

Sure Partners Limited

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

**ENVIRONMENTAL IMPACT
ASSESSMENT REPORT**

VOLUME II

Chapter 17 Material Assets

ARUP

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Renewables

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17 Material Assets

17.1 Introduction

This chapter describes the material assets in the form of land use and utilities that could potentially be affected by the proposed development. Mitigation measures are proposed where required and the predicted residual effects are described.

A detailed description of the proposed development including construction, operation and decommissioning is provided in **Chapter 5** *Description of Development*. Construction methodology is described in **Chapter 6** *Construction Strategy*.

17.2 Assessment Methodology

17.2.1 General

Material assets are defined in the Environmental Protection Agency (EPA) (2015) *Advice Notes for Preparing Environmental Impact Statements* as “Resources that are valued and that are intrinsic to specific places.”

Section 3 of the EPA (2017) *Draft Guidelines on the information to be Contained in Environmental Impact Assessment* (EPA Draft Guidelines) states: “Material assets can now be taken to mean built services and infrastructure.”

The purpose of this assessment is therefore to consider the likely significant effects of the proposed development on existing services and infrastructure, including:

- Land Use and Properties;
- Electricity;
- Telecommunications;
- Gas;
- Water Supply Infrastructure; and
- Foul and Surface Water Drainage.

Potential land-use issues include severance, loss of Rights of Way or amenities, conflicts, or other changes likely to ultimately alter the character and use of the surroundings.

Material assets of natural origin are addressed separately in other chapters of this EIAR, such as **Chapter 7** *Air Quality*, **Chapter 8** *Climate*, **Chapter 9** *Land and Soils*, **Chapter 10** *Water*, **Chapter 12** *Biodiversity* and **Chapter 16** *Resource and Waste Management*. Traffic and transport assets are considered in **Chapter 13** *Traffic and Transportation*.

17.2.2 Guidance and Legislation

This chapter has been prepared having regard to the overarching EIA Guidance as described in **Chapter 3 EIA Methodology**. The significance of effects has been determined based on the severity of potential disturbance to existing material assets.

Using the EPA Draft Guidelines and taking account of aspects which are covered in other chapters of this EIAR, the material assets considered herein address built services and infrastructure (including electricity, telecommunications, gas, water supply infrastructure and sewerage) and land use.

17.2.3 Study Area

The study area is the area inside the planning (red line) boundary, from Johnstown North to Shelton Abbey, and the surrounding areas, the material assets of which could be affected by the proposed development. An overview of the proposed development, location and surrounding area is included in **Figure 5.1 of Chapter 5 Description of Development**.

17.2.4 Significance Criteria – Land Use and Properties

The assessment of land use effects considers any significant existing trends evident in the overall growth or decline of various land uses, or any changes in the proportion of one type of activity relative to any other. Consideration is also given to any residential, commercial or sensitive land use activities and zoning which are likely to be directly affected, including any resultant environmental effects.

The location of any sensitive neighbouring occupied premises likely to be directly affected, and other premises which although located elsewhere, may be the subject of secondary effects such as alteration of traffic flows or increased urban development is also considered.

The assessment of land use effects is carried out in accordance with the criteria outlined in **Table 17.1**, based on the EIA Guidance, modified specifically to address land use.

Table 17.1: Significance criteria for likely significant effects on land use

Significance Level	Criteria
Significant Negative	An effect that would substantially affect land use and property.
Moderate Negative	An effect that causes a noticeable negative change to the character of land use in the area (including business and trading environment)
Slight Negative	An effect that causes noticeable negative changes in business or premises without affecting trade.
Imperceptible	No appreciable effects on land use (property use and operation)
Slight Positive	An effect that causes noticeable positive changes in land use or property without affecting trade

Significance Level	Criteria
Moderate Positive	An effect that causes a noticeable positive change to land use (character, intensity etc) (including business and trading environment)
Significant Positive	An effect that would substantially positively affect land use (causing positive changes in property, intensity and nature of use and attractiveness of business or trading patterns).

17.2.5 Significance Criteria - Utilities

The significance criteria used to categorise significant effects on utilities is set out in **Table 17.2** and has been developed based on the description of significant effects as outlined in the EPA guidance.

Table 17.2: Significance criteria for likely significant effects on Utilities

Significance Level	Criteria
Imperceptible	An effect capable of measurement but without significant consequences.
Not significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics

17.2.6 Impact Assessment Methodology

In order to determine the existing utilities and services within the proposed development site, utility investigations have been undertaken. A desk study, site visits and site-specific investigations were undertaken to provide the data to compile the description of the existing material assets. These survey findings were reconciled with the relevant utility records.

