Significance of the Effects

Based on the assessment above, there will be **No Significant Direct or Indirect Effects** on traffic and transport as a result of the decommissioning phase of the Proposed Development.

14.3.3.5 Cumulative Effects

The potential cumulative impact and associated effects between the Proposed Development and the projects described in Section 2.7 in Chapter 2 of this EIAR, hereafter referred to as the other projects, have been considered in terms of traffic and transport.

There are no construction phase impacts associated with the Proposed Development.

Operational phase and decommissioning impacts on traffic and transport are imperceptible and therefore there are **No Significant Cumulative Effects** in relation to traffic and transport associated with the extended operational phase of the Proposed Development in combination with other projects.

14.4 Telecommunications and Aviation

14.4.1 Introduction

This section of the EIAR assess the likely significant effects of the Proposed Development on telecommunications and aviation. Section 14.3.2 describes the way in which wind turbines can potentially interfere with telecommunications signals or aviation activities. Likely significant effects are assessed and mitigation measures proposed in Section 14.3.3.

14.4.2 Background

14.4.2.1 Broadcast Communications

Wind turbines, like all large structures, have the potential to interfere with broadcast signals, by acting as a physical barrier or causing a degree of scattering to microwave links. The most significant effect at a domestic level relates to a possible flicker effect caused by the moving rotor, affecting, for example, radio signals. The most significant potential effect occurs where the wind farm is directly in line with the transmitter radio path.

14.4.2.2 Domestic Receivers

Depending on local topography, a domestic receiver may receive broadcast signals from more than one location. The strength of the signal varies with distance from the transmitter, and the receiver's antenna is generally always directed towards the most local, and usually the strongest, broadcasting station.

There are two types of potential electromagnetic interference to domestic receivers, depending on the location of the receiver in relation to a wind farm. 'Shadowed' houses are located directly behind a wind farm, relative to the location from where the signal is being received. In this case, the main signal passes through the wind farm and the rotating blades can create a degree of signal scattering. In the case of viewers located beside the wind farm (relative to the broadcast signal direction), the effects are likely to be due to periodic reflections from the blade, giving rise to a delayed signal.

In both cases, i.e., shadowed houses located behind the wind farm and those located to the side of it, the effects of electromagnetic interference may depend to some degree on the wind direction, since the plane of rotation of the rotor will affect both the line-of-sight blockage to viewers located behind the wind farm and the degree of reflection to receivers located to the side.

14.4.2.3 Other Signal Types

Wind turbines have the potential to affect other signal types used for communication and navigational systems, for example tower-to-tower microwave communication links, and airborne and ground radar systems. Interference with radar systems occurs when wind turbines are located close to an airport or directly in line with the instrument landing approach. These effects are generally easily dealt with by detailed micro-siting of turbines in order to avoid alignment with signal paths or by the use of repeater relay links out of line with the wind farm.

14.4.3 Likely Significant Effects and Associated Mitigation Measures

14.4.3.1 'Do-Nothing' Scenario

The 'Do-Nothing' alternative to extending the lifetime of the existing Castledockrell Wind Farm would be to decommission the wind farm once the current planning permission expires in 2025. Should this occur, the impact on telecommunications and aviation would be neutral in the context of this EIAR.

14.4.3.2 Construction Phase

As the Castledockrell Wind Farm is currently operational, and no changes to the wind farm are proposed, there is no construction phase associated with the proposed extension of life of the existing wind farm. There will therefore be no direct effects on telecommunications or aviation as a result of any construction works.

14.4.3.3 Operational Phase

14.4.3.3.1 *Telecommunications*

Pre-Mitigation Impact

The Existing Castledockrell Wind Farm has been operational since 2011. To date, Castledockrell Wind Group Limited are not aware of any complaints from telecommunications service providers regarding interference to service associated with the existing wind farm.

In an email dated 5th April 2022 from the Broadcasting Authority of Ireland (BAI) stated '*...we are not aware of any issues from existing windfarms into existing FM networks.'*

Scoping responses were received from 2rn, Ajisko Ltd., Beat 102, BT Communications, Eir, Enet, ESB Telecommunications, Imagine, Ivertec, Tetra Ireland, Three Ireland, Towercom, Virgin Media and Vodafone during the period of April to June 2022, affirming that the turbines will have no negative effect on their transmission links. 2rn identified that there were no links operating in the area, but identified the possibility that the Proposed Development could interfere with a mast located on Mt Leinster and requested that a protocol agreement be signed with the Developer. This signed protocol agreement is included as Appendix 14-1 to this chapter.

Currently, no telecoms operators have highlighted issues regarding the Proposed Development. Copies of all scoping responses received are presented in Appendix 2-1 of this EIAR.

Mitigation Measures

No telecoms operators have highlighted issued regarding the Proposed Development, therefore no mitigation measures are required.

Residual Effect

The continued operation of the Proposed Development will have a **Long-term, Imperceptible, Neutral Effect** on the telecommunications signals of any other operator during the operational phase of the Proposed Development, as no changes to the existing wind farm are proposed.

Significance of Effects

There will be **No Significant Direct or Indirect Effects** on telecommunications from the Proposed Development.

14.4.3.3.2 *Aviation*

Pre-Mitigation Impact

A scoping response was received from the Irish Aviation Authority (IAA) on the 29th August 2023 regarding their position on the Proposed Development. In their response, IAA stated that '***Based on the information provided, IAA's Aerodromes Division has no requirements for incorporation into the EIA Scoping Request'.***

Additionally, the existing Castledockrell Wind Farm has been in operation since 2011 and no aviation issues have arisen in that time. No changes to the existing wind farm infrastructure or turbine dimensions are proposed.

Mitigation Measures

The developer will coordinate with the IAA directly should a grant of permission be issued, to ensure that the development remains in compliance with all IAA requirements including lighting requirements. Any further details will be agreed with the Department of Defence, Air Corps and the IAA. The coordinates and elevations for the existing turbines has been supplied to the IAA, as is standard practice for all wind farm developments.

