

NON-TECHNICAL SUMMARY

Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared by MKO on behalf of Knocknamork Ltd, who intend to apply to An Bord Pleanála (ABP), Cork County Council (CCC) and Kerry County Council (KCC) for planning permission for works associated with the permitted Knocknamork Renewable Energy Development (Permitted Development), located near Ballyvourney, Co. Cork. The proposed works will consist of a 110kV Electricity Substation, borrow pits, underground cabling and access roads, and associated works.

The townlands in which the Proposed Development is located, are listed in Table 1.

Table 1 Townlands within which the Proposed Development is Located

Development Works	Townland	
	Co. Kerry	Co. Cork
Access roads (new and upgrade of existing)	Cummeenavrick, Glashacormick, Clydaghroe, Cummeennabuddoge	Slievereagh, Coomnaclohy, Caherdowney
Upgrade of access junctions	Cummeenavrick	-
33kv Underground Cabling (Permitted Development to the proposed Substation)	Clydaghroe, Cummeennabuddoge	Slievereagh, Coomnaclohy
110kV Underground Cabling (Proposed Substation to Ballyvouskill Substation)	Cummeennabuddoge	Caherdowney,
110kV Substation	Cummeennabuddoge	-
Borrow pit	Cummeennabuddoge	Caherdowney
Extension to permitted borrow pit	-	Coomnaclohy

This EIAR complies with the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU. The Environmental Impact Assessment (EIA) of the Proposed Development will be undertaken by An Bord Pleanála, Cork County Council and Kerry County Council as the competent authorities.

Applicant

The applicant for the proposed renewable energy development, Knocknamork Ltd, is an associated company of Enerco Energy Ltd., which is an Irish-owned, Cork-based company with extensive experience in the design, construction and operation of wind energy developments throughout Ireland, with projects currently operating or in construction in Counties Cork, Kerry, Limerick, Clare, Galway, Mayo and Donegal.

By the end of 2021, Enerco associated companies had over 625 Megawatts (MW) of wind generating capacity in commercial operation, 200MW in construction, with a further 400MW of projects at various stages in its portfolio to assist in meeting Ireland’s renewable energy targets.

Brief Description of the Proposed Development

Overall Development Description

- i. 110 kV electrical substation with 2 no. control buildings with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, waste water holding tank and all ancillary works;*
- ii. Underground electrical cabling (110kV);*
- iii. Underground electrical cabling (33kV);*
- iv. Access Roads (new and upgrade of existing)*
- v. Temporary access road;*
- vi. Upgrade of access junctions;*
- vii. Amendments to the Permitted Development (Ref. No. 19/4972), including extension to the borrow pit and the omission of the 38kV Electrical Substation, 38KV underground cabling and Battery Storage compound;*
- viii. Borrow pit;*
- ix. Site Drainage;*
- x. Forestry Felling; and*
- xi. All associated site development works and apparatus.*

An Bord Pleanála – Planning Notice Project Description

- i. 110 kV electrical substation with 2 no. control buildings with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, waste water holding tank and all ancillary works;*
- ii. Underground electrical cabling (110kV);*
- iii. New access roads;*
- iv. Borrow pit;*
- v. Site Drainage;*
- vi. Forestry Felling; and*
- vii. All associated site development works and apparatus.*

Cork County Council – Planning Notice Project Description

- i. Underground electrical cabling (33kV);*
- ii. Access roads (new and upgrade of existing);*
- iii. Amendments to the Permitted Development (Ref. No. 19/4972), including extension to the borrow pit and the omission of the 38kV Electrical Substation, 38KV underground cabling and Battery Storage compound;*
- iv. Site Drainage; and*
- v. All associated site development ancillary works and apparatus.*

Kerry County Council – Planning Notice Project Description

- i. Underground electrical cabling (33kV);*
- ii. Upgrade of access junctions;*
- iii. Access roads (new and upgrade of existing);*
- iv. Temporary access road;*
- v. Borrow pit;*
- vi. Site Drainage;*
- vii. Forestry Felling; and*
- viii. All associated site development works and apparatus.*

Need for the Proposed Development

A connection between the Permitted Development and the national electricity grid will be necessary to export electricity from the renewable energy development. Eirgrid have identified the existing Ballyvouskill substation as the connection node for the Permitted Development. It is therefore proposed to construct a 110kV substation, underground cabling connecting the Permitted Development to the proposed 110kV substation and 110kV grid connection cabling from the proposed 110kV substation to the Ballyvouskill 220kV Substation in the townland of Coomnaclohy, Co. Cork. The Proposed Development is therefore crucial in order to facilitate the supply of electricity generated at the Permitted Development to the national grid. By providing the Permitted Development with a connection to the national grid, the Proposed Development will contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions.

The Proposed Development, alongside the Permitted Development provides the opportunity to realise the valuable renewable energy resource. If the Proposed Development were not to proceed the opportunity to capture this additional part of Cork’s valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions.

The opportunity to generate local employment and investment associated with the Proposed Development would also be lost, and the local economy would continue to rely primarily on agriculture and commercial forestry as the main source of income.

In July 2021, the Climate Action and Low Carbon Development (Amendment) Act 2021 was signed into law, committing Ireland to reach a legally binding target of net-zero emissions no later than 2050, and a cut of 51% by 2030 (compared to 2018 levels). On this pathway to decarbonisation, the Government published the Climate Action Plan 2021¹ announcing a renewable electricity target of 80% by 2030, without compromising security of energy supply. The Permitted Development will be operational before 2030 and would therefore contribute to this 2030 target. In June 2022, the EPA² reported that the latest EPA projections show that currently implemented measures (With Existing Measures) will achieve a reduction of 5% on 2005 levels by 2030, significantly short of the 30% reduction target. As such, the Proposed Development is critical to helping Ireland address these challenges as well as addressing the country’s over-dependence on imported fossil fuels.

The Climate Action Plan 2021 (CAP) was published on the 4th of November 2021 by the Department of Communications, Climate Action and Environment (DoCCAE). The CAP sets out an ambitious course of action over the coming years to address the impacts which climate may have on Ireland’s environment, society, economic and natural resources. This CAP clearly recognises that Ireland must significantly step up its commitments to tackle climate disruption. The CAP identifies the need to increase the share of electricity demand generated from renewable sources by to up to 80% where achievable and cost effective, without compromising security of electricity supply. The CAP presents clear and unequivocal support for the provision of additional renewable energy generation and presents yet further policy support for increased wind energy.

Section 2.1 in Chapter 2 of this EIAR on Background to the Proposed Development, presents a full description of the international and national renewable energy policy context for the Proposed Development. Section 2.1 also addresses climate change, including Ireland’s current status with regard to meeting greenhouse gas emission reduction targets.

¹ Government of Ireland (2021) Climate Action Plan 2021

² EPA (June 2022) - Ireland’s Greenhouse Gas Emissions Projections 2021-2040

Economic Benefits

The Proposed Development together with the Permitted Development will have both long-term and short-term benefits for the local economy including income to local landowners, job creation, work opportunities for local businesses and service providers, local authority commercial rate payments and a Community Benefit Scheme.

Commercial rate payments from the Proposed Development will be provided to both Cork County Council and Kerry County Council each year, which will be redirected to the provision of public services within Co. Cork and Co. Kerry. These services include provisions such as road upkeep, fire services, environmental protection, street lighting, footpath maintenance etc. along with other community and cultural support initiatives.