Consultation with utility providers was undertaken in 2020, where applicable to determine the location and details of existing utilities including power, gas, surface and wastewater sewers, telecommunications, public lighting and infrastructure within the planning boundary.

Having identified the existing material assets associated with the site and study area, the likely significant effects of the construction, operation and decommissioning of the proposed development on those material assets was determined.

The likely significant effects of the proposed development on material assets have been assessed in the context of the significance criteria set out in **Table 17.1** and **Table 17.2**.

17.3 Baseline Environment

This section describes the existing environment of the study area prior to the implementation of the proposed development.

17.3.1 Land-Use and Properties

The land at the landfall and along the proposed cable route is primarily zoned as agricultural with some single residential dwellings. Some sections of the route are zoned as mixed land use and new residential, with some small sections of the route passing through areas that are primarily urban in nature, where the cable route is in public roads within Arklow. The urban areas are made up of employment areas (according to the Arklow and Environs LAP 2018-2024), residential areas and commercial areas.

Land use is dominated by intensive agriculture and the field size is generally large with few internal hedges. Arable crops predominate. The substation site is located within an industrial area of Avoca River Business Park where the land is zoned for ‘employment.’

There is an access culvert under the M11 motorway in the vicinity of the cable route at Kilbride, c. 600m west of the Kilbride Industrial Estate. This culvert provides access between two parcels of land severed by the motorway.

17.3.2 Utilities

The following utilities are of relevance to the proposed development:

- Electricity;
- Telecommunications;
- Gas;
- Water supply infrastructure; and
- Sewer network and drainage infrastructure.

17.3.2.1 Electricity

ESB maintains both underground and overhead lines within and around the site of the proposed development. ESB’s infrastructure in proximity to the proposed development includes the following:

- 220kV overhead lines connecting into and running from the proposed substation site in the Avoca River Business Park to the existing Arklow substation site;

- A number of overhead lines which run into the existing Arklow substation from Arklow and from the west of the M11;
- Two overhead lines at Seabank running to the west of the M11; and
- A number of underground lines within the Tiknock residential area.

17.3.2.2 Telecommunications

There are telecommunication cables in close proximity to the proposed development at the following locations within and around the site:

- Telecommunications cables running along Beech Road;
- Telecommunications cables running along Kilbride Road to the proposed substation site;
- Telecommunications cables running along the R750 between the sea and landfall;
- Telecommunications cables running along the R772 close to the proposed Horizontal Direction Drilling (HDD) crossing location; and
- Telecommunications cables running along Vale Road.

17.3.2.3 Gas

The cable corridor crosses three Gas Networks Ireland (GNI) gas pipelines:

- The cable corridor crosses a 180mm HDPE pipeline along Forrest Road. The 4bar gas pipeline is approximately 1m below ground level, except at the M11 HDD crossing, where depth of cover increases to around 2.5m at this location.
- A gas pipeline will be crossed by the HDD crossing of the R772 and Templerainy watercourse.
- The gas pipeline at the M11 will also be crossed.

There are gas pipelines in close proximity to the proposed development at the following locations within and around the site:

- Gas pipelines throughout the residential area of Tiknock;
- Gas pipelines running either side of the M11;
- A gas pipeline running along Beech Road to the Avoca River Business Park; and
- Gas pipelines throughout the Kilbride Industrial Estate.

17.3.3 Water Supply Infrastructure

There is water supply infrastructure in close proximity to the proposed development at the following locations within and around the site:

- A watermain running along the R772;

- Watermains within the pathway parallel to the canal from Avoca River Business Park to Arklow town; and
- A watermain running along Beech Road adjacent to the Kilbride Industrial Estate.

17.3.4 Sewer Network and Drainage Infrastructure

No wastewater infrastructure currently serves the proposed development area.

17.4 Proposed Development

17.4.1 Aspects of the Proposed Development of Relevance to Material Assets

Chapter 5 *Description of Development* provides a full description of the proposed development and **Chapter 6** *Construction Strategy* describes the construction strategy for the proposed development. The following aspects are particularly relevant to the material assets assessment:

Design:

- Proximity of the proposed development to existing material assets;
- Land-use requirements.

Construction:

- Temporary land-take/ access restrictions;
- Diversions required to undertake construction activities in the vicinity of existing material assets;
- Intrusive construction activities occurring in proximity to existing material assets.

Operation:

- Temporary land-use/access restrictions for maintenance works.