Residual Effect

The continued operation of the Proposed Development will have **Long-term, Imperceptible, Neutral Effects** on aviation during the operational phase of the Proposed Development, as all lighting and other requirements will continue to be met by the Applicant.

Significance of Effects

There will be **No Significant Direct or Indirect Effects** on aviation operations due to the Proposed Development.

14.4.3.4 Decommissioning Phase

The potential for electromagnetic interference from wind turbines occurs only during the operational phase of the Proposed Development. As a result, there are **No Significant Direct or Indirect Effects** on telecommunications and aviation associated with the decommissioning phase of the Proposed Development, and therefore no mitigation required.

14.4.3.5 Cumulative Effects

The potential cumulative impacts and associated effects between the Proposed Development and the other projects described in Section 2.7 of this EIAR, hereafter referred to as the other projects, have been considered in terms of aviation and telecommunications.

During the development of any large project that holds the potential to have an impact on telecoms or aviation, the Developer is responsible for engaging with all relevant telecoms operators and aviation authorities to ensure that the proposals will not interfere with television or radio signals by acting as a physical barrier. In the event of any potential impact, the developer for each individual project is responsible that the necessary mitigation measures are in place. Therefore, as each project is designed and built to avoid impacts arising, a cumulative impact cannot arise.

The existing Castledockrell Wind Farm has been operational since 2011 and no changes to the existing wind farm infrastructure are proposed. Therefore, no impacts on telecommunications and aviation are anticipated. There will be **No Significant Cumulative Effects** in relation to telecommunications and aviation associated with the Proposed Development in combination with other projects.

15. MAJOR ACCIDENTS AND NATURAL DISASTERS

15.1 Introduction

This section of the Environmental Impact Assessment Report (EIAR) describes the likely significant effects on the environment arising from the vulnerability of the proposed extension of life of the existing Castledockrell Wind Farm (the 'Proposed Development' as detailed in Chapter 4) to risks of major accidents and/or natural disasters. It has been completed in accordance with the guidance set out by the Environmental Protection Agency (EPA) in '***Guidelines on Information to be contained in Environmental Impact Assessment Reports***' (EPA, 2022) and the European Commission in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU), namely '***Guidance on the Preparation of the Environmental Impact Assessment Report***' (2017).

The assessment of the vulnerability of the Proposed Development to major accidents and natural disasters is carried out in compliance with the EIA Directive, as amended, which states the need to assess:

> ***"The expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or natural disasters, are likely to have significant adverse effects on the environment".***

The objective of this assessment is to ensure that the appropriate precautionary actions are taken for those projects, which "***because of their vulnerability to major accidents and/or natural disasters, are likely to have significant adverse effects on the environment".***

Based on the requirements of the EIA Directive, this chapter seeks to determine:

- The relevant major accidents and/or natural disasters, if any, that the Proposed Development could be vulnerable to;
- The potential for these major accidents and/or natural disasters to result in likely significant adverse environmental effect(s); and
- The measures that are in place, or need to be in place, to prevent or mitigate the likely significant adverse effects of such events on the environment.

15.1.1 Statement of Authority

This section of the EIAR has been prepared by Brandon Taylor and reviewed by Sean Creedon, both of MKO. Brandon Taylor is an Environmental Scientist with MKO with over two years of private consultancy experience. Brandon holds a BSc (Hons) in Geography from McGill University, and a MSc (Hons) in Coastal & Marine Environments from the University of Galway. Brandon's key strengths are GIS and Remote Sensing Analysis, Environmental Research and Reporting and Project Management. Since joining the company, Brandon has been involved in the production of Environmental Impact Assessment Reports for multiple large-scale onshore wind energy developments across Ireland, as well as additional reports and surveys for feasibility studies, EIA screenings and construction and environmental management plans. Sean is an Associate Director in the Environment Team at MKO. He oversees 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. He is a member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting

continuous employee professional development. 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.

15.2 Assessment Methodology

The following sources of information and literature pertinent to the area were used in the preparation of this section of the EIAR:

- Census of Ireland (https://www.cso.ie/en/census/)
- ***Regional Spatial and Economic Strategy (RSES),*** published by the Southers Regional Assembly on 31st January 2020
- Wexford County Development Plan 2022 – 2028[1]
- Wexford County Council website[2]
- Fáilte Ireland[3]

Major accidents or natural disasters are hazards which have the potential to affect the Proposed Development and consequently have potential impacts on the environment. These include accidents during operation or decommissioning of the existing wind farm caused by operational failure and/or natural hazards. The assessment of the risk of major accidents and/or natural disasters considers all factors defined in the EIA Directive that have been considered in this EIAR, i.e. population and human health, biodiversity, land, soils (peat stability), water, air and climate, material assets, cultural heritage and the landscape.

15.2.1 Legislative Context

15.2.1.1 Legislation

As assessment of the following key items was undertaken in accordance with the EIA Directive (as amended):

- The vulnerability of the proposed project to potential accidents and disasters
- The proposed project's potential to cause major accidents or disasters, which pose a risk to the environment.

The information relevant to major accidents and/or disasters to be included in the EIAR is set out in paragraph 8 of Annex IV of the EIA Directive, as follows:

> *"(8) A description of the expected significant adverse effects of the project on the environment deriving the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies".*

[1] https://consult.wexfordcoco.ie/en/consultation/wexford-county-development-plan-2022-2028
[2] https://www.wexfordcoco.ie/
[3] https://www.failteireland.ie/

15.2.1.2 Guidance Documents

The following guidance documents have been consulted in the preparation of this section:

- Environmental Protection Agency (2022). Guidelines on the information to be contained in Environmental Impact Assessment Reports
- Health Service Executive Ireland (2019) Interim HSE Emergency Management Area 5 Major Emergency Plan: Covering Geographical Areas of Counties Carlow, Kilkenny, South Tipperary, Waterford and Wexford;
- Department of Defence (2020) A National Risk Assessment for Ireland
- Wexford County Council (2016) Major Emergency Plan
- European Commission. (2017). Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports
- Environmental Protection Agency (2014) Guidance on Assessing and Costing Environmental Liabilities
- Department of Environment, Heritage and Local Government (2010) A Guide to Risk Assessment in Major Emergency Management

15.2.2 Categorisation of the Baseline Environment

A desk study has been completed to establish the baseline environment for which the proposed risk assessment is being carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment is provided in Section 15.3 below.