It is estimated that the Proposed Development together with the Permitted Development will create up to 70 jobs during the construction, operational and maintenance phases. During construction, additional employment will be created in the region through the supply of services and materials to the renewable energy development. There will also be income generated by local employment from the purchase of local services i.e. travel, goods and lodgings.

Should the Proposed Development receive planning permission, there are substantial opportunities available for the local area in the form of Community Benefit Funds. Based on the current proposal, a Community Gain Fund in the region of up to €1 million will be made available over the lifetime of the Permitted Development. The value of this fund will be directly proportional to the level of installed MWs at the site and will support and facilitate projects and initiatives including youth, sport and community facilities, schools, educational and training initiatives, and wider amenity, heritage, and environmental projects.

Purpose and Structure of this EIAR

The purpose of this EIAR is to document the current state of the environment in the vicinity of the Proposed Development site and to quantify the likely significant effects of the Proposed Development on the environment. This EIAR submitted by the applicant provides the relevant environmental information to enable the Environmental Impact Assessment (EIA) to be carried out by the competent authority, in this case An Bord Pleanála, Cork County Council and Kerry County Council.

The EIAR project team comprises a multidisciplinary team of experts with extensive experience in the assessment of wind energy developments and in their relevant area of expertise. Each chapter of this EIAR has been prepared by a competent expert in the subject matter. The chapters of this EIAR are as follows:

1. *Introduction*
2. *Background to the Proposed Development*
3. *Consideration of Reasonable Alternatives*
4. *Description of the Proposed Development*
5. *Population and Human Health*
6. *Biodiversity*
7. *Land, Soils and Geology*
8. *Hydrology and Hydrogeology*
9. *Air and Climate*
10. *Noise and Vibration*
11. *Landscape and Visual*
12. *Archaeological and Cultural Heritage*
13. *Material Assets (including Traffic and Transport, Telecommunications and Aviation)*
14. *Interactions of the Foregoing*
15. *Schedule of Mitigation*

A Natura Impact Statement has also been prepared in line with the requirements of the Habitats Directive and has been submitted to the Planning Authority as part of the planning application documentation.

Background to the Proposed Development

This section of the EIAR presents policy information on Energy and Climate Change policy and targets, the strategic, regional, and local planning context for the Proposed Development, scoping and consultation, and the cumulative impact assessment process. A description of reasonable alternatives studied by the developer, relevant to the project including layout arrangement options road layout options is included at Chapter 3 of this EIAR.

The policies and targets which have been put in place at the various levels of Government in relation to renewable energy and climate change illustrate the need for the Proposed Development to assist Ireland in meeting its national targets and European commitments in relation to climate change and decarbonisation.

The Proposed Development comprises key electrical infrastructure which will facilitate the operation of the Permitted Renewable Energy Development (Pl. Ref: 19/4/972). The resulting energy being provided will be added to the national grid. The need to decarbonise the economy and reduce emissions has always been imperative, however in recent years the urgency involved has become clearer to all stakeholders. The Climate Action Plan published by the Government in 2021 has clearly identified the need for and urgency of change, it states:

“Among the most important measures in the plan is to increase the proportion of renewable electricity to up to 80% by 2030... This will not just reduce our emissions from electricity, it will allow us to electrify other sectors such as transport and heat and reduce our emissions in these sectors too.”

The primary driver behind the Proposed Development is the need to provide additional renewable energy to offset the use of fossil fuels within the electricity generating sector. Increasing electricity generation from wind power represents the most economical renewable option to reduce emissions within the power generation sector and is the most mature technology available to achieve national targets that have been established for decarbonisation.

The CAP21 sets a sectoral roadmap which aims to deliver a 51% reduction in greenhouse gas (GHG) emissions by 2030 and net-zero emissions by no later than 2050. *“The Plan lists the actions needed to deliver on our climate targets and will be updated annually, including in 2022, to ensure alignment with our legally binding economy-wide carbon budgets and sectoral ceilings.”*

Section 11 of the Plan considers electricity specifically and notes that in 2018 electricity accounted for 16.2% of Ireland's greenhouse gas (GHG) emissions. The intention is to continue to decarbonise the electricity sector by *“taking advantage of our significant renewable energy resources...”* The Plan continues:

“The share of electricity from renewable energy increased almost five-fold between 2005 and 2018 – from 7.2% to 33.7% – an increase of over 26 percentage points in 13 years. This increase in the share of renewables came despite a rise in the total demand for electricity. In absolute terms, there has been a more than six-fold increase in the volume of renewable electricity generated, from 1,873 GWh in 2005 to 11,780 GWh in 2019.”

Despite the positive trends, the Plan states that *“Additional electricity generation and transmission infrastructure will be a critical enabler to achieve our renewable energy and emissions targets”* and *“total electricity demand over the next ten years is forecast to grow by between 19% and 50%...”*

The climate targets set out will be delivered through a set of enabling targets by 2030; those relevant to the development proposal are:

- *“Increasing the share of electricity demand generated from renewable sources to up to 80% where achievable and cost effective, without compromising security of electricity supply.*
- *Expand and reinforce the grid – through the addition of lines, substations, and new technologies.*
- *Ensure that 20-30% of system demand is flexible by 2030”.*

Large scale renewable generation is identified as a key measure in meeting the targets set out and includes: (inter alia):

“Achieving the renewable electricity target of up to 80% will entail investment of tens of billions of euro, including in the installation and maintenance of generation assets, and associated infrastructure and services, as well as in the development of supply chains and port infrastructure.

EirGrid will carry out further grid, operational and market studies to understand any additional measures, beyond current plans, to facilitate reduced sectoral emissions ceilings and, therefore, support annual renewable electricity share of up to 80%”.

Drawing on the 2030 Climate and Energy Framework, EirGrid’s ‘*All Island Generation Capacity Statement 2021 – 2030*’ (September 2021) states that the national power system will require unprecedented change over this decade, “*a fundamental transition for our electricity sector*”, in order to accommodate at least 70% of electricity from renewable sources by 2030. The retiring of traditional fossil fuel plant (coal, peat and oil-fired generators), c. 1,650MW of generation over the next 5-years within Ireland, further emphasises the need for a deliberate and swift transition to a low-carbon power system based on renewable energy, natural gas and ancillary supporting infrastructure. With regard to wind energy, the *All Island Generation Capacity Statement 2021 – 2030* states that,

“It can be assumed that Ireland’s renewable targets will be achieved largely through the deployment of additional wind powered generation.”

New onshore wind farms commissioned in Ireland in 2020 brought the total wind capacity to 4,300MW, contributing to the increase in overall RES percentage to 43.3%. This value is set to increase as Ireland endeavours to meet its 2030 renewable targets; specifically, the *All Island Generation Capacity Statement 2021 – 2030* estimates that onshore wind energy will increase by 1,000MW between 2020 and 2025. With regard to wind energy, the Statement states that,

“It can be assumed that Ireland’s renewable targets will be achieved largely through the deployment of additional wind powered generation.”

Long-term system electricity demand in Ireland is increasing and is forecast to increase significantly, due to the expected expansion of many large energy users (e.g. data centres). EirGrid’s analysis concludes that, for the Median demand level, there may not be adequate generation capacity to meet demand from 2026 for Ireland should Moneypoint power station close and long term demand continue to rise. In a scenario where any other plant of equivalent capacity closes during this timeframe, earlier deficits could arise. EirGrid also references poor availability of the generation fleet, as exemplified within 2018 and 2019, could give rise to adequacy deficits in 2025. In this context, the importance of wind energy becomes more apparent as it is estimated that 1 MW of wind capacity can provide enough electricity to supply approximately 650 homes . Accordingly, the Proposed Development will serve to only contribute to meeting this increasing electricity demand.