Decommissioning

- Temporary land-take/access restrictions; and
- Diversions required to undertake construction activities in the vicinity of existing material assets.

17.4.2 Land Use and Properties

Construction of the proposed development will require temporary land take to accommodate construction activities. Land will be temporarily required to accommodate construction compounds and temporary on-site activities.

The Developer has secured rights to and will acquire lands at the landfall, at Johnstown North to allow permanent access to the transition joint bays for future maintenance. There will be a permanent wayleave required along the cable route to allow access for future maintenance.

Most of the cable route is routed across agricultural land whereby the width of the permanent wayleave will be c. 15m and the agreed temporary cable construction corridor will be c. 30m. The cables will be routed within the permanent wayleave corridor. The Developer has acquired the rights and will permanently acquire the lands at the proposed substation site.

The Developer will require (on behalf of the Transmission System Operator) a permanent wayleave corridor of 53m along the overhead line loop-in connection to allow access for future maintenance. A permanent 4m corridor within this wayleave, directly under the overhead line, will be kept clear at all times.

The existing land-use and property aspects relating to the proposed development are described in **Chapter 5** *Description of Development*.

The effects of the proposed development on land use and properties are addressed in **Section 17.4.1** below.

17.4.3 Utilities

The proposed development comes within close proximity to existing utilities. If utilities are required to be diverted, this will be undertaken, either by the contractor or by the utility owner.

Any area to be excavated will be subject to a utility search and CAT (cable avoidance tool) scanning.

Services, if any, subject to utility searches and investigation during design, will be exposed using intrinsically safe excavation methods i.e. vacuum or hand excavation. Protection methods (subject to design and agreement with service owner, such as steel plating, concrete slab etc.) may be installed if required.

While no utilities are expected to require diversion at the substation site, if any existing utilities are identified as requiring diversion, this will be undertaken either by the contractor or by the utility owner.

17.4.3.1 Electricity

The connection and transmission substation compounds will require power to operate. There will be house transformers and standby diesel generators provided in both the connection and transmission substation compounds. A back-up electricity supply will be required for the transmission compound. This will be via a small unit substation and underground cable circuit from the existing 110kV substation that is immediately adjacent to the new onshore 220kV substation of the proposed development.

Where possible during the construction phase, the working areas will be powered by existing mains supplies, but if not available, via a diesel generator.

Typically, one 20,000 litre tanker for the delivery of diesel to the site compounds will be required each week.

Where the cable route passes beneath existing overhead services, suitable fencing and guarding will be installed during construction in accordance with best practice.

When connecting the substation to the transmission network the works will involve the permanent diversion of a short length of the existing 220kV overhead line between Arklow substation and the Lodgewood substation. To facilitate this diversion, EirGrid will place the overhead line in a pre-scheduled, defined duration, outage. This outage will be planned by EirGrid to ensure grid stability is maintained.

17.4.3.2 Telecommunications

A new telecommunications mast, maximum 50m high, will be required in the connection compound at the substation site.

The fibre optic cables laid along the cable route will be used for operation and control purposes.

There is no interaction with existing telecommunications infrastructure.

17.4.3.3 Gas

No gas connection will be made for the proposed development.

Where the cable corridor crosses the gas pipeline along Forrest Road, the crossing will be achieved by use of an open cut trench, undertaken by hand digging.

There will be a gas pipeline crossed by the HDD works across the R772 and Templerainy watercourse. The gas pipeline at the M11 will be crossed by either open cut trench or HDD.

The crossing methodologies will be in accordance with the GNI Safety Advice for Working in the Vicinity of Gas Pipelines. GNI will be contacted in advance of any crossing works commencing, to ensure relevant GNI procedures are adhered to and so that a GNI inspector can be present for the duration of the pipeline crossing works. The construction methodologies are detailed in **Chapter 6 Construction Strategy**.

GNI will be contacted during the detailed design phase and in advance of any tower works commencing, primarily to ensure relevant GNI procedures are adhered to but also so that a GNI inspector can be present for the duration of the pipeline diversion works.

The diversion and precautionary measures taken are detailed in **Chapter 6 Construction Strategy**.

17.4.3.4 Water Supply

Potable water for the substation site will be provided by an Irish Water watermain, which will connect to the existing watermain outside the perimeter of the substation site. The watermain will connect to the welfare facilities in the connection GIS substation and transmission GIS substation buildings. This will require an upgrade to an existing 2inch (c. 50 mm) diameter watermain which will require to be upsized to a 100mm diameter watermain. These Irish Water Upgrade Works have been considered throughout the EIAR in terms of the cumulative assessment with the proposed development.