15.2.3 Impact Assessment Methodology

15.2.3.1 Introduction

A wind farm is not a recognised source of pollution and is therefore not subject to Industrial Emissions Directive regulations or any other Environmental Protection Agency environmental regulatory consent. Should a major accident or natural disaster occur, the potential sources of pollution on-site during the construction, operational, and decommissioning phases of a wind farm are limited and of low environmental risk. There are no construction or groundworks proposed as part of the Proposed Development.

Sources of pollution with the potential to cause significant environmental pollution and associated negative effects such as bulk storage of hydrocarbons or chemicals, storage of waste, management of flammable material, etc. are limited, and therefore there is an inherently low level of environmental risk associated with major accident or natural disasters impacting the Proposed Development and causing environmental damage.

There is low potential for significant natural disasters to occur at the Proposed Development site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited to issues such as flooding and fires. These are described in the sections below.

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on- and off-site of the accident. The Existing Castledockrell Wind Farm site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards

Involving Dangerous Substances Regulations, i.e., SEVESO sites, and so there are no potential effects from this source.

The Proposed Development has low potential to cause natural disasters or major accidents, as the topography of the site does not vary widely in elevation. The Proposed Development is also located on pastural and arable farmland, with no underlying peat soils being present. There is therefore, no potential for peat slides and low potential for landslides. Any risks associated with flooding, impacts on infrastructure, accidents, etc. are addressed in the sections below.

Current EIA practice already includes an assessment of some potential accidents and disaster scenarios, such as pollution incidents to ground and surface-watercourses, as well as assessment of flooding events and peat instability. These are described in the relevant EIAR assessment chapters where applicable (Refer to Chapters 5 to 14 for further details).

This assessment is focused on an understanding that the Proposed Development will be operated in line with the methodologies and measures prescribed in this EIAR. Therefore, the overall vulnerability of the Proposed Development to risks of major accidents and natural disasters is considered low.

15.2.3.2 Site-Specific Risk Assessment Methodology

A site-specific risk assessment identifies and quantifies risks, focusing on unplanned, but possible and plausible events occurring during the operation and decommissioning of the Proposed Development. The approach to identifying and quantifying risks associated with the Proposed Development by means of a site-specific risk assessment is derived from the EPA document 'Guidance on Assessing and Costing Environmental Liabilities'[4]. The following steps were taken as part of the site-specific risk assessment:

- Risk identification
- Risk classification, likelihood and consequence, and
- Risk evaluation

15.2.3.2.1 *Risk Identification*

Risks have been reviewed through the identification of reasonably foreseeable risks in consultation with the relevant contributors to this EIAR (refer to *Statements of Authority* in Chapters 5 to 15 of this EIAR). The identification of risks has focused on non-standard but plausible incidents that could occur at or as a result of the Proposed Development during operation or decommissioning.

In accordance with European Commission EIAR Guidance, risks are identified in respect of the project's:

1. *Potential to cause accidents and/or disasters*
2. *Vulnerability to potential disasters/accidents*

[4] *https://www.epa.ie/publications/compliance--enforcement/licensees/reporting/financial-provisions/EPA_OEE-Guidance-and-Assessing-WEB.pdf*

15.2.3.2.2 Risk Classification

Classification of Likelihood

After identifying the potential risks, the likelihood of occurrence of each risk has been assessed. An analysis of safety procedures and proposed environment controls was considered when estimating likelihood of identified potential risks occurring. Table 15-1 defines the likelihood ratings that have been applied. The approach adopted has assumed a 'risk likelihood' where one or more aspects of the likelihood description are met.

Table 15-1 Classification of Likelihood (source DoEHLG 2010)

Ranking	Likelihood	Description
1	Extremely Unlikely	May occur only in exceptional circumstances; once every 500 or more years
2	Very Unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communities; and / or little opportunity, reason or means to occur; may occur once every 100-500 years.
3	Unlikely	May occur at some time; and /or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisation's worldwide; some opportunity, reason or means to occur; may occur once per 10-100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence and will probably occur once per 1-10 years
5	Very Likely	Very likely to occur; high level of recorded incidents and/or strong anecdotal evidence. Will probably occur more than once a year.

Classification of Consequence

The consequence rating assigned to each risk has assumed that all proposed mitigation measures and/or safety procedures have failed to prevent the major accident and/or disaster. Further, the ***HSE Emergency Management: Area 5 Interim Emergency Plan 2019,*** if implemented as intended, will work to reduce the consequence if any major accident or disaster. The consequence of the impact if the event occurs has been assigned as described in Table 15-2.

The consequence of a risk to/from the Proposed Development has been determined where one or more aspects of the consequence description are met, i.e., risks that have no consequence have been excluded from the assessment.