EirGrid have also released their Strategy 2020-2025: Transform the Power System for Future Generations which is driven by climate change and the need to transform the electricity sector.

Currently, the electricity grid can operate with up to 65% of renewable power but by 2030 this must increase to 95%. SEAI 's National Energy Projections to 2030 notes that wind energy deployment has *“made the most significant contribution to RES-E to date. The historic build rate (2005-2010) was 180MW per year. Since 2010 the build rate has increased to an average of over 200MW per year. In 2017 the installed capacity increased by 335MW to just over 3.3GW total installed capacity.”* Furthermore, *“Post 2020, as electricity demand continues to grow at an anticipated rate of 3% per annum, increasing levels of deployment will be needed just to maintain the share achieved in 2020.”*

The Proposed Development, through facilitating the connection of the Permitted Development to the national grid, will continue Ireland's push towards meeting the various statutory targets.

Local Policy

The site of the Proposed Development falls across the administrative area of both Cork and Kerry County Councils. As such the extant Development Plans of both counties, and the emerging Daft Development Plan for County Kerry have been included in Chapter 2 of the EIAR.

Cork County Development Plan 2022-2028

Cork County Council has recently concluded their Development Plan review process, with the newly adopted Development Plan 2022-2028 coming into force on the 6th June 2022. It should be noted that the Wind Energy Strategy from the previous 2014 Development Plan has not been updated as part of the new Plan.

Section 13.4 recognizes that energy generation in Cork is likely to significantly evolve in the coming years as the move towards a low carbon economy increases and the need to produce more energy from renewable sources grows further. It is noted that Cork is well positioned to become self-sufficient in renewable energy and contribute to the achievement of national energy targets. The Proposed Development by facilitating the Permitted Development will displace carbon dioxide from fossil fuel-based electricity generation and will therefore assist in reducing carbon dioxide (CO₂) emissions that would otherwise arise if the same energy that the Permitted Development will generate were otherwise to be generated by conventional fossil fuel plants. This is a long-term positive effect.

Section 13.16 of the Development Plan sets out the Council's consideration in relation to Transmission Networks. It is recognized in Section 13.16.1 that

‘The provision of a secure and reliable electricity transmission infrastructure and transmission grid is essential to meet the growth in demand and ensure that a reliable electricity supply is available. Cork has a very strong electrical grid and substation network and this network will be instrumental in supporting the development of the renewable energy industry in the county.’

In this regard, the following policy objective ET 13-21: Electricity Network is key:

- a. *Support and facilitate the sustainable development, upgrade and expansion of the electricity transmission grid, storage, and distribution network infrastructure.*
- b. *Support the sustainable development of the grid including strategic energy corridors and distribution networks in the region to international standards.*
- c. *Facilitate where practical and feasible, infrastructure connections to wind farms, solar farms, and other renewable energy sources subject to normal proper planning considerations.*
- d. *Proposals for development which would be likely to have a significant effect on nature conservation-sites and/or habitats or species of high conservation value will only be approved if it can be ascertained, by means of an Appropriate Assessment or*

other ecological assessment, that the integrity of these sites will not be adversely affected.

It is pertinent to note that the Permitted Development (which is facilitated by the Proposed Development), is located within an area deemed ‘Open to Consideration’ for wind energy development. As such, Plan Objective ET 13-5: Wind Energy Projects states:

- *Support a plan led approach to wind energy development in County Cork through the identification of areas for wind energy development. The aim in identifying these areas is to ensure that there are minimal environmental constraints, which could be foreseen to arise in advance of the planning process.*
- *On-shore wind energy projects should focus on areas considered ‘Acceptable in Principle’ and ‘Areas Open to Consideration’ and generally avoid “Normally Discouraged” areas as well as sites and locations of ecological sensitivity.*

County Development Plan Objective ET 13-7: Open to Consideration adds:

- *Commercial wind energy development is open to consideration in these areas where proposals can avoid adverse impacts on:*
 - *Residential amenity particularly in respect of noise, shadow flicker and visual impact;*
 - *Urban areas and Metropolitan/Town Green Belts;*
 - *Natura 2000 Sites (SPA’s and SAC’s), Natural Heritage Areas (NHA’s), proposed Natural Heritage Areas and other sites and locations of significant ecological value. • Architectural and archaeological heritage;*
 - *Visual quality of the landscape and the degree to which impacts are highly visible over wider areas. In planning such development, consideration should also be given to the cumulative impacts of such proposals.*

In summary, the Cork County Development Plan fully recognises the importance of tackling climate change and deriving more energy from renewable sources and while the Proposed Development does not include energy generation, it directly facilitates the construction of the Permitted Development and its connection to the national grid.

The Proposed Development, in facilitating the Permitted Development provides the opportunity to capture an additional part of County Cork’s valuable renewable energy resource with minimal infrastructure. If the Proposed Development were not to proceed, the opportunity to capture this additional part of Cork’s valuable renewable energy resource would be lost, as would the opportunity to contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The Proposed Development also supports the provision of a secure and reliable electricity transmission infrastructure and transmission grid which is vital to ensure that a reliable electricity supply is available.

Accordingly, the Proposed Development is considered to be compliant with the relevant provisions of the extant Development Plan and represents proper planning and sustainable development in the Plan area.

Kerry County Development Plan 2015-2021

The Kerry County Development Plan 2015-2021 (KCDP) was adopted on the 16th of November 2015. The KCDP acknowledges the importance of having sufficient capacity to meet current and future needs and the essential requirement for energy production and distribution. The development of secure and reliable electricity transmission infrastructure is recognised as a key factor for supporting economic development and attracting investment to the County.

Section 2.2.2.5 of the KCDP recognises the Councils' commitment to addressing climate change to mitigate against its adverse effects. The Council is committed to addressing climate change in a proactive manner through the careful consideration of policy guidance and strategies

The Council outlines the importance of ensuring that the capacity of the energy networks is sufficient to meet demands in a sustainable manner. County Kerry is regarded by the Council as being 'well placed' to encourage and facilitate the sustainable development of power generation facilities in the county, for a variety of reasons, including the proximity to Cork and Limerick. In this regard the KCDP states that the Council will,

“... continue to support the infrastructural renewal and sustainable development of electricity and gas networks. The County has in terms of alternative energy, huge potential for the development of wind, solar, biomass, geothermal, hydro and wave energy. The wave and wind resources are among the richest in Europe. Although some wind projects are in production in the County, an objective to maximise the sustainable alternative resources, in accordance with the County’s Renewable Energy Strategy, shall be a priority.”

The Renewable Energy Strategy of the Plan The County’s Renewable Energy Strategy (RES) forms part of the adopted Plan. This strategy has been developed to ensure that the Council, as a Planning Authority, *“actively facilitates, and where possible, drives the development of renewable energy within its functional area.”* In preparation of the RES, an appraisal of the county’s renewable energy resources and infrastructural capacity was undertaken, it was established that the county has significant potential for the development of renewable energy sources, it is further set out that;

“The existing transmission grid together with current upgrade projects are such that the capacity of the grid will provide for the collection and distribution of significant amounts of electricity. The upgrading of the transmission network was designed primarily to harness wind energy. This capacity, however, also provides the opportunity to connect electricity generated from other types of renewable energy.”

