Proposed Project are presented in Chapter 10. 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 an average of 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 slight positive effect on human health.

Population and Human Health, and Climate

The construction of the Proposed Project 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 impact will be permanent 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. 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 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 6.6MW per turbine for the Proposed Wind Farm would result in an estimated installed capacity of 46.2MW, displacing approximately 32,565 tonnes of carbon dioxide per annum or 1,139,775 tonnes over its operational life from traditional carbon-based electricity generation. This will have a long-term moderate positive effect on climate and therefore a long-term positive effect on health.

Population and Human Health, and Noise and Vibration

As identified in Chapter 5 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 Nosie and Vibration and the CEMP (Appendix 4-3) will be implemented. The construction phase will likely create a short-term, slight negative effect on human health due to the nuisance caused by construction plant and vehicle noise emissions. As detailed in Chapter 12, the predicted noise emissions during the operational phase are not significant. Furthermore, as noise emissions from turbines are controllable via inbuilt technologies, the Proposed Wind Farm will be able to comply with the *'Wind Energy Development Guidelines for Planning Authorities'* (Department of the Environment, Heritage, and Local Government (DoEHLG), 2006) (hereafter referred to as DoEHLG 2006 Guidelines). A noise assessment utilising the DoEHLG's '*Draft Revised Wind Energy Development Guidelines'* (hereafter referred to as Draft DoEHLG 2019 Guidelines) is not technically feasible or appropriate and has not therefore been undertaken. Please refer to Section 12.2 of Chapter 12 of this EIAR for further details. The Proposed turbines will be capable of achieving compliance with noise conditions imposed should the Proposed Wind Farm receive a grant of planning permission. Construction works associated with the Proposed Grid Connection Route in any one location will be limited in duration and adverse noise effects are anticipated to be negligible. Where construction activities occur directly beside a dwelling, the noise levels at that location are likely to be in the region of 75-80dB (A) for a short period of time. At some watercourse, culvert and drain crossings there may be a requirement for Horizontal Directional Drilling (HDD). Specifically, this could be required for some small bridge or water crossings. For small crossings, the work would likely be completed within 1 and 2 weeks so it will be short term only. Where activities involving the small HDD drilling rig are within 30m of a dwelling then noise mitigation measures will be implemented. It is likely that HDD drilling will occur in 1 location along the Proposed Grid Connection as detailed in Chapter 9 of this EIAR. Construction works related to distant road junction improvements may also occur outwith the Construction Nosie Assessment Locations (detailed in Chapter 12 of this EIAR) considered above, in close proximity to some residential receptors. It is possible that noise from these activities may at times exceed the guideline levels, however it should be noted that this will be a short-term, temporary impact. Accordingly, the impact is deemed not significant for construction activities associated with cable trenching, bridge crossings and distant road junction upgrades.

Population and Human Health, and Landscape and Visual

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 heavily modified landscape. The erection of the proposed 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 14 of this EIAR comprises the landscape and visual impact assessment of the Proposed Project. The Proposed Wind Farm adheres to the recommended minimum 500m set back distance in the DoEHLG 2006 Guidelines and also the 4 times tip height set-back distance from residential dwellings set out the Draft DoEHLG 2019 Guidelines specifically for visual amenity purposes (i.e., 720m).

Population and Human Health, and Material Assets

The Proposed Project 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 (Appendix 15-2) will be in place to minimise all disruption, as described in Chapter 15 Material Assets and the CEMP (see 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 and the CEMP (Appendix 4-3 dust and exhaust emission will be contained and the potential for impact on health will be imperceptible.

As detailed in Chapter 15 Sections 15.2 and 15.3, the Proposed Wind Farm will not have a significant effect on either aviation or telecoms during the construction or operational phases. During the operational phase, there will be an imperceptible effect on existing utilities.