Table 15-2 Classification of Impact (Source DoEHLG, 2010)

Ranking	Likelihood	Impact	Description
1	Minor	Life, Health, Welfare Environment Infrastructure Social	Small number of people affected; no fatalities and small number of minor injuries with first aid treatment. No contamination, localised effects <€0.5M Minor localised disruption to community services or infrastructure (<6 hours).
2	Limited	Life, Health, Welfare Environment Infrastructure Social	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements. Simple contamination, localised effects of short duration €0.5-3M Normal community functioning with some inconvenience.
3	Serious	Life, Health, Welfare Environment Infrastructure Social	Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation. Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated. External resources required for personal support. Simple contamination, widespread effects or extended duration €3-10M Community only partially functioning, some services available.
4	Very Serious	Life, Health, Welfare Environment Infrastructure Social	5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated Heavy contamination, localised effects or extended duration €10-25M

Ranking	Likelihood	Impact	Description
			Community functioning poorly, minimal services available
5	Catastrophic	Life, Health, Welfare Environment Infrastructure Social	Large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated. Very heavy contamination, widespread effects of extended duration. >€25M Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.

Risk Evaluation

Once classified, the likelihood and consequence ratings have been multiplied to establish a 'risk score' to support the evaluation of risks by the means of a risk matrix. The risk matrix sourced from the DoEHLG ***Guide to Risk Assessment in Major Emergency Management*** (and as outlined in Table 15-3) indicates the critical nature of each risk. The risk matrix has therefore been applied to evaluate each of the risks associated with the Proposed Development. The risk matrix is colour coded to provide a broad indication of the critical nature of each risk:

- The red zone represents 'high-risk scenarios';
- The amber zone represents 'medium-risk scenarios', and
- The green zone represents 'low-risk scenarios'.

Table 15-3 Classification of Impact (source DoEHLG, 2010)

		Consequence Rating				
		1.Minor	2.Limited	3. Serious	4.Very Serious	5.Catastrophic
Likelihood Rating	5.Very Likely					
	4. Likely					
	3. Unlikely					
	2. Very Unlikely					
	1. Extremely Unlikely					

15.3 Proposed Development Hazard Analysis

15.3.1 Baseline Conditions

The functional area of Wexford County Council falls under the South East Major Emergency Region. The Major Emergency Plan prepared by Wexford County Council (2016) outlines the following potential major emergency scenarios in the county:

- Natural
  - Flooding/ Severe Weather;
  - Landslide/ Mine Collapse/ Rock slide;
  - Forest fires;
  - Earthquake/ Tsunami/ Volcano.
- Transportation
  - Aviation incident;
  - Rail incident;
  - Road incident;
  - Ship and Port incident;
  - Water rescue.
- Technological
  - Industrial incidents;
  - Seveso sites;
  - Loss of utilities/Infrastructure;
  - Building collapse;
  - Water contamination/pollution.
- Civil:
  - Overcrowding;
  - Epidemics/pandemics;
  - Terrorism/CBRN.

15.3.1.1 Natural

The Proposed Development is located in an upland area and has no surface water features within the EIAR site boundary. As there are no groundworks proposed as part of the Proposed Development, the risk of landslide or rockslide are also considered to be low. There are no mine shafts or forestry present within the Proposed Development, leading to no possibility of forest fire or mine collapse within the EIAR site boundary. Earthquake, tsunami and volcanic eruptions are not considered to be a risk to the Proposed Development either, due to its location inland (c. 27km from the nearest coastline), and the lack of tectonic activity ever recorded in the area. Any natural disasters associated with the Proposed Development are therefore deemed very unlikely.

15.3.1.2 Transportation

The Proposed Development will utilise the existing road network for maintenance and decommissioning activities. There will be no major traffic disruptions as there are no construction works proposed. Traffic associated with the operational and decommissioning stages of the Proposed Development is addressed in Chapter 14 of this EIAR, and is not expected to give rise to any significant impacts. Any transportation incidents associated with the Proposed Development are therefore deemed to be very unlikely.

15.3.1.3 Technological

As the Proposed Development is located in a rural area, the risk of any industrial incidents interacting with the Existing Castledockrell Wind Farm are low. In addition to this, the nearest SEVESO site to the

Proposed Development is located c. 27km southwest in New Ross, Co. Wexford. The risk of building collapse, or water contamination or pollution are deemed to be very unlikely.

15.3.1.4 Civil

As the Proposed Development is located in a rural area, the risk of civil concerns such as overcrowding, epidemics, pandemics or terrorism are deemed to be very unlikely to interact with the Proposed Development.

15.4 Risk Assessment

This section outlines the possible risks associated with the Proposed Development for the operational and decommissioning phases.

The risks have been assessed in accordance with the relevant classifications as outlined in Table 15-1 and 15-2.

As outlined in Section 15.2.3.2.2, the consequence rating assigned to each potential risk assumes that all proposed mitigation measures and safety procedures have failed to prevent the major accident and/or disaster i.e. pre-mitigation.

15.4.1 Likely Significant Effects

15.4.1.1 'Do-Nothing' Scenario

If the Proposed Development were not to proceed, 11 no. turbines on the Existing Castledockrell Wind Farm would be decommissioned in 2025 under the requirements of its current planning permission (WCC Pl. Ref. 2004/4702, ABP Ref PL26.211725) and would lose the opportunity to continue to contribute clean energy into the national grid, as would the opportunity to contribute to local, national and EU policy.

15.4.1.2 Assessment of Effects During Construction

The Existing Castledockrell Wind Farm is currently operational, and it is proposed to extend the operational phase for an additional 20 years. No construction activities will occur as part of the proposed extension of duration to the operational life of the wind farm.

15.4.1.3 Assessment of Effects During Operation

Six risks specific to the operation of the Proposed Development have been identified and presented in Table 15-4.

Table 15-4 Risk Register - Operational Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
A	**Contamination** Discharge or spillage of fuel, chemical solvents, sewage or wastewater into watercourse or percolated to groundwater	A vehicular incident on the public road involving fuel, wastewater or sewage transportation in the operational phase.