Draft Kerry County Development Plan 2022-2028

The review of the Kerry County Development Plan commenced on 24th June 2020 in accordance with the requirements of Section 11 of the Planning and Development Act 2000 (as amended), with submissions or observations regarding the Material Alterations to the Draft Kerry County Development Plan (DKCDP) has now ended.

The DCKDP sets out that one of the underpinning goals for the future development of the county include growth of a sustainable and strong economy involving the transition to a low carbon and climate resilient society. Section 12.5 recognises the importance of access to secure, clean and affordable energy for the future development of the county and states that:

“The Council will continue to support and facilitate the sustainable development of the renewable energy sector in line with the strategic goals set out by the Department of Communications, Climate Action and the Environment whilst balancing the need for new development with the protection of the environmental, cultural and heritage assets of the county.”

In summary, the Kerry County Development Plan recognizes the importance of addressing climate change in order to mitigate against its adverse effects and acknowledges the importance of having sufficient capacity to meet current and future needs and the essential requirement for energy production and distribution. The development of secure and reliable electricity transmission infrastructure is recognised as a key factor for supporting economic development and attracting investment to the County.

The overarching policy stance is one of support for continued decarbonisation, while emerging planning policy, at this early stage, appears to be in alignment with this stance. The Proposed Development by facilitating the Permitted Development will contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. The Proposed Development will also facilitate the sustainable development of additional electricity generation capacity throughout the region/county and to support the sustainable expansion of the network.

There is a range of policy in place within the current and draft county plans which strongly supports the development and continued supply of renewable energy onto the national grid. Accordingly, the Proposed Development is consistent with the aims and objectives of the Kerry County Development Plan 2015-2021 and Draft Plan as currently written.

Chapter 2 contains full detail of all associated detail of relevant local, regional and strategic policy and guidance, and associated other relevant considerations.

Planning History

The relevant planning history of the Proposed Development site, the planning applications in the vicinity of the site along with other wind energy applications within the wider area are set out at Section 2.4 of Chapter 2 Background to the Proposed Development, of the EIAR.

Scoping and Consultation

Scoping is the process of determining the content, depth and extent of topics to be covered in the environmental information to be submitted to a competent authority for projects that are subject to an Environmental Impact Assessment. This process is conducted by contacting the relevant authorities and Non-Governmental Organisations (NGOs) with interest in the specific aspects of the environment with the potential to be affected by the proposal. A scoping report, providing details of the application site and the subject underground cable route, was prepared by MKO and circulated in December 2021 to relevant parties. Full detail of scoping requests and responses are set out at Section 2.4 of Chapter 2 of the EIAR.

This Section of the Chapter also sets out engagement with An Bord Pleanála, Cork County Council and Kerry County Council in relation to the Proposed Development. As the proposed extension comprises 110kV infrastructure a determination was required from the Board under Section 182A of the Planning and Development Act, 2000, as amended, as to whether this element of the proposals constituted Strategic Infrastructure Development (SID).

Consideration of Reasonable Alternatives

This section of the EIAR contains a description of the reasonable alternatives that were studied by the developer, which are relevant to the Proposed Development and its specific characteristics, in terms of site layout and transport route options to the site. This section also outlines the design considerations in relation to the Proposed Development. It provides an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects. A 'Do Nothing Scenario' i.e. an outline of what is likely to happen to the environment should the Proposed Development not be implemented, is also included.

The layout and design for the Proposed Development was an iterative process which took account of site constraints and the distances to be maintained between infrastructure from houses, watercourses, etc. The aim of the process being to reduce the potential for environmental effects while designing a project capable of being constructed and viable.

The final underground cable route largely takes account of all site environmental constraints (e.g., ecology, archaeology, hydrology, peat depths etc.) and design constraints (e.g., third party lands, underground electrical cables). The final underground cable route also takes account of the findings from the site investigations and baseline assessments that have been carried out during the EIAR process.

The Permitted Development will connect to the national grid via underground cabling, located on existing forest roads / land and agricultural land. Whereas overhead lines are less expensive and allow for easier repairs when required, underground lines will have no visual impact. For this reason, it was considered that underground lines would be a preferable alternative to overhead lines. The underground cables will follow, insofar as possible, the route of existing and proposed access tracks on existing forestry and agricultural land, thereby minimising the amount of ground disturbance required.

The proposed borrow pit location was selected due to the presence of competent or usable rock at an acceptable level below existing surface level. An alternative to using an onsite borrow pit was the option of sourcing stone and hardcore materials from a licensed quarry in the vicinity. The movement of such material would result in a significant increase in construction traffic and heavy loads and was therefore considered the least preferable option.

Description of the Proposed Development

The overall layout of the Proposed Development is shown on Figure 4.1. This drawing shows the proposed locations of the underground electrical cabling, 110kV electrical substation, access roads, access junctions and borrow pits. Detailed site layout drawings of the Proposed Development are included in Appendix 4-1 to this EIAR.

Development Components

Electrical Substation

It is proposed to construct a 110 kV electrical substation to accommodate the connection of the Permitted Development to the national grid. It is intended that the 110kV substation will replace the 38kV substation, 38kV underground cabling and battery storage compound permitted under Pl. Ref. 19/4972. The footprint of the proposed electrical substation compound measures approximately 0.84 hectares. The works will consist of the construction of 2 no. control buildings with welfare facilities, all associated electrical plant and apparatus, security fencing, underground cabling, waste water holding tank and all ancillary works.

Site Underground Cabling

The proposed underground electrical cabling consists of two elements: (1) 110kV underground electrical cabling connecting the proposed 110kV substation to the existing 220kV substation at Ballyvouskill; and (2) 33kV underground electrical cabling connecting the Permitted Development to the proposed 110kV substation.

Site Access Roads

To provide access within the Proposed Development site and to connect the associated infrastructure existing roads will need to be upgraded and new access roads will need to be constructed.

Borrow Pits

It is proposed to develop a new borrow pit as part of the Proposed Development and extend the borrow pit as permitted under Planning Permission Ref. No. 19/4972. It is proposed to obtain the majority of all rock and hardcore material that will be required during the construction of the Proposed Development from the borrow pit and the permitted borrow pit extension. Usable rock may also be won from other infrastructure excavations (such as the substation platform excavation).

Peat and Spoil Management Plan

It is estimated that approximately 98,500 m³ of peat and spoil will be excavated during the construction of the Proposed Development. This peat and spoil will be managed by means of placement within the proposed borrow pits, used for landscaping or alongside designated access roads.

Tree Felling and Replanting

A total of 21.7 hectares of forestry will be permanently felled within and around the footprint of the Proposed Development. The estimated 21.7 hectares that will be permanently felled for the footprint of the Proposed Development infrastructure will be replaced or replanted on a hectare for hectare basis as a condition of any felling licence that will be issued in respect of the Proposed Development. Replanting is a requirement of the Forestry Act and is primarily a matter for the statutory licensing processes that are under the control of the Forest service. The replacement of the 21.7 hectares of forestry can occur anywhere in the State subject to licence.

Access and Transportation

It is proposed to access the site of the Proposed Development via an existing access track off the remaining section of the old N22 alignment to the southwest of the site. This entrance will be widened to facilitate the delivery of the construction materials and turbine components to the Permitted Development. A temporary access road will also be required from the N22 to the old N22 alignment to facilitate the delivery of abnormally large wind turbine vehicle loads. The use of this temporary access road will be carefully managed and the route will be blocked with traffic bollards when not in use for turbine deliveries. It is also proposed that general HGV construction traffic will access the east of the site via the L5226 Local Road.