Potable water will be supplied to the temporary construction compounds from Irish Water mains where available nearby. Depending on the timing of the upgrade works this connection may not be feasible at the substation construction compound during the construction phase. If a connection to the local watermain is not feasible stored potable water will be transported to site and will be refilled as required. Typically, one delivery each week will be required for the provision of potable water.

Grey water for construction and toilets will be sourced via rainfall collection or transported via tanker to site.

Any potable water supplies, affected by the works, will be reinstated as soon as is feasible, or an alternative supply provided on a temporary basis until the permanent supply can be reinstated. Where access to drinking troughs for animals is severed by the works, an alternative supply will be provided until the original supply is reinstated.

17.4.3.5 Sewer Network and Surface Water Drainage

Sewage Disposal

Wastewater will be collected independently from the welfare facilities in each of the transmission and connection compounds within the proposed substation. The wastewater will be stored temporarily in holding tanks and removed from site periodically, by a licensed service provider, to a licensed wastewater treatment facility. The substation will be unmanned with only occasional maintenance staff onsite, therefore, it is expected that the wastewater generated will be minimal.

The temporary construction compounds will store wastewater in holding tanks, which will be emptied on a regular basis (typically bi-weekly) by licensed contractors and disposed of appropriately.

Surface Water

To control surface water runoff from the site during construction, temporary drainage will be installed.

The permanent drainage at the substation site will be installed after the Geosynthetic Clay Liner (GCL) is installed as part of the platform construction as described in **Chapter 6 Construction Strategy**.

- Maintenance work on the existing drainage network and attenuation pond may be required. This is expected to include de-siltation of existing channels and the attenuation pond to be used as part of the work and will either be completed by an excavator or hydro-vac. The silt will be removed from site as required, to an appropriately licensed disposal facility.
- Other maintenance work such as water jet cleaning of existing drainage culvert pipes to remove any blockages or debris, replacement of damaged culvert pipes using equivalent size twin walled HDPE or precast concrete pipes and the shoring up of culvert pipe headwalls may also be required.

Land Drainage

Any existing field drainage crossing the landfall site will be temporarily diverted or facilities put in place to over-pump to settlement ponds prior to discharge of treated water into the existing surface water drainage system.

Where existing drainage is present along the cable route, whether in open ditch or buried field drains, these will be temporarily diverted, or facilities put in place to over-pump to the temporary surface water drainage system.

Field drains will be reinstated on completion of the works or new drainage installed to match the drainage characteristics of the ground prior to development, to ensure agriculture is not affected. Landowners will be consulted on the proposed drainage provisions prior to any installation.

17.5 Likely Significant Effects

17.5.1 Do-Nothing Scenario

In the scenario where the proposed development does not proceed as planned, none of the effects as set out in this chapter would occur. Under the ‘do nothing’ scenario, the material assets baseline as presented in **Section 17.3** would persist and no significant effects would arise.

The positive effects from the provision of an additional renewable energy source resulting from the proposed development, would also not arise.

17.5.2 Construction Phase

17.5.2.1 Land Use and Properties

Direct Effects

Chapter 5 Description of Development provides information on the extent of the temporary and permanent change of land use for the proposed development. It also describes the wayleave arrangements along the cable route.

For the installation of the cables, the temporary cable construction corridor along the cable route will be fenced-off on a phased basis and this land will not be available for its current use for the duration of the construction phase.

Similarly, the construction compounds will be fenced off and the area of the compounds will not be available for their current use for the duration of the construction phase. Apart from the access tracks to the jointing bays, which will be retained as permanent access tracks, the land will be returned to its original condition and use after the works are complete.

Construction phase effects on land use and property, within the planning (red line) boundary, are expected to be significant, negative and short-term for the duration of the construction phase.

There will not be a direct negative effect on property, or the use of any land, outside the planning (red line) boundary of the proposed development during the construction phase.

The construction phase will generate approximately 165 jobs. Construction workers would be expected to travel from Arklow, the other towns in the County, and further afield. There will also be potential for short-term increased demand for rental property and accommodation in the region, if available. This will be a local **short-term significant positive** effect.

Indirect Effects

There is the potential for dust and noise emissions from the construction works to have an indirect effect on land use in some locations in the vicinity of the proposed development. These potential dust and noise effects, which would be very localised, are addressed in **Chapter 7 Air Quality** and **Chapter 11 Noise and Vibration**. Effects on traffic and transportation in the area of the proposed development are discussed in **Chapter 13 Traffic and Transportation**.

