

Sure Partners Limited

ARKLOW BANK WIND PARK  
PHASE 2  
**ONSHORE GRID  
INFRASTRUCTURE**

**ENVIRONMENTAL IMPACT  
ASSESSMENT REPORT**

**VOLUME II**

**Chapter 20** Inter-related Effects

ARUP

 **sse**  
Renewables

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## 20 Inter-related Effects

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### 20.1 Introduction

The EIAR has considered and assessed inter-related effects arising from the construction, operation and decommissioning of the proposed development.

Inter-related effects (i.e. interactions or interactive effects), specifically refer to any direct or indirect effects caused by the interaction of environmental factors as outlined in Part 1 of Article 3 of the EIA Directive which states:

*“The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*

- (a) population and human health;*
- (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*
- (c) land, soil, water, air and climate;*
- (d) material assets, cultural heritage and the landscape;*
- (e) the interaction between the factors referred to in points (a) to (d).”*

A workshop was held in December 2020 to facilitate discussion between environmental topic leads and enable them to understand the interactions and make recommendations to mitigate significant effects (including inter-related effects) where practicable.

### 20.2 Assessment Methodology

The assessment of inter-related effects has considered likely significant effects that may arise during construction, operation and decommissioning (where relevant) of the proposed development, before and after mitigation measures are applied.

The assessment of inter-related effects has been undertaken on a qualitative basis by each of the environmental topic leads based on best scientific knowledge.

The approach has aligned with the overarching EIA guidance, including Environmental Protection Agency (2017) *Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports* and European Commission (2017) *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*, as outlined in **Chapter 3 EIA Methodology** as well as per the methodology adopted for each environmental factor as described in **Chapters 7 – 19**.

The interactive effects have been summarised in a matrix and described in text below. The residual effects have also been summarised in text.

## 20.3 Interactive Effects Matrix

A summary of the interactive effects is presented in the matrix in **Table 20.1**.

The effects matrix examines the potential for the environmental effect in the left-hand column to have an interactive or indirect effect on the environmental medium listed in the top row of the matrix.

If there is the potential for likely significant effects during construction or decommissioning, this is indicated by the 'C' column in the matrix. The 'O' column in the matrix indicates the potential for likely significant effects during operation. If there is considered to be no potential for an effect, this is indicated by '-' in the matrix.

The purpose of the matrix in **Table 20.1** is to summarise likely inter-related effects of significance. Effects and the description of significance are dealt with in the most relevant chapter (Refer to **Chapters 7 – 19** for further detail).

**Table 20.1: Inter-related effects summary matrix**

	Air Quality		Climate		Land and Soils		Water		Noise and Vibration		Biodiversity		Traffic and Transport		Landscape and Visual		Archaeology, Architectural and Cultural Heritage		Resource and Waste Management		Material Assets		Population and Human Health		Major Accidents and Natural Disasters		
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	
Construction/Operation	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	
<b>Air Quality</b>			-	-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	✓	-	-	-	
<b>Climate</b>	-	-			-	-	-	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	
<b>Land and Soils</b>	✓	-	-	-			✓	-	✓	-	-	-	✓	-	-	-	-	-	✓	-	-	-	-	-	-	-	
<b>Water</b>	-	-	-	-	-	-			-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Noise and Vibration</b>	-	-	-	-	-	-	-	-			✓	-	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-	
<b>Biodiversity</b>	-	-	-	-	-	-	-	-	-	-			-	-	-	-	-	-	-	-	-	-	✓	-	-	-	
<b>Traffic and Transport</b>	✓	-	✓	-	✓	✓	-	-	✓	-	✓	-			-	-	✓	-	-	-	-	-	✓	-	-	-	
<b>Landscape and Visual</b>	-	-	-	-	-	-	-	-	-	-	✓	✓	-	-			-	-	-	-	-	-	✓	✓	-	-	
<b>Archaeology Architectural and Cultural Heritage</b>	-	-	-	-	✓	-	-	-	-	-	-	-	-	-	✓	-			-	-	-	-	-	-	-	-	
<b>Resource and Waste Management</b>	-	-	✓	-	-	-	-	-	-	-	-	-	✓	-	-	-	-	-			-	-	-	-	-	-	
<b>Material Assets</b>	-	-	-	✓	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓			✓	✓	-	-
<b>Population and Human Health</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	✓	✓	✓	✓			-	-	
<b>Major Accidents and Natural Disasters</b>	✓	✓	✓	✓	-	-	-	-	-	-	✓	✓	-	-	-	-	-	-	-	-	✓	✓	✓	✓			

## 20.4 Inter-Related Effects

The potential environmental interactions and indirect effects arising from the proposed development, indicated in the matrix, are summarised in the following sections.