Site Drainage

The protection of the watercourses within and surrounding the site, and downstream catchments that they feed is of utmost importance in considering the most appropriate drainage proposals for the site of the Proposed Development. The Proposed Development's drainage design has therefore been proposed specifically with the intention of having no negative impact on the water quality of the site and its associated rivers and lakes, and consequently no impact on downstream catchments and ecological ecosystems. No routes of any natural drainage features will be altered as part of the Proposed Development. There will be no direct discharges to any natural watercourses, with all drainage waters being dispersed as overland flows. All discharges from the proposed works areas will be made over vegetation filters at an appropriate distance from natural watercourses. Buffer zones around the existing natural drainage features have been used to inform the layout of the Proposed Development.

Construction Phasing and Timing

It is estimated that the construction phase of the entire renewable energy development (i.e. the Permitted Development and the Proposed Development) will take approximately 18 months.

Operation

The proposed substation components will require periodic maintenance throughout the operational phase. The site tracks will also require periodic maintenance.

Decommissioning

It is not intended that the on-site electrical substation will be removed at the end of the useful life of the Permitted Development, as permanent planning permission is being sought for the substation. The underground electrical cabling (33kV) connecting the Permitted Development to the proposed 110kV electrical substation will be removed from the underground cable ducting at the end of the useful life of the renewable energy development. Site roadways could be in use for purposes other than the operation of the development by the time the decommissioning of the Permitted Development is to be considered, and therefore it may be more appropriate to leave the site roads in situ for future use.

Population and Human Health

One of the principal concerns in the development process is that human beings, as individuals or communities, should experience no significant diminution in their quality of life from the direct, indirect, or cumulative effects arising from the construction, operation and decommissioning of a development. The key issues examined in this chapter of the EIAR include population, human health, employment and economic activity, land-use, residential amenity, community facilities and services, tourism, property values, noise, and health and safety.

The Proposed Development is located approximately 3km northwest of the town of Ballyvourney, Co. Cork and approximately 11 kilometres southwest of the town of Millstreet, Co. Cork. Most of the amenities and community facilities, including GAA and other sports clubs, youth clubs, recreational areas, retail, and personal services are available in the nearby village of Ballyvourney and Millstreet, with larger scale services being available in the larger town of Macroom. There are no key identified tourist attractions pertaining specifically to the site of the Proposed Development itself.

The Study Area for the Population and Human Health assessment was defined by the 4 No. District Electoral Division (DED)s within and adjacent to the Proposed Development site. The population of the Study Area decreased by 0.92% between 2011 and 2016, decreasing from 3,379 to 3,348 persons, respectively with the rate of population change unevenly distributed between the DEDs. The highest level of employment recorded within the Study Area was recorded in the Farmer category, closely followed by the Skilled Manual category. The figures recorded for Lower Professional, Skilled Manual, Unskilled, Own Account and Farmer categories recorded in the Study Area were higher than those recorded at a State Level.

Up to 70 jobs could be created during the construction, operation and maintenance phases of the Proposed Development along with the Permitted Development with most construction workers and materials sourced locally, thereby helping to sustain employment in the construction trade. This will have a Short-Term Significant Positive Impact.

The provision of underground electric cables is common practice throughout the country and installation to the required specification does not give rise to any specific health concerns. The extremely low frequency (ELF) electric and magnetic fields (EMF) associated with the operation of the proposed cables fully comply with the international guidelines for ELF-EMF set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), a formal advisory agency to the World Health Organisation, as well as the EU guidelines for human exposure to EMF.

The Proposed Development is not a recognised source of pollution. Should a major accident or natural disaster occur, the potential sources of pollution onsite during the construction, operational and decommissioning phases, are limited. Sources of pollution with the potential to cause significant

environmental pollution and associated negative effects on health, such as bulk storage of hydrocarbons or chemicals, storage of wastes etc., are limited.

Impacts on human beings during the construction, operational and decommissioning phases of the Proposed Development are described in Chapter 5 in terms of health and safety, employment and investment, population, land-use, noise, dust, traffic, tourism and residential amenity. Where a negative impact was identified, the appropriate mitigation measures will be put in place to ensure that there will be No Adverse Impacts on human health in the surrounding area.

Following consideration of the residual impacts (post-mitigation) it is noted that the Proposed Development will not result in any significant effects on Human Beings in the area surrounding the Proposed Development. Provided that the Proposed Development is constructed and operated in accordance with the design, best practice and mitigation that is described within this EIAR significant effects on population and human health, associated with health and safety, noise, dust, and traffic, are not anticipated at international, national or county scale.

Biodiversity

This chapter assesses the likely significant effects (both alone and cumulatively with other projects) that the Proposed Development may have on Biodiversity, Flora and Fauna and sets out the mitigation measures proposed to prevent, reduce or offset any potential significant effects that are identified.

Multidisciplinary walkover surveys were undertaken on the 28th of September 2021, the 29th of September 2021, the 13th of January 2022, the 9th of February 2022, the 9th of May 2022 and the 10th of May 2022. Surveys were conducted throughout a range of seasons including optimum periods for vegetation surveys and habitat mapping, i.e. April to September (Smith et al., 2011). Bat surveys were carried out in August 2021. A comprehensive walkover of the entire site was completed with incidental records also incorporated from other dedicated species/habitat specific surveys including otter (*Lutra lutra*) and bats.

The habitats on the site of the Proposed Development were the subject of a detailed survey and assessment. This habitat mapping and assessment was undertaken following with ‘A Guide to Habitats in Ireland’ (Fossitt, 2000). The majority of the EIAR Study Area comprises commercial conifer plantation (WD4), dominated mainly by Sitka spruce (*Picea sitchensis*). Other habitats present within the EIAR Study Area are Recolonising bare ground (ED3), Buildings and artificial surfaces (BL3), Upland/ eroding rivers (FW1), Wet Grassland (GS4), Drainage Ditches (FW4), Treelines (WL2), Improved Agricultural Grassland (GA1), Wet Heath (HH3), Upland Blanket Bog (PB2), Dry Meadows and Grassy Verges (GS2), Recently Felled Woodland (WS5), Cutover Bog (PB4), Dystrophic Lakes (FL1), Immature woodland (WS2), and Treelines/ Hedgerows mosaic (WL2/WL1).

Habitats within the footprint of the proposed underground electrical cabling (110kV and 33kV) are Improved agricultural grassland (GA1), Wet grassland (GS4), Recolonising Bare Ground (ED3), Wet heath (HH3), Upland blanket bog (PB2), Conifer plantation (WD4), Upland/ eroding rivers (FW1), Buildings and artificial surfaces (BL3), Cutover bog (PB4) and Dry meadows and grassy verges (GS2).

Habitats within the footprint of the proposed 110kV electrical substation and borrow pit comprise solely of Conifer Plantation (WD4) of varying ages.

Habitats within the footprint of the proposed extension works at the borrow pit as permitted under Planning Permission Ref. No. 19/4972 include Recolonising bare ground (ED3) and Cutover bog (PB4).

Habitats within the footprint of the proposed turbine delivery route (TDR) works are Recolonising bare ground (ED3), Buildings and artificial surfaces (BL3), Conifer plantation (WD4), Upland/ eroding rivers (FW1), Immature woodland (WS2), Improved agricultural grassland (GA1) and Treeline (WL2)/ Hedgerow (WL1) mosaic habitat.