Risk ID	Potential Risk	Possible Cause
B	**Severe Weather** Risk to operational activity on site, blade or turbine damage	Extreme weather – periods of heavy rainfall, taking into account climate change and strong winds.
Potential to cause accidents and / or disasters.		
C	**Industrial Accident - Fire / Gas Explosion**	Equipment or infrastructure failure; Electrical problems; and Employee negligence.
D	**Collapse/ damage to structures**	Earthquakes; and Vehicular collisions due to driver negligence on public roads.
E	**Traffic Incident** Collisions onsite and offsite with vehicles involved in operation of Proposed Development	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented
F	**Loss of Critical Infrastructure**	Electrical fault at wind farm substation bay

15.4.1.4 Assessment of Effects During Decommissioning

Four risks specific to the decommissioning of the Proposed Development have been identified and are presented in Table 15-5.

Table 15-5 Risk Register - Decommissioning Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
G	**Severe Weather** Risk to decommissioning activity on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
H	**Flooding of site** High levels of surface water on site	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds
Potential to cause accidents and / or disasters.		

Risk ID	Potential Risk	Possible Cause
I	**Traffic Incident** Collisions onsite and offsite with vehicles involved in construction of Proposed Development	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented
J	**Contamination** Discharge or spillage of fuel, chemical solvents into watercourse or percolated to groundwater	Fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles. Drainage and seepage water resulting from decommissioning of infrastructure; Erosion of sediment from emplaced site drainage channels.

These risks have been assessed in accordance with the relevant classification (Refer to Tables 15-1 and 15-2) and the resulting risk analysis is outlined in Table 15-6. The risk register is based upon possible risks associated with the Proposed Development. As outlined in Section 15.2.3, the consequence rating assigned to each potential risk assumes that all proposed mitigation measures and safety procedures have failed to prevent major accidents and/or disasters.

Further details regarding the assigned Risk Scores, as set out in Table 15-6, are provided below the table.

15.4.1.5 Assessment of Effects – Summary

Table 15-6 Risk Assessment

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
Operational Phase								
A	Contamination	A vehicular incident on the public road or Proposed Development road network, involving fuel, wastewater or sewage transportation in the operational phase.	Damage to, or depletion of aquatic habitats and species. Release of suspended solids to surface watercourses and could result in an increase in the suspended sediment load, resulting in increased turbidity which in turn could affect the water quality and fish stocks of downstream water bodies	2	As outlined in Chapter 4, fuel will be stored on-site but in a bunded area to ensure containment and prevent spillages of fuel. No fuels, chemicals or solvents will be stored outside the confines of the site.	1	The risk of a fuel spillage or impact on surrounds drainage during the operational stage will result in a limited consequence, in that there would be 'a limited number of people affected' with 'localised effects of short duration' through the use of bunded containment areas during operation. The potential residual environmental effects are described in detail in Chapters 8 and 9 on Land, Soils & Geology and Hydrology and Hydrogeology, which conclude that there will be no significant environmental effects.	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
B	Severe Weather	Extreme weather – periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life	2	The risk of severe weather is unlikely when considering the assessment in Chapter 10 (Air & Climate) and weather conditions recorded over the last 30 years within the area	1	The risk of severe weather conditions during the operational phase will result in a minor consequence in that a small number of people will be affected should a severe weather event occur, with no fatalities and a small number of minor injuries with first aid treatment	2
C	Industrial Accident - Fire/Gas explosion	Equipment or infrastructure failure; Fuel spillage/storage Electrical problems; and Employee negligence	Illness or loss of life; Damage to, or depletion of habitats and species; and Impacts on ambient air quality.	2	As outlined in Chapter 4, fuel will not be stored on-site therefore fuel is not considered to be a significant fire risk. In accordance with Chapter 19 of the Safety, Health and Welfare at Work Act 2005 (the 2005 Act), the development shall be subject to a fire safety risk assessment which would assist in the	2	Should a fire/explosion occur at the site, a limited consequence in that there would be 'a limited number of people affected' with 'localised effects of short duration' due to the nature of the project and the lack of infrastructure or fuel storage during operation that would result in any such incident. There will be 'normal community	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					identification of any major risks of fire on site.		functioning' in the area with 'some inconvenience' Simple contamination of environment (e.g. watercourses), localised effects of short duration.	
D	Collapse/ damage to structures	Landslide/ Earthquake; and Extreme weather conditions such as flooding and storms. Vehicular collisions due to driver negligence	Injury or loss of life. Movement of subsoil/soil within the site; Sedimentation of nearby watercourse; Damage to, or depletion of aquatic habitats and species;	1	According to the Irish National Seismic Network (INSN), earthquakes measuring ~2 on the Richter Scale are "normal" in terms of seismicity in Ireland. These are known as microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. As such, buildings in Ireland are extremely unlikely to be damaged or collapse due to seismic activity. Having regard to speed limits in place within the site, it is not predicted that any collision of vehicles	1	The risk of infrastructure collapse or damage to structures during the operational phase will result in a minor consequence in that 'small number of people would be affected, with 'no fatalities and no real likelihood of any impact on any environmental receptors	1