### 20.4.1 Air Quality and Biodiversity

A potential interaction between air quality and biodiversity during the construction and decommissioning phases of the proposed development is identified. Dust generated during the construction phase has the potential to affect habitats at the landfall, along the cable route and close to the substation site. Emissions to air from construction traffic, and the consequential impact on local air quality, has the potential to have a negative effect on local biodiversity. Even taking a worst-case scenario, the effects to biodiversity will be short term and negligible. The emissions to air from the proposed development during operation will be insignificant, therefore there will be an insignificant effect on biodiversity.

The effects of emissions to air from the proposed development on air quality is assessed in **Chapter 7 Air Quality**. The effects of the proposed development on biodiversity are assessed in **Chapter 12 Biodiversity**.

Following the implementation of the proposed mitigation measures, no significant residual negative effects to air quality and, consequently, biodiversity are expected due to the proposed development.

### 20.4.2 Air Quality and Population and Human Health

A potential interaction between air quality and population and human health during the construction phase of the proposed development is identified. Dust and other emissions generated during the construction works have the potential to affect properties and commercial facilities in the vicinity of the proposed development, as well as the homeowners, employees, visitors and customers who frequent these areas. However, as the air quality effects during construction are expected to be minor, short term and negative, the resulting effects to population and human health during the construction phase are predicted to be imperceptible. The emissions to air from the proposed development during operation will be insignificant, therefore no significant effects to population and human health are predicted.

The effects of emissions to air, during the construction phase, on air quality and the consequent effect on population and human health is assessed in **Chapter 7 Air Quality** and **Chapter 18 Population and Human Health**.

Following the implementation of the proposed mitigation measures, no significant residual effects on air quality and, consequently, population and human health, due to the proposed development are expected.

### 20.4.3 Climate and Biodiversity

A potential interaction of climate effects and biodiversity during the operation of the proposed development is identified.

The operation of the overall Project will generate renewable energy, which is expected to displace fossil fuel power generation. The reduced emissions of pollutants and greenhouse gases will have a beneficial effect to biodiversity at a wider scale, as climate change is one of the key drivers of biodiversity loss. However, at a local level the effects to climate will not result in a significant measurable effect to biodiversity.

**Chapter 12 Biodiversity** considers the potential effects to local biodiversity. The effects of carbon emissions from the proposed development on climate are assessed in **Chapter 8 Climate**.

Given the scale of the proposed development, there are no residual effects to biodiversity from climate expected as result of the proposed development.

### 20.4.4 Climate and Population and Human Health

A potential interaction between climate and population and human health during the construction phase of the proposed development is identified. Embodied carbon associated with the construction phase and the consequential impact on climate, has the potential to have a negative impact on population and human health. However, given that the embodied carbon associated with the construction of the proposed development is not significant, the resulting effect on population and human health is expected to be not significant.

The beneficial effect of the operation of the Project on climate will offset potential negative effects associated with the construction phase. In operation, the proposed development will enable increased levels of renewable energy, with consequent proportional reductions in the generation of power using fossil fuels. The associated reduction in carbon emissions will have a significant long-term positive effect on population and human health.

The effects of carbon emissions from the proposed development on climate are assessed in **Chapter 8 Climate**. The effects of the proposed development on population and human health are addressed in **Chapter 18 Population and Human Health**.

Over the lifespan of the proposed development, a significant long-term positive effect on climate is expected, with a resulting significant, long-term, positive effect on population and human health.

### 20.4.5 Land and Soils and Air Quality

A potential interaction between land and soils and air quality during the construction phase of the proposed development is identified.

Excavations and associated activities such as rock breaking and rock crushing, the need for which is dependent on the nature of the land and soils, have the potential to create dust and emissions to air from plant and thus have a minor, short-term, negative effect on air quality.

The effects of the proposed development on air quality are assessed in **Chapter 7 Air Quality**. The effects of the proposed development on land and soils are assessed in **Chapter 9 Land and Soils**.