Given the implementation of mitigation measures, as outlined in **Chapter 7 Air Quality**, **Chapter 11 Noise and Vibration** and **Chapter 13 Traffic and Transportation**, the indirect effects on land use and property from dust emissions, noise and traffic associated with the construction of the proposed development are expected to be **slight, negative, and temporary**.

17.5.2.2 Utilities

Direct Effects –Electricity

Where possible, the working areas will be powered by existing mains supplies, but if not available, via a diesel generator. The mains supply in the area is expected to have adequate capacity for any proposed requirements.

With the potential use of existing mains supplies for works areas, it is predicted that the proposed development will have a **slight negative, short-term** effect on electricity supplies during the construction phase.

Direct Effects – Telecommunications

The telecommunications network in the area surrounding the proposed development comprises overhead telecommunications cables and underground telecommunications cables and fibre optic cables.

The surrounding area is served by mobile phone networks. The construction works along the cable route will be served by the mobile phone networks. There will be a new telecommunications mast required in the substation site.

The population of the electoral districts in the vicinity of the proposed works, as presented in **Chapter 18** *Population and Human Health*, in 2016 was 13,163. The vast majority of these are expected to have mobile phones. The additional approximately 165 construction workers are not expected to have a significant negative impact on the mobile phone services in the area. It is not expected that there will be any disruption to existing telecommunications near the proposed development.

Where the cable route passes beneath existing overhead telecommunications services, suitable fencing and guarding will be installed during construction in accordance with best practice. There may be interaction with telecoms in a number of locations during the construction phase. Local rerouting will be carried out to ensure no disruption to services.

Therefore, it is expected the proposed development will have **imperceptible** effects on telecommunications services during the construction phase.

Direct Effects – Gas

The cable corridor crosses GNI pipelines as detailed above. The precautionary measures for the gas pipeline crossing and possible diversion are described in **Chapter 6** *Construction Strategy*.

No gas connection is required for the proposed development.

While there may be minor disruption during the pipeline crossings, any disruption will be minor in nature and as a result, the proposed development will have, at most, a **short term, negative** effect on gas services during the construction phase of the proposed development.

Direct Effects – Water Supply

Potable water will be supplied to the construction compounds from Irish Water mains where available. If a connection is not feasible, the water required in the works areas during the construction period will be transported to site. Water will also be required in these areas for wheel washes and/or for dust control in dry windy weather. Grey water for construction and toilets will be sourced via rainfall collection or transported via tanker to site.

Any potable water supplies, affected by the works, will be reinstated as soon as is feasible, or an alternative supply provided on a temporary basis until the permanent supply can be reinstated, as described in **Chapter 6** *Construction Strategy*. Therefore, it is predicted that the proposed development will have a **slight negative, short-term** effect on water supplies during the construction phase.

Direct Effects – Sewage Network and Drainage Infrastructure

The construction sites will store wastewater in holding tanks, which will be emptied on a regular basis by licensed contractors.

To control surface water runoff from the site during construction, temporary drainage will be installed. The licensed contractors will deliver collected wastewater to a wastewater treatment plant of suitable capacity for the duration of the construction phase.

Irish Water received planning permission for a Wastewater Treatment Plant (WwTP) in Arklow (Planning Reference PL.27 302556) which will have an ultimate capacity for 36,000 p.e. (population equivalent). The current wastewater treatment demand for Arklow is estimated at 17,000p.e. with domestic demand being 14,500p.e. and non-domestic demand being 2,500p.e. Therefore, this WwTP will, when constructed, provide appropriate wastewater treatment for Arklow and its environs. If this treatment plant is not operational at the time of construction, collected wastewater will be disposed of at alternative, suitably licensed facilities in the vicinity.

Therefore, the proposed development will have a **slight, short-term**, negative effect on wastewater treatment and drainage during the construction phase of the proposed development.

Direct Effects – Miscellaneous Underground Services

The proposed cable route will cross underground services and utilities. These have been identified through consultation with the utility providers. There is the potential for disruption to these utilities when the cable trench is being excavated. Some utilities may need to be disconnected for a brief period, with the agreement of the utility owner. With the implementation of the mitigation measures described in **Section 17.6** below, the effect on underground utilities is expected to be **slight, negative, short term**.

Indirect Effects

The construction phase will generate approximately 165 jobs, most of whom are expected to be from, or to reside in, the region for the duration of the construction phase. This will lead to short term increased demand for services and a greater use of material assets in the region. Given the sufficient network capacity and the temporary nature of the construction works the indirect effects are considered to be **local, short term** and **slight**.