Biodiversity

Biodiversity and Land, Soils and Geology

The excavation and removal of peat and spoil, during the construction phase of the Proposed Project is likely to result in some disturbance of flora and fauna in and adjacent to the Proposed Project footprint thereby, potentially causing a long term, slight, negative effect on biodiversity. These potential impacts have been assessed in Chapter 6 of this EIAR and excavated spoil will be contained on site in the borrow pit or used for side-casting and landscaping.

It is also proposed to plant and manage approximately 2,673m of native broadleaved treelines, hedgerows and shrubs within the Proposed Wind Farm site. It is also proposed manage the felled woodland for heathland/peatland regeneration. The measures listed above will have a slight long term positive effect and benefit to a number of species including bats, small mammals and pollinator species as these measures will both create and increase suitable habitat for foraging, commuting, and nesting for a wide range of fauna including those listed above. The replanting of hedgerow and biodiversity enhancement measures will assist in preventing the erosion of soil and bare ground.

Biodiversity and Water

Site activities during the construction phase of the Proposed Project 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 and Chapter 9 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 biodiversity. In addition, as detailed in the Biodiversity Enhancement and Management Plan

(Appendix 6-4), habitat creation and enhancement will be completed in a way that avoids use of fertilisers or slurries, therefore reducing the potential impact on surface water and groundwater.

Biodiversity and Air Quality

During the construction phase of the Proposed Project, increased vehicular and dust emissions within and around the Proposed Project 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 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.

Biodiversity and Climate

The construction of the Proposed Project will result in greenhouse gas emissions associated with felling, excavations, 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 Climate and therefore biodiversity. This is assessed further in Chapter 11 of this EIAR, and mitigation measures are presented to minimise any potential effects.

During operational phase, the Proposed Project 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 biodiversity.

The construction of the Proposed Project will involve the removal of carbon fixing vegetation and habitat, however, as detailed in Appendix 6-4 Biodiversity Management and Enhancement Plan, it is proposed to plant and manage approximately 2,673m of native broadleaved treelines, hedgerows and shrubs within the Proposed Wind Farm site. As outlined in Chapter 11, the Proposed Project will displace carbon dioxide from fossil fuel-based electricity generation, over the proposed 35-year lifespan operational phase 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 positive effect on biodiversity.

Biodiversity and Noise & Vibration

Site activity during the construction phase could give rise to noise that could be a nuisance for fauna who utilise the site. Best practice mitigation measures are included in Chapter 6 and Chapter 12 and the CEMP (Appendix 4-3) to minimise the potential negative effect of noise generated during the construction phase on biodiversity. The limited onsite noise activity generated by the Proposed Project during the operational phase will not have a significant effect on biodiversity.

17.2.2 Birds

Birds and Land, Soils & Geology

The removal of hedgerows and soil, during construction phase of the Proposed Project is likely to result in some disturbance of fauna, including birds, in the areas surrounding the Proposed Project works area. The relevant mitigation measures outlined in Chapter 7, Chapter 8 and the CEMP (Appendix 4-3) will be in place to avoid any subsequent effect on ornithology.

It is also proposed to plant and manage approximately 2,673m of native broadleaved treelines, hedgerows and shrubs within the Proposed Wind Farm site. The measures listed above will have a slight long term positive effect on mammals, birds, bats, and invertebrates as these measures will both create and increase suitable habitat for foraging, commuting, and nesting for a wide range of fauna including those listed above. In addition. It is also proposed manage the felled woodland for heathland/peatland regeneration. Please see Chapter 6 Biodiversity and the associated Biodiversity Management and Enhancement Plan (Appendix 6-4), for details.

Birds & Water

Site activities during the construction phase of the Proposed Project 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 the water within the same catchment. With the implementation of mitigation and monitoring measures outlined in Chapter 7, Chapter 9 and the CEMP (Appendix 4-3), the effects during the operational phase from site activities will be not significant.

Birds and Air Quality

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 for birds. The mitigation measures outlined in Chapter 10 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 ornithology from vehicular and dust emissions are imperceptible.

Birds and Climate

The construction of the Proposed Project will result the production of greenhouse gas emissions associated with excavation works, felling, production of construction materials and operation of vehicles and plant. This impact on ornithology 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 Climate.