Following the implementation of the proposed mitigation measures, no significant residual effect on air quality is expected.

#### 20.4.6 Land and Soils and Water

A potential interaction between land and soils and water during the construction phase of the proposed development is identified. Earthworks during the construction phase have the potential to have a slight, short-term, negative effect on water quality due to activities which could cause sediment-laden rainwater runoff.

The effects of the proposed development on water quality are assessed in **Chapter 10 Water**. The effects of the proposed development on land and soils are assessed in **Chapter 9 Land and Soils**.

Following the implementation of the proposed mitigation measures, no significant residual effect on water quality is expected.

#### 20.4.7 Land and Soils and Noise and Vibration

A potential interaction between land and soils and noise and vibration during the construction phase of the proposed development is identified. Excavations, piling and associated activities such as rock breaking and rock crushing, the need for which is dependent on the nature of the land and soils, will generate noise and vibration which have the potential to have a short-term, imperceptible, negative effect on the noise and vibration environment.

The noise and vibration effects of the proposed development are assessed in **Chapter 11 Noise and Vibration**. The effects of the proposed development on land and soils are assessed in **Chapter 9 Land and Soils**.

Following the implementation of the proposed mitigation measures, no significant residual noise and vibration effects are expected.

#### 20.4.8 Land and Soils and Traffic and Transport

A potential interaction between land and soils and traffic and transport during the construction phase of the proposed development is identified.



Earthworks during the construction phase have the potential to affect traffic and transport as there will be a portion of excavated material that is not re-used on site that will be transported to a suitable licensed facility for disposal or recovery, and/or will have potential for reuse on another construction site. This will result in slight, short term, negative effects on traffic.

The effects of the proposed development on traffic and transport are assessed in **Chapter 13** *Traffic and Transport*.

Following the implementation of the proposed mitigation measures, no significant residual effect on traffic and transport is expected.

#### 20.4.9 Land and Soils and Resource and Waste Management

Excavations during the construction phase have the potential to affect resource and waste management as the earthworks will result in a significant quantity of material that will be reused on site, as well as smaller amounts of material that will require disposal or recovery at suitably licenced facility, and/or will have potential for reuse on another construction site. This will result in slight, negative and short-term effects to resource and waste management during the construction phase due to an increased demand on waste recovery and/or disposal sites. There will be no earthworks associated with the operational phase, therefore, the effects on resource and waste management are expected to be not significant during the operational phase.

The effects of the proposed development on land and soils as a resource are assessed in **Chapter 9** *Land and Soils* and **Chapter 16** *Resource and Waste Management*.

The residual effects of the proposed development on resource and waste management during the construction phase, following the implementation of mitigation measures are considered to be minor, negative and short term.

#### 20.4.10 Water and Biodiversity

Negative effects on water quality and changes to the hydrological regime, arising from the construction, operation and decommissioning of the project, have the potential to have short term, negative but not significant effects on aquatic biodiversity.

The effects of the construction phase on biodiversity are assessed in **Chapter 12** *Biodiversity*. The effects of the proposed development on water are assessed in **Chapter 10** *Water*.

Following the implementation of the proposed mitigation measures, no significant residual effects on water and, consequently, on biodiversity due to the proposed development are expected.

#### 20.4.11 Noise and Vibration and Biodiversity

There is a potential interaction between noise and vibration and biodiversity during the construction and decommissioning phases.

Noise emissions from construction and decommissioning activities along with vibration effects at the horizontal directional drilling (HDD) locations, could result in short-term, negative, but not significant effects. This will result in imperceptible effects on biodiversity.

The noise generated by the proposed development during operation is not expected to have an effect on biodiversity. No vibration will be generated in the operational phase.

The effects of the construction and decommissioning noise emissions on species are assessed in **Chapter 12 Biodiversity**. The effects of the proposed development on noise and vibration are assessed in **Chapter 11 Noise and Vibration**.

Following the implementation of the proposed mitigation measures, no significant residual effects on species due to noise or vibration effects from the proposed development are expected.

#### 20.4.12 Noise and Vibration and Population and Human Health

A potential interaction between noise and vibration and population and human health during the construction, operational and decommissioning phases of the proposed development is identified.

Noise and vibration generated from construction and decommissioning activities, and the resulting traffic, has the potential to be a nuisance to nearby residential receptors and the local population. The noise and vibration effects will result in a short-term, negative but not significant effect to population and human health.