17.5.3 Operation Phase

17.5.3.1 Land-use and Properties

Direct Effects

The substation site is c. 4 hectares. This land will be permanently acquired for the substation and will not be available for other uses.

Direct effects will also occur through operational restrictions on activities within the permanent wayleave width once the proposed development is operational.

The restrictions are essential for the safety of personnel and the integrity of the cables. These restrictions are outlined below:

- No building will be allowed within the c. 15m permanent wayleave width;
- No storing of materials or changing of ground levels will be allowed within the wayleave width (i.e. soil, sand, straw or hay);
- New utilities crossing the proposed cable route, must be agreed with the Developer;
- Any digging or excavations within the wayleave width must be agreed with the Developer;
- No planting of deep-rooted plants will be allowed within the wayleave width.

All restrictions within the wayleave width will be agreed with each landowner.

Normal farming activities will be able to proceed as usual within the wayleave width. The access tracks to the jointing bays will be retained and will be a permanent localised significant effect on land use. The effect will be neutral because the tracks will provide good all-weather access to the land in question, which will balance the negative effect of loss of the agricultural land use. There will be occasional access to the joint bays to test the cable or replace the cable if it becomes damaged.

One option being considered for the cable crossing of the M11 motorway is to run the cables within the existing access culvert. This culvert provides access between two parcels of land severed by the motorway. If the access culvert is used for the cable, it will no longer be possible to use the culvert to access the lands it currently serves. This is a permanent localised moderate negative effect on land use.

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

17.5.3.2 Utilities

Direct Effect –Electricity

There will be a lighting system and security lighting installed for illuminating the external area within the perimeter fencing. The proposed substation will have house transformers and stand-by diesel generators in both the connection and transmission compounds. A back-up electricity supply will be required for the transmission compound supplied by the existing 110kV substation that is immediately adjacent to the proposed substation.

There will only be a minimal demand on the existing power supply network during the operation of the proposed development at times when the wind farm is not producing.

The overall Project, if constructed, would supply an additional 520MW of renewable energy which would increase the capacity of the existing power supply network. This is enough electricity to supply 435,000 homes.

Therefore, the Project would have a **significant, long-term positive** effect on electricity supply in Ireland.

Direct Effects – Telecommunications

There will be fibre optic cables used for operation and control purposes. The substation will be unmanned.

The operation of the proposed development will not have a significant effect on the telecommunications network including the mobile networks in the area.

Direct Effects – Gas

The operation of the proposed development will not require a connection to a gas supply. Therefore, no effects on the gas supply will occur.

Direct Effects – Water Services

The substation will be unmanned, with only occasional staff on site for maintenance works. The water demand will be minimal and will be less than a domestic requirement. Water will be supplied to welfare facilities in the substation via an upgraded Irish Water watermain. Therefore, the proposed development will have a **long-term imperceptible** effect on water services during the operation of the proposed development.

Direct Effects – Sewerage Network and Drainage Infrastructure

The substation will be unmanned, with only occasional staff on site for maintenance works. Wastewater from welfare facilities in the substation will discharge to a holding tank, which will be maintained by a licensed contractor, and the contents removed at regular intervals to a licensed facility.

There are no storm water drains in the vicinity of the proposed development. Storm water will be discharged via an existing attenuation pond within the Avoca River Business Park as described in **Chapter 5 Description of Development**.

It is expected the proposed development will have a **long-term imperceptible** effect on sewage treatment and drainage during the operation of the proposed development.

Indirect Effects

The operation of the overall Project will supply an additional 520MW of renewable energy. The indirect effect will be to reduce the reliance on fossil fuels in Ireland.

17.5.4 Decommissioning

As mentioned in **Chapter 5 Description of Development**, once the proposed development comes to the end of its design life (50 years) it will be either refurbished, replaced or decommissioned.

If decommissioned, the equipment and all above ground structures at the substation site will be removed and the site returned to its previous state. Underground cables will remain in-situ as there would be more of an environmental impact in their removal.

The decommissioning activities will be somewhat similar to the construction activities but will not involve excavation or ground works. The workforce will be smaller than for the construction phase.

The footprint of the development will not change but the substation site will be available for a future development. As such, the potential impact on land and property will be positive.

The decommissioning activities will consume power, telecoms and water. Existing utility connections will be used, and their disconnection would be expected to be amongst the last actions in the decommissioning phase. The potential impact on utilities and services will be **imperceptible**.