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					and any infrastructure would result in significant damage/collapse.			
E	Traffic Incident	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented	Injury or loss of life.	3	A limited number of vehicles will be required on the site as part of the operational phase As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle collision to occur on site, 'at some time.' An unlikely risk is therefore predicted.	1	A minor consequence is predicted. Having regard to on-site speed limits and vehicular movements, a 'small number of people would be affected' should a vehicular collision occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	3
F	Loss of Critical Infrastructure	Equipment or infrastructure failure; Electrical problems; and Employee negligence Landslide/ Earthquake; and	Injury or loss of life	1	EirGrid operate the grid from National Control Centres matching electricity production to customer demand, switching from synchronous to non-synchronous where required to ensure no power outages.	2	Should a power failure occur at the Existing Castledockrell Wind Farm110kV substation, it will result in a limited number of people affected- localised effects of short duration	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		Extreme weather conditions such as flooding and storms.			The Proposed Development is connected to the national grid via the existing substation, and any shortages or failures will not impact other connections to the same substation.			
Decommissioning Phase								
G	Severe Weather	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life; Sedimentation of nearby watercourse Damage to, or depletion of aquatic habitats and species;	2	The risk of severe weather is unlikely when considering the assessment in Chapter 11 (Air and Climate) and weather conditions recorded over the last 30 years within the area. Any site works will be paused should a Status Red weather warning alert is issued by Met Eireann, as is standard practice.	1	The risk of severe weather conditions during the decommissioning phase will result in a minor consequence in that 'small number of people would be affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment'. Decommissioning will not require significant excavations works. There is no real likelihood of any	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
							impact on any environmental receptors.	
H	Flooding	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life; Sedimentation of nearby watercourse Damage to, or depletion of aquatic habitats and species;	2	The risk of flooding is considered very unlikely when taking into account the baseline assessment in Chapter 9 (Hydrology and Hydrogeology) of the EIAR recorded within the Proposed Development.	1	The risk of flooding during the decommissioning phase will result in a minor consequence in that 'small number of people would be affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment'.	2
I	Traffic Incident	Driver negligence or failure of vehicular operations on site roads. Traffic Management not implemented	Injury or loss of life.	3	A limited number of vehicles will be required on the site as part of the decommissioning phase As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle collision to occur on site, 'at some time.' An unlikely risk is therefore predicted.	1	A minor consequence is predicted. Having regard to on-site speed limits and vehicular movements, a 'small number of people would be affected' should a vehicular collision occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
J	Contamination	Fuel spillage during delivery to site. Failure of fuel storage tank or tanks in plant and machinery and vehicles. Drainage and seepage water resulting from infrastructure removal; Erosion of sediment from site drainage channels.	Damage to, or depletion of aquatic habitats and specie Release of suspended solids to surface watercourses and could result in an increase in the suspended sediment load, resulting in increased turbidity which in turn could affect the water quality and fish stocks of downstream water bodies	2	As outlined in Chapter 4, fuel will be stored on-site but in a bunded area to ensure containment and prevent spillages of fuel. No fuels, chemicals or solvents will be stored outside of the confines of the site Setback distances from sensitive hydrological features means that adequate room is maintained for the proposed drainage measures as detailed in Chapter 9	2	The risk of a fuel spillage or impact on surrounding drainage during the operational stage will result in a limited consequences in that there would be 'a limited number of people affected' with 'localised effects of short duration' through the use of bunded containment areas during operation. The potential residual environmental effects are described in Chapter 9 which concludes that there will be no significant effects.	4

The risk assessment for each of the potential risk identified are consolidated in Table 15-7 which provides their risk scores. A corresponding risk matrix is provided in Table 15-8 which is colour coded in order to provide an indication of the critical nature of each risk. As outlined in Section 15.2.3.2.2, the red zone represents high-risk scenarios, the amber zone represents the medium-risk scenarios, and the green zone represents low-risk scenarios. Further elaboration on the assigned risk ratings are provided in Sections 15.4.1.5.1 and 15.4.1.5.2 below.

Table 15-7 Risk Scores

Risk ID	Potential Risk	Likelihood Rating	Consequence Rating	Risk Score
Operational Phase				
A	Contamination	2	1	2
B	Severe Weather	2	1	2
C	Industrial Accident – Fire/Gas Explosion	2	2	4
D	Collapse/Damage to Structures	1	1	1
E	Traffic Incident	3	1	3
F	Loss of Critical Infrastructure	1	2	2
Decommissioning Phase				
G	Severe Weather	2	1	2
H	Flooding	2	1	2
I	Traffic Incident	3	1	3
J	Contamination	2	2	4

Table 15-8 Risk Matrix

		Consequence Rating				
		1.Minor	2.Limited	3. Serious	4.Very Seriou	5.Catastrophic
Likelihood Rating	5.Very Likely					
	4. Likely					
	3. Unlikely	E, I				
	2. Very Unlikely	A, B, G, H	C, J			
	1. Extremely Unlikely	D	F			

Table 15-8 presents the potential risks identified during the operation and decommissioning of the Proposed Development all of which can be classified as 'low-risk scenarios'.

The scenario with the highest risk score in terms of a major accident and/or natural disaster during the operation and decommissioning phase of the Proposed Development is identified below.

15.4.1.5.1 *Contamination During Operation and Decommissioning*

There is a potential risk of contamination from site activities during operation and decommissioning phases from potential release of hydrocarbons. The risk of contamination was given a risk score of 4 on a very precautionary basis. However, as outlined in Chapter 9: Hydrology and Hydrogeology (Section 9.4), mitigation measures are proposed and will be put in place to reduce the risk of accidental spillage and contamination of pollution risk to groundwater, surface water and associated ecosystems and to terrestrial ecology.

The risk of contamination is **very unlikely** to occur and will have **limited consequences** should it do so, representing a **low-risk scenario** during operation and decommissioning phases. The conclusions in the relevant chapters of the EIAR concluded that there will be no significant residual effects associated with this potential impact.

15.4.1.5.2 *Industrial Accident – Fires and/or Gas Explosions During Operation and Decommissioning*

There is potential risk of fires/explosions at the Proposed Development site. However, as outlined in Section 15.2, the scope of this assessment has been based on the understanding that the Proposed Development will operate in line with current best practice. Furthermore, in accordance with Chapter 19 of the Safety, Health and Welfare at Work Acts 2005 to 2014, the Proposed Development shall be subject to a fire safety risk assessment which will assist in the identification of major risks of fire on site.

Therefore, the risk of fires/explosions occurring at the Proposed Development, resulting in a major accident and/or disaster was given a risk score of 4 on a very precautionary basis. This indicates a scenario that is very unlikely to occur and having limited consequences should it do so, representing a low-risk scenario during either the operational or decommissioning phase.

15.4.2 Mitigation Measures

As outlined in Section 15.4.1, the scenario with the highest risk score in terms of the occurrence of major accidents and/or disasters was identified as 'Contamination' of the Proposed Development site and risk of 'Industrial Accidents – Fire/Gas Explosions' during the operation and decommissioning phases.