Noise from the substation during the operational phase also has the potential to impact on a number of nearby residential receptors, although the long term negative effect is considered not significant.

The effects of noise and vibrations from the construction, decommissioning and operational phases on sensitive receptors are assessed in **Chapter 11 Noise and Vibration**. The effects to population and human health are assessed in **Chapter 18 Population and Human Health**.

#### 20.4.13 Biodiversity and Population and Human Health

A potential interaction between biodiversity and population and human health has been identified. A negative effect on biodiversity, when habitats are removed during the construction phase, has the potential to have a negative, but not significant effect on residential and recreational amenity, and enjoyment of the local area.

The effects of the construction phase on biodiversity are assessed in **Chapter 12 Biodiversity**. The effects of construction on the population in the local area are addressed in **Chapter 18 Population and Human Health**.

Following the implementation of the proposed mitigation measures and biodiversity enhancement planting, no significant residual effects on biodiversity due to the proposed development are expected. Consequently, a resulting effect on population and human health, is not expected.

#### 20.4.14 Traffic and Transport and Air Quality

The generation of traffic during the construction phase of the proposed development has the potential to have a negative but not significant effect on air quality. Less traffic will be generated during the decommissioning phase, therefore the potential to have a significant interaction with air quality is less likely. Traffic levels generated by maintenance vehicles during the operational phase will not be significant enough to have a detectable effect on air quality.

The effects on traffic and transport due to the proposed development are assessed in **Chapter 13** *Traffic and Transport*. The effects of the traffic generated by the development on air quality are assessed in **Chapter 7** *Air Quality*.

Following the implementation of the proposed mitigation measures, no significant residual effects on air quality due to emissions from construction traffic are expected.

#### 20.4.15 Traffic and Transport and Climate

The transportation of construction material to and from site has the potential to affect the embodied carbon of the construction materials and thus has the potential to affect climate. There will be less materials requiring transportation to and from site during the decommissioning phase, and the potential to have a notable interaction with climate is less. Materials transport required during the operational phase will not be significant enough to have a detectable effect on climate.

The effects on traffic and transport due to the proposed development are assessed in **Chapter 13** *Traffic and Transport*. The effects of the traffic generated by the development on climate are assessed in **Chapter 8** *Climate*.

Following the implementation of the proposed mitigation measures, no significant residual effects on climate due to embodied carbon from material transport are expected.

#### 20.4.16 Traffic and Transport and Land and Soils

The generation of traffic during the construction and operational phases of the proposed development has the potential to affect land and soils. Construction traffic along the cable route requires short term and permanent access tracks in order to install the cables and for cable monitoring and maintenance. Traffic generated by maintenance vehicles during the operational phase will require permanent access tracks at points to access the cable route. The short term and permanent access tracks require excavation and resurfacing which has the potential to affect land and soils. The resulting effects to land and soils are expected to be imperceptible.

The effects on traffic and transport due to the proposed development are assessed in **Chapter 13 Traffic and Transport**. The effects of the access tracks on land and soils are assessed in **Chapter 9 Land and Soils**.

Following the implementation of the proposed mitigation measures, no significant negative residual effects on land and soils from construction and operational traffic are expected.

#### 20.4.17 Traffic and Transport and Noise and Vibration

The generation of traffic during the construction and decommissioning phases of the proposed development has the potential to generate negative, but not significant, effects on noise and vibration. Traffic levels generated by maintenance vehicles during the operational phase will not be significant enough to have a detectable effect on noise and vibration.

The effects on traffic and transport due to the proposed development are assessed in **Chapter 13 Traffic and Transport**. The effects of the traffic generated by the development on noise levels at the nearest sensitive receptors are assessed in **Chapter 11 Noise and Vibration**.

Following the implementation of the proposed mitigation measures, no significant residual noise or vibration effects from traffic are expected.

#### 20.4.18 Traffic and Transport and Biodiversity

The generation of traffic during the construction and decommissioning phases of the proposed development has the potential to generate noise, which in turn would have the potential to have a negative but not significant effect on biodiversity. Traffic levels generated by maintenance vehicles during the operational phase will not be significant enough to have a detectable effect on noise levels and, consequently, biodiversity.