The effect of the decommissioning phase will be the removal of the additional renewable energy supply in Ireland. It is possible that alternative renewable energy supply will be provided. In the absence of this reliance on fossil fuels will be continued and there will be a greater demand to the electricity supply network. This will be a significant negative effect.

17.6 Mitigation Measures and Monitoring

17.6.1 Mitigation

17.6.1.1 Construction Phase

Effects during the construction phase will be temporary in nature and last only for the duration of the construction works.

The Developer will require the contractor to put measures in place to ensure that there are no interruptions to existing services unless this has been agreed in advance with the relevant service provider. Adequate separation distances will be established between the cables and the existing services. Further methods that will be used to mitigate the risk of damage to existing services will be as follows.

- Assessing route records for existing assets to understand their depth, location and proximity to the planned cable trenches;
- The use of Ground Penetration Radar (GPR), to provide greater confirmation of the locations of existing assets;

- The use of trial holes, again to provide greater knowledge on the exact location of existing assets; and
- Full liaison with asset owners to discuss and agree clearances and where necessary designs.

Surface water management measures will be adopted at all the working areas, as outlined in **Chapter 10 Water**.

All works near existing services and utilities will be carried out in ongoing consultation with the relevant utility company or local authority and will follow any requirements or guidelines they may have.

17.6.1.2 Operational Phase

Due to the measures already incorporated in the design as outlined above, there will be minimal negative impact on services during operation. No mitigation measures will be necessary during the operational phase.

The restrictions on the activities which can be undertaken within the wayleave width cannot be mitigated. However, the wayleave width has been minimised.

17.6.1.3 Decommissioning Phase

The mitigation measures employed during the decommissioning phase will be the same as during the construction phase, where relevant, and updated to reflect the current good practice at that time.

17.6.2 Monitoring

Construction phase mitigation measures have been proposed to ensure that significant negative effects on material assets will be avoided, prevented or reduced during the construction of the proposed development.

Service providers have been and will continue to be consulted throughout the design and construction process. Requirements for each utility service will be agreed with the respective provider and a representative of the service provider will be present on site as necessary during the works for monitoring purposes.

The monitoring employed during the decommissioning phase will be the same as during the construction phase, where relevant, and updated to reflect the current good practice at that time.

17.7 Cumulative Effects

This section considers the potential for cumulative effects arising from the proposed development in association with other developments. Specifically, it considers a worst-case scenario, where both the proposed development and the proposed developments for which timelines are not known are under construction at the same time.

A tiered approach to the cumulative assessment has been undertaken, in which the proposed development is considered cumulatively with other projects as follows:

Tier 1 -

- ABWP Phase 2 Offshore Infrastructure;
- ABWP Phase 2 Operations and Maintenance Facility (OMF);
- EirGrid Grid Upgrade Works; and
- Irish Water Upgrade Works.

Tier 2 -

- Other relevant projects currently under construction;
- Other relevant projects with consent;
- Other relevant projects in the planning process; and
- Other existing projects that were not operational when baseline data were collected.

There are a number of development proposals identified that are currently permitted or proposed in Arklow that were not assessed in this chapter. The nature and scale of these developments are such that development of these projects in combination with the proposed development would not give rise to significant effects to material assets.

A summary of the cumulative effects is given in **Chapter 21 Summary of Cumulative Effects**.

17.7.1 Tier 1

17.7.1.1 Arklow Bank Wind Park Phase 2 Offshore Infrastructure and Operations and Maintenance Facility and Proposed Development

As outlined in the EIAR for the Arklow Bank Wind Park Phase 2 Offshore Infrastructure, the development is the subject of an existing foreshore lease, which does not overlap (in terms of area) with either the proposed development or the proposed Operations and Maintenance Facility. The developer for each of these projects will be Sure Partners Limited ensuring co-ordination between the developments, for which the appropriate land acquisition and foreshore consent will be obtained in advance of the works.

Considering the distance between each of these developments it is not expected there will be a cumulative demand on services and utilities with the proposed development. Therefore, it is not expected that there will be significant cumulative effects on material assets during the construction phase for the above Tier 1 projects.

The overall Project will have a significant **long-term positive** cumulative effect on renewable energy generation, during the operational phase, by providing an additional supply and reducing reliance on fossil fuels.