During the operational phase, the Proposed Project 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.

Birds and Noise & Vibration

Site activity during the construction phase could give rise to noise that could be a nuisance for birds that use the Proposed Project 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 on ornithology.

Site activity during the operational phase could give rise to noise that could be a nuisance for birds, which use the Proposed Project site. Best practice mitigation measures are included in Chapter 7 and Chapter 12 and to minimise the potential negative effect of noise generated during the operational phase. The limited onsite noise activity generated by the Proposed Project during the operational phase will not have a significant effect on birds.

17.2.3 Land, Soils and Geology

Land, Soils & Geology, and Water

As identified in Chapter 8 of this EIAR, the movement and removal of peat and 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 Project works areas. Mitigation measures to ensure there are not significant, negative effects on water quality are presented in Chapter 8, Chapter 9, and the CEMP (Appendix 4-3).

Land, Soils & Geology and Cultural Heritage

The removal of peat and spoil during the construction phase is likely to have a permanent, significant, negative effect on any previously unrecorded sub-surface archaeological site and artefacts. Any archaeological sites/features, if detected, during monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of the same. Mitigation measures outlined in Chapter 13 will reduce the potential for negative effects on unrecorded sites and artefacts during excavations.

Land, Soils & Geology and Landscape & Visual

The removal of peat and spoil and the subsequent replacement with crushed stone for the construction of the site roads and hardstanding areas within the Proposed Wind Farm site has the potential to alter the local landscape. The visual effect of this change is expected to be long term, localised in nature and 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 and exhaust emissions which is considered a short-term, slight, negative impact on air quality. Mitigation measures outlined in Chapter 10 will reduce the potential for negative effects on land, soils, and geology, including includes dust suppression measures which is further outlined in the CEMP (please see accompanying CEMP (Appendix 4-3). No ground works are required for the operational phase.

Land, Soils & Geology and Climate

The construction of the Proposed Project will result in greenhouse gas emissions associated with production of construction materials and operation of vehicles and plant. This impact 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 Climate.

17.2.4 Air Quality

Air Quality and Material Assets

The transportation of vehicles to/from and around the Proposed Project site will give rise to dust and exhaust emissions which is considered a short-term, slight, negative impact on air quality. Following implementation of mitigation measures as outlined in Chapter 10, Chapter 15, and the CEMP (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 Proposed Project site during the operational phase (average of 1-2 LGVs per day) are imperceptible.

17.2.5 Climate

Climate and Material Assets

The construction of the Proposed Project 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 impact will be permanent 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. This is assessed further in Chapter 11 of this EIAR, and mitigation measures are presented to minimise any potential effects.

The Proposed Project will displace carbon dioxide from fossil fuel-based electricity generation, over the proposed 35-year lifespan of the Proposed Project. Therefore, while there will be greenhouse gas emissions associated with the operation of the Proposed Project, this will be offset by the operation of the Proposed Project which will offset 32,565 tonnes of carbon dioxide per annum or 1,139,775 tonnes over its operational life from traditional carbon-based electricity generation. Subsequently, this will cause a long-term positive effect on Climate as a result of reduced greenhouse gas emissions.

17.2.6 Landscape and Visual

Landscape & Visual and Cultural Heritage

As described in Chapter 14 of this EIAR, the Proposed Project has the potential to change the landscape setting of recorded sites and monuments in the wider area. However, it is concluded in Chapter 14 that any potential, indirect, visual effect of the Proposed Project 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.

17.2.7 Major Accidents and Natural Disasters

As described in Chapter 16 of the EIAR, 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, land and soil, hydrology and hydrogeology, air quality, climate, material assets, cultural heritage, and landscape. The risk of a major accident and/or disaster during the construction of the Proposed Project 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 Project are not significant.

17.3 Mitigation and Residual Impacts

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 their effects. Information on potential residual impacts and the significant of effects, is also presented in each relevant chapter.