The existing Castledockrell Wind Farm was designed and built in line with the best practice measures as set out in its original planning application and Environmental Impact Statement (EIS), and as such mitigation against the risk of major accidents and/or disasters was embedded through the design.

15.4.2.1 Mitigation – Contamination During Operation and Decommissioning

Potential effects associated with contamination during operation and decommissioning are addressed fully in Chapter 9 Hydrology and Hydrogeology. The mitigation measures outlined in Chapter 9 to protect environmental receptors as well as the procedures and measures described in the Decommissioning Plan (Appendix 4-4) to protect environmental receptors will ensure that the risk from these sources is low.

15.4.2.2 Mitigation – Fire/Explosions During Operation

The Proposed Development will also be subject to a fire safety risk assessment in accordance with Chapter 19 of the Safety, Health and Welfare at Work Acts 2005 to 2014, which will assist in the identification of any major risks of fire on site, and mitigation of the same during operation.

15.4.3 Residual Effects

The risk of a major accident and/or disaster during the operation and decommissioning of the Proposed Development is considered low, in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). It is considered that when the mitigation and monitoring measures outlined in the EIAR and Decommissioning Plan are implemented and adhered to, there will not be significant residual effect(s) associated with the operational and decommissioning phases of the Proposed Development.

15.4.4 Assessment of Cumulative Effects

15.4.4.1 Cumulative Impact Assessment

A search in relation to projects that may have the potential to result in a cumulative impact with the project on the environment was carried out as part of the EIAR. The Proposed Development has been considered, cumulatively with the projects set out in Chapter 2, Section 2.7 of the EIAR.

Following a detailed assessment of the potential for any further impacts when considered cumulatively with any or all of the projects, the Proposed Development, with mitigation measures in place, was found to have no potential for significant cumulative increase in the vulnerability of the Proposed Development to major accidents and/or natural disasters. This is based on the low risk associated with the Proposed Development described in this chapter of the EIAR, and a review of the surrounding land uses and projects existing or intended in the surrounding area.

16. INTERACTION OF EFFECTS

16.1 Introduction

The preceding Chapters 5 to 14 of this Environmental Impact Assessment Report (EIAR) identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity (Flora and Fauna, including Aquatic Ecology) Ornithology (Birds), Land, Soils and Geology, Water (Hydrology and Hydrogeology), Air and Climate, Noise and Vibration, Cultural Heritage (Archaeological, Architectural and Cultural Heritage), Landscape and Visual, and Material Assets (Roads and Traffic, Telecommunications and Aviation), as a result of the Proposed Development as described in Chapter 4 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 improve them or have a neutral effect.

A matrix is presented in Table 16-1 below to identify potential interactions of impacts between the various aspects of the environment already assessed in this EIAR. The matrix highlights the potential for the occurrence of positive, neutral or negative effects during the Operational phase (O) and the Decommissioning phase (D) of the Proposed Development.

As the Proposed Development does not include any new construction works, related construction phase effects are not included. It is considered that the potential effects during the decommissioning phase will be similar to typical wind farm construction phase effects, but of a lesser magnitude, and these have been included in the interaction's matrix below. 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.

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 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 16.2 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 16.2 below.

16.1.1 Statement of Authority

This section of the EIAR has been prepared by Gráinne Griffin and reviewed by Ellen Costello and Sean Creeden of MKO. Gráinne is an Environmental Scientist with MKO with over 4 years' experience in the environmental consultancy sector, which included ecological roles as a marine mammal observer and an aerial survey operator. Gráinne holds a BSc in Applied Freshwater & Marine Biology from ATU Galway and a MSc in Environmental Leadership from the University of Galway. Gráinne's key strengths and areas of expertise include managing and researching reports in areas of environmental conservation and policy, ecology, renewable energy, marine spatial planning, and climate action. Gráinne has experience in report writing, including Appropriate Assessments, Natura Impact Statements, feasibility studies and EIA screening reports. Gráinne also holds skills in environmental restoration project research and design. Since joining MKO Gráinne has been involved in coordinating environmental site work for a wide range of developments, assisting in stakeholder engagement, scoping exercises, organising and attending pre-application meetings with local authorities and An Bord Pleanála. Within MKO, Gráinne has been assisting managers in the coordination and production of

EIARs for largescale SID wind energy developments. Gráinne also holds a membership with the Chartered Institute of Ecology and Environmental Management (CIEEM). Ellen Costello is a Senior Environmental Scientist with MKO with over five years of experience in private consultancy. Ellen holds a BSc (Hons) in Earth Science, and a MSc (Hons) in Climate Change: Integrated Environmental and Social Science Aspects where she focused her studies on renewable energy development in Europe and its implications on environment and society. Ellen's key strengths and expertise are Environmental Protection and Management, Environmental Impact Statements, Project Management, and GIS Mapping and Modelling. Since joining MKO, Ellen has been involved in a range of renewable energy infrastructure projects. In her role as a project manager, Ellen 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. Sean is an Associate Director in the Environment Team at MKO. He oversees 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. He is a member of the MKO senior management team responsible for developing the business, mentoring team members, fostering a positive culture and promoting continuous employee professional development. 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.