17.7.1.2 EirGrid Grid Upgrade Works and the Irish Water Upgrade Works and Proposed Development

It is assumed for the purposes of this assessment that the EirGrid grid upgrade works and the Irish Water watermain upgrade works will be undertaken in parallel with the proposed development works. The EirGrid grid upgrade works and the Irish Water watermain upgrade works to provide the potable water connection to the proposed development will ensure there is enough capacity to meet the demands of the proposed development. This will ensure there are no cumulative effects on material assets associated with Tier 1 projects during operation.

17.7.2 Tier 2

17.7.2.1 Developments within the vicinity of the Avoca River Business Park and the Proposed Development

There are a number of permitted and proposed developments in the vicinity of the Avoca River Business Park that have the potential to overlap during the construction phase. These developments include;

- the permitted Crag Digital Avoca Ltd data centre (Planning Reference 18940),
- the proposed Crag Digital Avoca Ltd data centre amended application (Planning Reference 201285),
- the permitted Rappel Enterprises Ltd office development (Planning Reference 138823),
- the permitted Harmony Timber Solutions Ltd office and factory development (Planning Reference 1954) and
- the proposed (not yet permitted) Crag Digital Avoca Ltd 110kV Substation (Planning Reference PL27.307256).

Therefore, there is potential for an increase in demand on services and utilities. However, given the existing capacity of local services, the proposed upgrade works and the limited demand from the developments individually, no significant cumulative effects on services and utilities are predicted during construction.

The substation works that are to be carried out are on existing artificial surfaces in the Avoca River Business Park which is in an area zoned for 'employment.' The Developer will ensure co-ordination with Crag Digital Avoca Ltd for the duration of the construction works to minimise any potential effects. This, together with the nature and scale of the other proposed developments, means that the Tier 2 projects within the vicinity of the Avoca River Business Park and the proposed substation will not have a significant cumulative effect on material assets during the construction phase.

Taking into consideration the low demand from the proposed development on services and utilities during the operational phase and nature and scale of the other proposed developments, as well as the increased electricity capacity from the operation of the overall Project, there are no significant cumulative effects on material assets predicted during operation.

As referenced above, Crag Digital Avoca Ltd has permission for a datacentre on the site adjacent to the proposed substation and has also applied for permission for an amended development on the same site. Both the permitted and the proposed datacentre development has one data hall located on the substation site, will not be built if the proposed development proceeds. It is not expected that this will have any change to the cumulative effects on material assets.

17.7.2.2 Flood Defence Embankment Works in the Avoca River Business Park

Maintenance and repair works may be required to the existing flood embankment around the Avoca River Business Park, as part of a regular inspection, maintenance and repair programme, to manage residual risk of flooding from a potential breach of the embankment. Investigations are to be undertaken which will determine the nature and scale of any works required. If required, such works will be undertaken in advance of the substation construction, with ongoing maintenance and repair thereafter, subject to regular inspection and monitoring.

There is potential for an increase in demand on services and utilities. However, considering the construction durations will not overlap and given the existing capacity of local services, no significant cumulative effects on services and utilities are predicted during construction.

Taking into consideration the low demand from the proposed development on services and utilities during the operational phase, there are no significant cumulative effects on material assets predicted during operation. Any maintenance and repair works will ensure that the flood embankment is not subject to a potential breach, ensuring the protection of the Avoca River Business Park from any potential residual flood risk.

17.7.2.3 All Tier 2 and the Proposed Development

Only the Tier 2 projects listed above were considered to have the potential for a cumulative effect with the proposed development with regard to material assets.

It is not expected that there will be significant cumulative effects on material assets caused by the Tier 2 projects and the proposed development.

17.8 Residual Effects

17.8.1 Construction Phase

Following implementation of the mitigation measures outlined above, it is anticipated that the proposed development will have no significant residual effects

(including cumulative effects) on land-use and property, electricity, telecommunications, gas, water supply or the sewer network and drainage infrastructure.

17.8.2 Operational Phase

The delivery of the proposed development will result in long-term significant positive effects on the electricity network of Ireland, and long-term slight negative effects on land use within the cable wayleave.

The overall Project will have a significant long-term positive residual effect on renewable energy generation by providing an additional supply and reducing reliance on fossil fuels.

17.8.3 Decommissioning Phase

The future permanent residual effect of the decommissioning phase will be the removal of the additional renewable energy supply. This will be a future significant negative effect.

17.9 References

Environmental Protection Agency (2017) *Draft Guidelines on Information to be contained in Environmental Impact Statements*

Environmental Protection Agency (2015) *Advice Notes for Preparing Environmental Impact Statements Draft*

Wicklow County Council (2018) *Arklow and Environs Local Area Plan 2018 - 2024*