The effects on traffic and transport due to the proposed development are assessed in **Chapter 13 Traffic and Transport**. The effects of the construction and decommissioning noise on species are assessed in **Chapter 12 Biodiversity**.

Following the implementation of the proposed mitigation measures, no significant residual effects on biodiversity due to noise from construction traffic are expected.

#### 20.4.19 Traffic and Transport and Archaeology, Architectural and Cultural Heritage

The generation of traffic during the construction phase of the proposed development has the potential to affect archaeology, architectural and cultural heritage.

The short term and permanent access tracks needed for construction and maintenance vehicles require excavation and resurfacing along the cable route within greenfield lands which has the potential to uncover previously un-recorded archaeological features during site clearance and excavation. This could result in moderate to profoundly negative effects dependant on the nature, extent and significance of any such archaeological remains.

The effects on traffic and transport due to the proposed development are assessed in **Chapter 13** *Traffic and Transport*.

The effects of the excavation for the access tracks along the cable route on archaeology, architectural and cultural heritage are assessed in **Chapter 15** *Archaeology, Architectural and Cultural Heritage*.

The proposed development is not expected to have a significant effect on known archaeology, architectural or cultural heritage. However, there is a possibility that unknown archaeological sites will be uncovered during ground disturbance during site preparation for access tracks. Following the implementation of the above mitigation measures, no significant negative residual effects on the archaeological, architectural, or cultural heritage resource as a result of the construction of access tracks are expected.

#### 20.4.20 Traffic and Transport and Population and Human Health

The generation of traffic during the construction and decommissioning phases of the proposed development has the potential to indirectly affect population and human health. Traffic flows on the public road network will be disrupted during the construction works. Short term, negative, but not significant effects on road users, including pedestrian movements, will arise because of this disruption. The emissions to air, of the traffic generated by the proposed development, have the potential to have a negative, but not significant effect on human health.

The effects of the traffic generated by the development on local road users is assessed in **Chapter 13** *Traffic and Transport*. The effects of the traffic generated by the development on air quality and the potential consequent effect on human health is assessed in **Chapter 7** *Air Quality*. The effects of traffic and transport on the population in the local area are addressed in **Chapter 18** *Population and Human Health*.

Following the implementation of mitigation measures there will be no significant residual effects on population and human health in the area.

#### 20.4.21 Landscape and Visual and Biodiversity

A potential interaction between landscape and visual and biodiversity has been identified. A negative effect on biodiversity, when habitats are removed during the construction phase, has the potential to have a negative, but not significant effect on biodiversity. Biodiversity enhancement planting will be provided at the landfall which will have a positive effect to landscape and visual character as well as ensuring no net-loss of habitat as a result of the proposed development.

The effects of the proposed development on landscape, and the removal of vegetation, are assessed in **Chapter 14** *Landscape and Visual*. The effects of the construction phase on biodiversity are assessed in **Chapter 12** *Biodiversity*.

Following the implementation of the proposed mitigation measures and the biodiversity enhancement planting, no significant residual effects on biodiversity due to the proposed development are expected.

## 20.4.22 Landscape and Visual and Population and Human Health

A potential interaction between landscape and visual effects and population and human health during both the construction and operational phase of the proposed development is identified.

Activities at the substation site, along the cable route and at the landfall site have the potential to have a short term, negative minor to moderate effect on visual amenity, with a consequent short term, negative but not significant effect on the residential and recreational amenity of the receptor population. During the operational phase, the proposed substation and proposed towers for the NETN connection have the potential to have a negative effect on visual amenity, with a consequential negative, but not significant effect on the residential and recreational amenity of nearby residential receptors and the local population.

The effects of the proposed development on landscape, visual amenity and local population receptors are assessed in **Chapter 14** *Landscape and Visual*. The effects of landscape and visual on the population in the local area are addressed in **Chapter 18** *Population and Human Health*.

Following the implementation of mitigation measures there will be no significant residual effects on population and human health in the area.

## 20.4.23 Archaeology, Architectural and Cultural Heritage and Land and Soils

There is a potential interaction between archaeology, architectural and cultural heritage and land and soils during the construction phase. The archaeological mitigation measures require test trenching in advance of the construction of the proposed development. It may also be necessary to excavate a significant amount of topsoil layer to resolve previously un-recorded archaeological features, encountered during site clearance and excavation. Both the test trenching and archaeological excavations would have a negative but not significant effect on land and soils.