Degraded Wet heath (HH3)/ Upland blanket bog (PB2) habitat is located within the footprint of the proposed 110kV underground electrical cabling. Although degraded, Wet heath (HH3) and Upland blanket bog (PB2) within the footprint of the proposed 110kV underground cabling correspond to habitats listed under Annex I of the EU Habitats Directive. The Proposed Development may result in the potential further degradation of this Upland blanket bog (PB2) and Wet heath (HH3) habitat. Following the implementation of the measures outlined in this report to offset the degradation of degraded peatland habitat, there will be no residual net loss of peatland habitats on the site. In addition, the proposed non-Annex I forestry reinstatement to peatland has the potential to result in a long-term positive effect on 0.59 ha in peatland habitat overall.

Provided that the Proposed Development is constructed and operated in accordance with the design, best practice and mitigation that is described within this application, significant impacts on ecology are not anticipated.

Land, Soils and Geology

This chapter assesses the likely significant effects that the Proposed Development may have on land, soils and geology and sets out the mitigation measures proposed to avoid, reduce or offset any potential significant effects that are identified.

The geology of the Proposed Development site comprises peat over bedrock, slightly weathered bedrock or thin subsoils.

Overall, peat depths recorded (880 individual locations) within the Proposed Development site ranged from 0.0 to 3.25m with an average depth of 0.85m. Approximately 92% of peat depth probes recorded peat depths of less than 2.0m and with 66% been less than 1m.

Construction works will require the removal of peat, soil and rock to competent foundation. Excavation of bedrock from 1 no. proposed on-site borrow pit and 1 no. permitted borrow pit (proposed for extension) will provide material for access road, substation platform and general hard-standing construction. Removal of soil, peat and bedrock represents a permanent direct impact on the geology of the site which is considered to be an acceptable part of economic progression and development.

During the construction phase sources of contaminants (such as oil based substances or other hazardous chemicals) will not be stored at the site except where this is done within safely bunded areas that safely contain all spillages and prevent the migration of contaminants into soil, peat and bedrock. Refuelling will be done with a double skinned bowser with spill kits on the ready in case of accidental spillages. The risk is considered to be low once mitigation measures are implemented.

The peat stability assessment undertaken at the Proposed Development site shows that the site has acceptable risk with respect to peat movement/failure. A number of control measures are given in the peat stability assessment to manage all risks associated with peat instability that will make the site acceptable for development.

A Peat Management Plan has been prepared for the development which details management of peat during construction works and long term storage thereafter. Peat removed during the excavation works will be deposited in the proposed on-site borrow pits and also used for landscaping around the site. These methods will reduce the requirement for stock piling and prevent potential slope failure and erosion. Drainage and erosion prevention measures will be put in place at the peat storage areas.

A cumulative impact assessment with respect of the Proposed Development, Permitted Development and other local developments was undertaken and no significant effects were identified and this largely due to the localised nature of the works which are spread out over a large geographical area.

With respect to potential health effects, grid connections/substations are not a recognized source of pollution and so the potential for effects during the construction, operational and decommissioning phase are negligible.

No significant impacts on the land, soil and geological environmental are anticipated during the construction, operation or decommissioning of the Proposed Development.

Hydrology and Hydrogeology

Hydro-Environmental Services (HES) was engaged by MKO to undertake an assessment of the potential direct, indirect and cumulative effects of the Proposed Development on water aspects (hydrology and hydrogeology) of the receiving environment.

In terms of regional surface water catchments, the Proposed Development site is located in the River Lee, Laune River and Blackwater River catchments. The Proposed Development site boundary extends into the Blackwater River catchment but there is no development footprint drainage towards the Blackwater River.

In terms of local hydrology, all Proposed Development areas in the Laune River regional catchment mentioned above are located in the Flesk River sub-catchment. The Flesk River waterbody flows downstream to the north of the Proposed Development site with downstream distances ranging between 1 and 2.5km.

Within the River Lee regional catchment, Proposed Development is located in the Foherish River and Sullane River sub-catchments. The Foherish River is located approximately 5.5km downstream of the Proposed Development, while the Sullane River is approximately 4.5km downstream.

Due to the upland location of the Proposed Development along the catchment divide of three regional catchments, natural watercourses intercepted by the proposed infrastructure typically comprise small headwater streams that are generally 1st or 2nd order in size. Many of the watercourses intercepted by the Proposed Development are likely to dry up during the summer period or during prolonged dry spells. No instream works are proposed at any of the watercourse crossing locations.

Along with the local internal stream network, there are numerous manmade drains that are in place predominately to drain the peatland and forestry. The integration of the Proposed Development infrastructure with the existing land drainage in a manner that avoids water quality impacts in downstream water bodies is a key component of the drainage design.

The bedrock underlying the site is classified as poor in terms of well water yield potential. The bedrock has little or no open cracks which means groundwater movement within the aquifer is very localised. Groundwater at the site can be classed as sensitive in terms of potential impacts from the Proposed Development. However, the majority of the bedrock is covered in peat which acts as a protective cover to groundwater quality. The low potential for pollutant travel within the bedrock groundwater makes surface water bodies such as streams more sensitive to pollution than groundwater at this site. There will be no impact on private wells as a result of the development.

Designated sites that receive surface water runoff from the Proposed Development include Killarney National Park, Macgillycuddy's Reeks And Caragh River Catchment SAC. These designated sites can be considered very sensitive in terms of potential impacts. Comprehensive surface water mitigation and controls are proposed to ensure protection of all downstream receiving waters. Any introduced drainage works at the site will mimic the existing drainage regime thereby avoiding changes to flow volumes leaving the site.

Due to the nature of grid connection/substation developments, being near surface construction activities, impacts on groundwater are generally negligible and surface water is generally the main

sensitive receptor assessed during impact assessments. The primary risk to groundwater at the site would be from hydrocarbon spillage and leakages at the borrow pits or during refuelling. These are common potential impacts to all construction sites (such as road works and industrial sites). These potential contamination sources are to be carefully managed at the site during the construction and operational phases of the development and measures are proposed within the EIAR to deal with these potential minor local impacts.

Two methods will be employed to control drainage water within the site during construction, thereby protecting downstream surface water quality and aquatic habitats. The first method involves ‘keeping clean water clean’ by avoiding disturbance to natural drainage features, minimising any works in or around artificial drainage features, and diverting clean surface water flow around excavations and construction areas. The second method involves collecting any drainage waters from works areas within the site that might carry silt, to allow settlement and cleaning prior to its release. During the construction phase all runoff will be treated to a high quality prior to being released. There will be no risk of increased flooding down-gradient of the site as a result of the Proposed Development due to these drainage measures. Impacts on water quality during the construction phase of the wind farm will be imperceptible to none. A surface water monitoring programme will be put in place during the construction phase.

During the operational phase drainage control measures will ensure that surface runoff from the developed areas of the site will continue to be of good quality and will therefore not impact on the quality of down-stream rivers and streams. The present drainage regime of the site will not be altered in any way. No impacts on surface water quality are anticipated during the operational phase.

With respect to potential health effects, grid connections/substations are not a recognized source of pollution and so the potential for effects during the construction, operational and decommissioning phase are negligible.

In terms of cumulative impacts on regional rivers arising from other developments, due to the linear dispersed and spread out nature of the development across several sub-catchments no significant cumulative will occur.

No significant impacts on the water environmental (including WFD status) will occur during the construction, operation or decommissioning of the Proposed Development.

Air and Climate

This chapter identifies, describes and assesses the potential significant direct and indirect effects on air quality and climate arising from the construction, operation and decommissioning of the Proposed Development.