Table 16-1 Interaction Matrix: Potential for Interacting Impacts

EIAR Chapter Title	Phase	Population & Human Health	Biodiversity	Birds	Land, Soils & Geology	Water	Air & Climate	Noise & Vibration	Landscape & Visual	Cultural Heritage	Material Assets
Population & Human Health	O										
	D										
Biodiversity	O										
	D										
Birds	O										
	D										
Land, Soils & Geology	O										
	D										
Water	O										
	D										
Air & Climate	O										
	D										
Noise & Vibration	O										
	D										
Landscape & Visual	O										
	D										
Cultural Heritage	O										
	D										
Material Assets	O										
	D										

Notes: **O** = Operational Phase **D** = Decommissioning Phase

No Interacting Effect: Positive Effect:

Neutral Effect: Negative Effect:

16.2 Impact Interactions

16.2.1 Population and Human Health

Population and Human Health, Land, Soils and Geology, and Air and Climate

The potential for excavation and movement of soils during the decommissioning phase of the Proposed Development may lead to generation of dust emissions which, consequently, have the potential to have a **short-term, imperceptible, negative effect** on local air quality and human health. Mitigation measures to reduce dust emissions generated during the decommissioning phase of the Proposed Development are presented in the Decommissioning Plan as outlined in Appendix 4-4 and Chapter 10: Air and Climate.

Population and Human Health, and Water

As described in Chapter 9: Water, the operational phase of the Proposed Development does not involve any alterations to the site drainage or otherwise and will not give rise to significant impacts to the water environment.

The decommissioning phase of the Proposed Development, in 2045, has the potential to give rise to some limited water pollution as a result of likely on-site activities (earthworks, use of hydrocarbons for plant and machinery), and any water pollution could have a potential significant negative effect on the health of other users of that water within the same catchment. Mitigation measures are presented in Chapter 9 to minimise the potential of any such issues occurring.

Population and Human Health, Air and Climate, and Noise and Vibration

As identified in Chapter 5: Population and Human Health of this EIAR, the operational phase has the potential to create long-term, imperceptible residual effects related to health and safety during the operational life of the Proposed Development. Mitigation measures to remove any potential health and safety impacts from the wind farm operation are provided in Chapter 5 of this EIAR.

During the operational and decommissioning phases, the Proposed Development has the potential to generate noise, but as identified in Chapter 11: Noise and Vibration, the potential effects on population and human health are not significant, with noise levels at the nearest receptors measured at orders of magnitude below the level at which risk of hearing damage, or indeed negative health effects are possible. Mitigation measures and best practices to be adopted concerning noise are presented in Chapter 11.

During the operational phase, the energy generated by the Proposed Development will offset energy and the associated emissions of greenhouse gases (GHGs) from electricity-generating stations dependent on fossil fuels, thereby having a positive effect on air quality and climate (i.e. slowing the rate of global warming). In doing so, the Proposed Development will have a **long-term slight positive effect** on human health by reducing the dependence on fossil fuels and harmful greenhouse gasses when compared to the 'Do-Nothing' scenario (i.e. decommissioning of the existing Castledockrell Wind Farm and the existing Castledockrell 110kV Substation in 2025).

Population and Human Health, and Landscape and Visual

The Proposed Development is an existing wind farm, first commissioned in 2011, and no significant changes to the wind turbines have been carried out.

The existing Castledockrell Wind Farm and 110kV Substation have been in operation for approx.14 years and therefore forms part of the existing landscape setting. The Proposed Development will remain aligned with the future landscape and visual designations and policies guiding the development of Co. Wexford. Overall, the Proposed Development is deemed to have 'Slight' Long-Term landscape effects on these lands in which is located. The scale, siting and design of the turbines is considered appropriate, as the turbines do not detract from the scenic amenity views and are readily absorbed into the surrounding landscape. The landscape and visual impact assessment of the Proposed Development, included as Chapter 12 of this EIAR, where Photographic visualisations were used to assess the visual effects arising as a result of the Proposed Development from 5 No. viewpoint locations. The significance of the residual visual effect was not considered to be "Profound" or "Very Significant" at any of the 5 viewpoint locations. A residual visual effect of 'Significant' was deemed to arise at one of the viewpoint locations (VP04). In this case a residual visual effect of 'Significant' is due to the proximity of the visual receptor (<300m from the proposed turbine). A residual effect of 'Moderate' was deemed to arise at one of the five viewpoints. All other viewpoints were assessed as resulting in "Slight" residual visual effects.

Population and Human Health, and Material Assets

In Chapter 14 Material Assets of this EIAR discusses how the operational and decommissioning phases of the Proposed Development will impact traffic volumes. The operational phase will have **long term, imperceptible, neutral** effect on traffic and transportation and will not give rise to any significant effects upon the local road network or road users.

The decommissioning phase of the Proposed Development will likely result in a residual impact to other road users that is **slight, temporary, and negative** in effect. As noted in Section 4.7 of Chapter 4: Description, reinstatement proposals for a wind farm are typically made far in advance, so within the proposed 20-year extension of operation of the site, technological advances and preferred approaches to reinstatement are likely to change. Therefore, in order to prevent limiting options too far in advance of actual decommissioning, the final decommissioning plan will be agreed with the Local Authority at least three months prior to decommissioning of the Proposed Development.

16.2.2 Biodiversity (including Aquatic Ecology)

Biodiversity, and Land, Soils and Geology

No excavations, groundworks or other disturbance to land or soils is included as part of the operational phase of the Proposed Development. Therefore, no disturbance to flora or fauna related to land, soils or geology is likely during the proposed continued operation of the wind farm and onsite substation.

The decommissioning phase of the Proposed Development may involve limited excavations and groundworks around the turbines, in order to return the site to beneficial use as agricultural land. Chapters 6: Biodiversity, Birds, Flora & Fauna provides a full assessment of the likely effects and impacts upon habitats including designated sites, bats and other mammals and concludes that the Proposed Development is unlikely to give rise to significant effects on the ecological receptors.

Biodiversity and Water

Chapter 6 of this EIAR assesses the potential impacts of the operational phase upon aquatic ecology and concluded that site activities during the operational phase of the Proposed Development have a low potential to give rise to water pollution incidents, when the proposed measures to protect water quality are implemented, as outlined in Chapters 4, 6, 8 and 9 of this EIAR. Potential impacts have therefore been assessed as **not significant** and at worst there may be **localised temporary, slight negative effects** associated with indirect effects.