The effects of the proposed development on archaeology, architectural and cultural heritage are addressed in **Chapter 15** *Archaeology, Architectural and Cultural Heritage*. The effects of the proposed development on land and soils are assessed in **Chapter 9** *Land and Soils*.

The proposed development is not expected to have a significant effect on known archaeology, architectural or cultural heritage. The test trenching and the excavation of any unknown archaeological sites, uncovered during ground disturbance, are not expected to have a significant a negative effect on land and soils.

## 20.4.24 Archaeology, Architectural and Cultural Heritage and Landscape and Visual

There is a potential interaction between archaeology, architectural and cultural heritage and landscape and visual amenity during the construction phase.



The archaeological mitigation measures require test trenching in advance of the construction of the proposed development. It may also be necessary to remove a significant area of surface vegetation and the topsoil layer to resolve previously un-recorded archaeological features, encountered during site clearance and excavation.

Both the test trenching and archaeological excavations could have a short term negative effect on the landscape and visual amenity.

The effects of the proposed development on archaeology, architectural and cultural heritage are addressed in **Chapter 15** *Archaeology, Architectural and Cultural Heritage*. The effects of any disturbance of vegetation due to archaeological testing or excavation has been addressed in **Chapter 14** *Landscape and Visual*.

The proposed development is not expected to have a significant effect on known archaeology, architectural or cultural heritage. The test trenching and excavation of any unknown archaeological sites, uncovered during ground disturbance, are not expected to have a significant effect on landscape and visual amenity.

#### 20.4.25 Resource and Waste Management and Climate

A potential interaction between resource and waste management and climate effects during the construction and decommissioning phases of the proposed development is identified. The resources required and the waste generated from site have embodied carbon associated with the construction phase with a consequential negative but not significant effect on climate.

The effects on resource and waste management from the proposed development are assessed in **Chapter 16** *Resource and Waste Management*. The effects of resource and waste management on carbon emissions from the proposed development are assessed in **Chapter 8** *Climate*.

There are no significant residual negative effects on climate expected due to the proposed development.

#### 20.4.26 Resource and Waste Management and Traffic and Transport

A potential interaction between resource and waste management and traffic and transport effects during the construction and decommissioning phases of the proposed development is identified.

The transportation of resources and waste to and from site has the potential to affect traffic and transport during the construction phase. The earthworks will result in material requiring transport for disposal or recovery at a suitably licenced facility, and/or will have potential for reuse on another construction site.

There will be less resources and waste requiring transportation to and from site during the decommissioning phase, and the potential to have a notable interaction with traffic and transport is less.

Materials transport required during the operational phase will not be significant enough to have a notable effect on traffic and transport.

The effects to resource and waste management from the proposed development are assessed in **Chapter 16 Resource and Waste Management**. The effects of resource and waste management on traffic and transport from the proposed development are assessed in **Chapter 13 Traffic and Transport**.

Following the implementation of the proposed mitigation measures, no significant residual negative effects on traffic and transport are expected due to the proposed development.

#### 20.4.27 Material Assets and Climate

A potential interaction between material assets and effects on climate during the operational phase of the proposed development is identified.

The operation of the proposed development will enable the supply of additional renewable energy. The indirect positive effect will be to reduce carbon emissions from fossil fuels by reducing the reliance on non-renewable energy sources. This will reduce the effects of climate change.

The effects of the proposed development on material assets are addressed in **Chapter 17 Material Assets**. The effects of the proposed development on climate are addressed in **Chapter 8 Climate**.

There is an indirect significant positive effect on climate predicted during the operational phase of the proposed development

#### 20.4.28 Material Assets and Resource and Waste Management

A potential interaction between material assets and resource consumption, during the operational phase of the proposed development, is identified.

The operation of the proposed development will increase the supply of renewable energy. The indirect positive effect will be to reduce fuel consumption in fossil fuel power plants, and the generation of waste by solid fuel power plants.

The effects of the proposed development on material assets are addressed in **Chapter 17 Material Assets**. The effects on resources and waste management are addressed in **Chapter 16 Resource and Waste Management**.

The residual effects of the proposed development on resource and waste management during the construction phase, following the implementation of mitigation measures are considered to be minor, negative and short term. The residual effect on resource and waste management during the operational phase is expected to be imperceptible.