The Environmental Protection Agency (EPA) has designated four Air Quality Zones for Ireland:

- Zone A: Dublin City and environs
- Zone B: Cork City and environs
- Zone C: 16 urban areas with population greater than 15,000
- Zone D: Remainder of the country.

These zones were defined to meet the criteria for air quality monitoring, assessment and management described in the Clean Air for Europe (CAFE) Directive (as amended) and the Fourth Daughter Directive. The site of the Proposed Development lies within Zone D, which represents rural areas located away from large population centres.

Due to the non-industrial nature of the Proposed Development and the general character of the surrounding environment, air quality sampling was deemed to be unnecessary for this EIAR.

The production of energy from wind turbines and solar farms has no direct emissions as is expected from fossil fuel-based power stations. Harnessing more energy by means of wind farms and solar farms will reduce dependency on fossil fuels, thereby resulting in a reduction in harmful emissions that can be damaging to human health and the environment. Some minor short term or temporary indirect emissions associated with the construction of the Proposed Development include vehicular and dust emissions.

A Construction and Environmental Management Plan (CEMP) will be in place throughout the construction phase (see Appendix 4-3 of the EIAR) and includes dust suppression measures. In addition construction materials will be transported to the site on specified haul routes only. The agreed haul route roads adjacent to the site will be regularly inspected for cleanliness and cleaned as necessary.

Climate Change and Carbon Balance Calculations

Climate change is one of the most challenging global issues facing us today and is primarily the result of increased levels of greenhouse gases in the atmosphere. These greenhouse gases come primarily from the combustion of fossil fuels in energy use. Changing climate patterns are linked to increased frequency of extreme weather conditions such as storms, floods and droughts. In addition, warmer weather trends can place pressure on animals and plants that cannot adapt to a rapidly changing environment. Moving away from our reliance on coal, oil and other fossil fuel-driven power plants is essential to reduce emissions of greenhouse gases and combat climate change.

In June 2022, the Environmental Protection Agency (EPA) published an update on Ireland’s Greenhouse Gas Emission Projections to 2040. The report includes an assessment of Ireland’s progress towards achieving its emission reduction targets out to 2030 set under the EU ESD and Effort Sharing Regulation (ESR³).

The EPA has produced two scenarios in preparing these greenhouse gas emissions projections: a “With Existing Measures” (WEM) scenario and a “With Additional Measures” (WAM) scenario. These scenarios forecast Ireland’s greenhouse gas emissions in different ways. The WEM scenario assumes that no additional policies and measures, beyond those already in place by the end of 2020. This is the cut off point for which the latest national greenhouse gas emission inventory data is available, known as the ‘base year’ for projections. The WAM scenario has a higher level of ambition and includes government policies and measures to reduce emissions such as those in Ireland’s Climate Action Plan 2021.

The EPA Emission Projections Update notes the following key trends:

- *Under the With Existing Measures scenario, the projections indicate that Ireland will cumulatively exceed its ESR emissions allocation of 384.3 Mt CO₂ eq by 78.3 Mt CO₂ eq over the 2021-2030 period without the use of flexibilities. If both the LULUCF and ETS flexibilities are used the exceedance will reduce to 52.3 Mt CO₂ eq.*
- *Under the With Additional Measures scenario, the projections indicate that Ireland will cumulatively exceed the ESR emissions allocation by 24.2 Mt CO₂ eq over the 2021-2030 period.*
- *The projections show that Ireland can achieve compliance under the ESR (in the With Additional Measures scenario) – using both flexibilities but only with implementation of the Climate Action Plan 2021. Using both flexibilities gives a surplus under the ESR of only 1.6 Mt CO₂ eq, this is a small amount of headroom and only highlights the need for full and rapid implementation of policies and measures in the Climate Action Plan 2021.*

³ REGULATION (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

The carbon losses and savings for the renewable energy development were assessed in the original planning application which was granted by Cork County Council in January 2020 (Ref. No. 19/4972). The carbon calculations as set out in Section 9.2.3 of Chapter 9 Air and Climate estimated that 36,577 tonnes of carbon dioxide will be displaced per annum from the largely carbon-based traditional energy mix by the renewable energy development. Over the proposed thirty-year lifetime of the renewable energy development, 1,097,310 tonnes of carbon dioxide will be displaced from traditional carbon-based electricity generation. Continuing improvements in turbine technology will result in an installed capacity of at least this figure if not greater.

Construction of the Proposed Development will have a Short-Term, Imperceptible Negative Effect as a result of greenhouse gas emissions from construction plant and vehicles. Together with the Permitted Development, the operation of the Proposed Development will have a Long-Term Moderate Positive Impact on climate as a result of reduced greenhouse gas emissions.

Noise and Vibration

AWN Consulting Limited has been commissioned to conduct an assessment into the likely environmental noise and vibration impacts of the Proposed Development.

The background noise environment has been established through analysis of the noise monitoring surveys previously undertaken at selected noise-sensitive locations (NSLs) near the Permitted Development. Typical background noise levels for day and night periods at various wind speeds have been measured in accordance with guidance contained ISO 1996: 2017 Acoustics – Description, Measurement and Assessment of Environmental Noise. Measured noise levels were typical of rural areas; at receptors located along or close to the N22 road, the ambient noise levels are expected to be higher than those measured at the noise monitoring locations.

When considering a development of this nature, the potential noise and vibration effects on the surroundings must be considered for two stages: the short-term construction phase during which noise is generated by the construction machinery and plant, and the long-term operational phase.

The assessment of construction noise and vibration and has been conducted in accordance with best practice guidance contained in BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise and Part 2: Vibration. Subject to good working practice as recommended in the EIAR Chapter, it is not expected that there will be any significant noise and vibration impacts associated with the construction phase and the likely noise from construction activity at the nearest Noise Sensitive Locations (NSLs) is well below recommended significance threshold values. The associated construction noise and vibration impacts are not expected to cause any significant effects either on its own or cumulatively.

As the proposed grid connection will be located underground there is no operational noise impact associated and therefore no significant noise effect associated with the Proposed Development. No significant vibration effects are associated with the operation of the underground cable. Noise and vibration effects associated with the proposed 110kV electrical substation are not significant.

In summary, the noise and vibration impact of the Proposed Development is not significant.

Landscape and Visual

The Proposed Development is sited in a remote and isolated upland landscape. The site is composed mainly of human interventions such as wind farm infrastructure and conifer plantations. The Proposed Development will therefore integrate with the existing landscape character. The construction of a new proposed 110kV electrical substation will compensate the proposed omission of the 38kV electrical substation for the Permitted Development. The proposed 110kV electrical substation is strategically sited in a remote and isolated upland plateau, where the existing topography and forestry restrict

visibility and mitigate the potential for significant landscape and visual effects. The proposed underground electrical cabling consists of two underground elements: (1) 110kV underground cabling connecting the proposed 110kV substation to the existing 220kV substation at Ballyvouskill; and (2) 33kV underground cabling connecting the Permitted Development to the proposed 110kV substation.

Overall, the landscape has been deemed to be low to medium value. Considering the presence of other wind farm infrastructure in the area, susceptibility of the landscape to the type of change prompted by the proposed 110kV electrical substation, underground electrical cabling, borrow pits and access roads has been considered low. On balance, the landscape has been deemed to be of Low Sensitivity.

Prominent receptors identified in the landscape and visual impact assessments (LVIA) Study Area include public roads, scenic routes, main access roads, a walking trail, and local residential dwellings. The principal visual receptors identified in this study were the existing residential dwellings, scenic route S22 and the National Waymarked Trail, with forestry and maintenance tracks not being considered as a primary receptor due to their momentary use and function.