#### 20.4.29 Material Assets and Population and Human Health

A potential interaction between material assets and population and human health during construction may arise in the case of the interaction with existing utility infrastructure, which could have a short-term negative effect on the local population should supply be affected as a result of construction works.



A potential interaction between material assets and population and human health during the operational phase of the proposed development is identified.

The proposed development will provide an additional renewable electricity supply in Ireland. This will provide economic and social benefits to electricity consumers, and thus have a positive effect on population and human health.

The effects on material assets are addressed in **Chapter 17 *Material Assets***. The direct and indirect economic and social benefits are addressed in **Chapter 18 *Population and Human Health***.

Following the implementation of the proposed mitigation measures, no significant residual effect on population and human health is expected during the construction phase. The proposed development will result in significant long-term positive effects on population and human health during the operational phase through additional renewable energy supply and economic benefits to the community.

#### **20.4.30 Population and Human Health and Resource and Waste Management**

A potential interaction between population and human health and resource and waste management during the construction, operational and decommissioning phases of the proposed development is identified.

The construction, operation and decommissioning phases of the proposed development will create employment, which will give rise to greater use of resources and greater waste generation in the region. This will result in slight, negative and short-term effects to resource and waste management during the construction phase due to an increased demand on waste recovery and/or disposal sites. The effects on resource and waste management during the operational phase will be negligible.

Refer to **Chapter 18 *Population and Human Health*** for a description of employment creation. The effects on natural resources and waste management are addressed in **Chapter 16 *Resource and Waste Management***.

The residual effects of the proposed development on resource and waste management during the construction phase, following the implementation of mitigation measures are considered to be minor, negative and short term. The residual effect on resource and waste management during the operational phase is expected to be imperceptible.

#### **20.4.31 Population and Human Health and Material Assets**

A potential interaction between population and human health and material assets during the construction, operational and decommissioning phases of the proposed development is identified in relation to demand for services and land use.

The construction, operation and decommissioning phases of the proposed development will create employment, which will give rise to greater use of material assets in the region. This will result in a slight, short term, negative effect on material assets during the construction phase.

The operation of the proposed development will have a long-term slight, negative effect on the future land use in the area.

The effects on material assets are addressed in **Chapter 17 *Material Assets***. The effects of employment creation are addressed in **Chapter 18 *Population and Human Health***.

Following implementation of the mitigation measures outlined above, it is anticipated that the proposed development will have no significant residual effects on material assets during the construction phase. The proposed development will have long-term significant positive effects on the electricity network of Ireland, and long-term slight negative effects on land use within the permanent cable wayleave during the operational phase.

### 20.4.32 Major Accidents and Disasters

In the event of a major accident or disaster occurring during the construction, operational or decommissioning phase of the proposed development, there is the potential for direct effects on environmental media including population and human health, material assets, transport networks, air quality, climate, biodiversity, surface water quality, groundwater quality, land and soils. Negative effects on air and water quality could have an indirect negative effect on archaeological, architectural or cultural heritage due to increased weathering. Structures and equipment directly affected by an incident may have to be replaced, resulting in increased waste generated and use of natural resources. A fire could have a short term visual impact until the fire damaged structures and equipment has been replaced. Waste material would also be generated arising from damage associated with a major accident.

The direct and indirect effects of major accidents and disasters are addressed in **Chapter 19 *Major Accidents and Disasters***.

Following the implementation of the proposed mitigation measures, no significant residual effects on the environment are expected to result from a major accident or disaster at the proposed development.

## 20.5 Summary of Likely Significant Residual Inter-Related Effects

The following likely significant residual inter-related effects have been identified:

### **Climate and Population and Human Health:**

The operation of proposed development will enable the provision of an additional renewable energy source. The indirect positive effect on climate will have consequential significant long-term positive effects on population and human health.

### **Material Assets and Climate:**

The operation of the proposed development will enable the provision of an additional renewable energy source.

The indirect, positive effect will be to reduce carbon emissions from fossil fuel power plants. This will result in a significant, long-term positive effect on climate.

**Material Assets and Population and Human Health:**

The proposed development will support the provision of a clean electricity source in Ireland.

This will provide economic and social benefits to electricity consumers, resulting in significant, long-term, positive effects to population and human health.

## 20.6 References

EPA (2017) *Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports (Draft August 2017)*

European Commission (2017) *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*