Although the proposed 110kV electrical substation was deemed potentially visible from several isolated locations on scenic route S22, mostly limited to elevated elements such as masts, it was noted that visibility will be localised to the elevated remote plateau where the proposed 110kV electrical substation will be constructed. The proposed 110kV electrical substation will therefore be perceived by visual receptors from the existing ‘Sli Gaeltacht Mhuscraí’ walking trail that crosses the landscape in proximity to existing and proposed windfarm infrastructure. The proposed 110kV electrical substation was deemed to have short-term negative landscape effects of ‘Moderate’ significance, and long-term, negative visual effects of ‘Slight’ significance for construction and operational phases.

The proposed underground electrical cabling routes will be laid underground and therefore have been identified as comprising temporary construction effects but imperceptible operational effects. Due to the underground nature of these elements, the entirety of the cable will not be visible. Once backfilling and revegetation have been applied further to construction works, no landscape and visual effects are likely to occur. Access roads pertaining to the 110kV underground cabling were deemed to have a short-term, negative visual and landscape effects of ‘Slight’ significance for the construction phase, and a long-term, ‘Slight’ negative impact during operational phase.

The proposed borrow pit and permitted borrow pit extension will be a temporary feature in the landscape, comprising short-term, negative landscape and visual effects of ‘Slight’ significance during the construction phase. Once backfilling and revegetation has occurred further to construction works, no landscape and visual effects are likely to occur.

The access road and temporary access road to be carried out in the western portion of the site will be highly localised and will be mostly imperceptible. The works will only be perceived within the forestry and immediate surrounds. The road works have been identified as comprising no significant landscape and visual effects as these works will take place within mature forestry of low sensitivity in a private domain.

The lack of highly sensitive landscape and visual receptors, the likely limited visibility of the Proposed Development within the landscape and the strategic siting of infrastructure will mitigate any potential for significant landscape and visual effects.

Archaeology and Cultural Heritage

An Environmental Impact Assessment Report (EIAR) of the potential impact of the Proposed Development on the Cultural Heritage resource was carried out. The cultural heritage resource is considered to include archaeological heritage both recorded and unrecorded, architectural heritage both recorded and unrecorded and items of local cultural heritage merit which are largely unrecorded.

The assessment comprised desk-based research, GIS mapping and field inspection of the Proposed Development site, both in 2021 and in 2018 for the Permitted Development.

All archaeological, architectural and cultural heritage constraints (items that are capable of being impacted) within 100m of either side of the proposed underground cabling routes and Access Road and temporary road were assessed, as well as those in the wider landscape surrounding the proposed 110kV substation and borrow pits. No direct impacts to any recorded or newly recorded constraints as a result of the Proposed Development were identified. Some mitigation measures have been recommended, however, to alleviate/remove any negative effects to potential sub-surface features and the standing stones located a short distance from the proposed 33kV underground cabling route.

An assessment of cumulative impacts was also undertaken taking into consideration projects in the vicinity, particularly the adjacent Permitted Development and other permitted, proposed and existing developments listed in Chapter 2. No residual direct impacts or direct cumulative impacts as a result of the Proposed Development will occur, however, since all potential direct effects are dealt with through mitigation to alleviate or remove the impacts altogether. Cumulative impacts on setting are more likely to occur at the operational stage of a development (i.e. post-construction). The proposed 110kV and 33kV underground cabling routes are underground and will not result in any impacts on setting and therefore no cumulative impacts will occur. The proposed 110kV substation and borrow pit and the extension to the permitted borrow pit will result in Not Significant-Imperceptible overall impacts on setting in the wider archaeological and cultural heritage landscape. When added to other projects in the vicinity, including the Permitted Development (19/4972), a slight increase in cumulative impacts on setting may occur. No significant effects to the setting of recorded monuments, newly recorded sites, Protected Structures or items listed in the NIAH will occur however.

Material Assets

Traffic and Transport

An assessment of the traffic effects of the Proposed Development was undertaken, which is located between Counties Cork and Kerry, approximately 11 kilometres southwest of the town of Millstreet and 3 kilometres northwest of the village of Ballyvourney, and is bordered by the N22 National Road to the south and the R582 to the east. The assessment was undertaken for the construction, operational and decommissioning stages of the development. The assessment considered the impact that the traffic generated by the Proposed Development would have on the national, regional and local highway network.

Traffic Route & Study Area

There are two routes that materials may be delivered to the Proposed Development site. One from the west on the N22 in the direction of Killarney in County Kerry, and the second from the east in the direction of Macroom on the N22 in County Cork. The site may also be approached from the east via the R582, followed by the L5226. All route options are considered in this EIAR.

Vehicle types and network geometry

During the construction of the Proposed Development vehicles requiring access to the site will be standard HGVs, tipper trucks, concrete mixers, tankers and LGVs. All vehicle types will be accommodated by the proposed delivery routes to the site.

Traffic impact on highway network

In terms of daily traffic flows it is estimated that the impact of the development traffic on the delivery routes will be as follows:

During the 255 days when the Proposed Development is constructed an average of an additional 91 PCUs will travel to/from the site. For the delivery route from the west, it is estimated that the percentage increase in traffic volumes experienced on the N22 will be +0.9%, and if via the N22 from Macroom in the east it is forecast to be +0.5%. On days when traffic approach the site from the east via the R582 it is forecast that traffic volumes will increase on this road by 1.3%.

Once the facility is operational the traffic impact created by maintenance staff, which is estimated to be an average of 2 staff per day, will be imperceptible.

Built Services and Waste Management

This section of the EIAR addresses the likely significant effects of the Proposed Development on built services and waste management.

There are no overhead electricity cables on the site of the Proposed Development. There are existing underground electricity cables present on the site of the Proposed Development and in the vicinity of the site. Damage of underground electricity cables during construction operations could potentially result in serious injury or death of site staff. The Proposed Development has been designed to avoid existing underground electricity cables and the appropriate separation distances in accordance with ESB requirements have been maintained.

There are no other known services (i.e. water supply, gas, sewage, telecommunications) at the site of the Proposed Development or in the vicinity of the site.

A Waste Management Plan (WMP) has been prepared and forms part of the Construction and Environmental Management Plan (CEMP). The WMP outlines the methods of waste prevention and minimisation by recycling, recovery and reuse at each stage of construction of the Proposed Development. Disposal of waste will be a last resort.

Interactions of the Foregoing

Chapters 5 to 13 of this EIAR identify the potential significant environmental effects that may occur in terms of Population and Human Health, Biodiversity, Land, Soils and Geology, Hydrology and Hydrogeology, Air and Climate, Noise and Vibration, Landscape and Visual, Cultural Heritage and Material Assets, as a result of the Proposed Development. All of the potential significant effects of the Proposed Development and the measures proposed to mitigate them have been outlined in the main EIAR. However, for any development with the potential for significant environmental effects there is also the potential for interaction between these potential significant effects. The result of interactive effects may exacerbate the magnitude of the effects or ameliorate them or have a neutral effect.

A matrix is presented in Chapter 14 of the EIAR to identify interactions between the various aspects of the environment already discussed in the EIAR. The matrix highlights the occurrence of potential positive or negative impacts during both the construction and operational phases of the Proposed Development. Where any potential interactive impacts have been identified, appropriate mitigation is included in the relevant sections (Chapters 5–13) of the EIAR.