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11 MATERIAL ASSETS

11.1 INTRODUCTION

The term 'Material Assets' can relate to both finite and renewable resources, which can be of natural or anthropogenic origin. Some of these resources, such as minerals, stone, soil, water, air, traffic & transportation, land use, human health and amenity resources are discussed in other chapters of the Environmental Impact Assessment Report (EIAR) (Chapter 5: Population & Human Health; Chapter 8: Land, Soils & Geology; Chapter 9: Hydrology & Hydrogeology; Chapter 14: Air Quality & Climate; and Chapter 16: Traffic & Transportation). Electromagnetism is discussed from a human health perspective in Chapter 5 (Population & Human Health). This chapter of the EIAR deals with Aviation and Telecommunications in addition to electricity and water infrastructure, and waste services.

The study area for this Chapter is that shown in Figure 1-1 of this EIAR.

11.1.1 Proposed Project

The proposed project is described in Chapter 2 of this EIAR (Description of the Proposed Project). The assessment is based on the tallest tip height and the largest rotor diameter. For the purposes of this assessment, any and all combinations of turbine dimension that could be built would be physically contained within this and therefore the full proposed range of turbine dimensions has been considered in this assessment. There is no other discernible differences to the assessment outcome of this Material Assets chapter from the turbine range considered as part of the proposed project, as the development components and construction process remain the same throughout. It includes the proposed Grid Connection Route (GCR) as well as the proposed works associated with the delivery of oversize components and materials to the wind farm.

11.1.2 Statement of Authority

This chapter has been written by Dr John Staunton and Oonagh Fleming. John is a Senior Project Manager and Environmental Scientist in TOBIN and has more than 15 years' postgraduate experience in both environmental research and consultancy. John holds a BSc and PhD in Environmental Science and has considerable experience in project managing and carrying out wind energy development assessments including the preparation of Material Asset impact assessment EIAR sections. He has co-ordinated scoping exercises with aviation authorities and telecommunication providers in numerous wind farm developments. Oonagh Fleming is a Graduate Environmental Scientist in TOBIN. Oonagh holds a B.A.(Hons) in Geography and Sociology from Trinity College Dublin. She has one year of experience as an environmental consultant and has been involved in EIA delivery on a range of projects including wind farms and solar farms.

This chapter has been reviewed by Orla Fitzpatrick, Technical Director in TOBIN's Environment and Planning Division. Orla is a chartered environmentalist with 22 years of experience and holds a BSc in Geophysical Science and a M.Sc. in Environmental Consultancy. Orla has considerable experience as technical approver of environmental deliverables for major infrastructure projects.

11.2 METHODOLOGY

- This EIAR chapter and the assessment contained within has been carried out in accordance with the appropriate guidance documentation as follows; Environmental Protection Agency's (EPA) Guidelines on the information to be contained in the Environmental Impact Assessment Reports (2022).
- Department of the Environment, Heritage and Local Government (DoEHLG), Wind Energy Development Guidelines (2006).
- Irish Wind Energy Association, Best Practice Guidelines for the Irish Wind Energy Industry 2012; and
- European Commission, Guidance document on wind energy development and EU nature legislation (November 2020).

It will also be able to adhere to the updated version of the Department of Housing, Planning and Local Government (DoHPLG), Draft Revised Wind Energy Development Guidelines (December 2019) should they be published before a decision is made on the planning application.

11.2.1 Aviation

The construction of large wind turbines near airports may have the potential to pose a physical hazard for frequently used flight paths, as well as pose an issue for nearby airport operations in relation to Obstacle Limitation Surfaces (OLS), Instrument Flight Procedures (IFPs) and Instrument Landing System (ILS) Calibration. Consultation is seen as the primary method of assessing the potential for effects on aviation. In order to determine any potential effects that the proposed project might have on aviation, the nearest airfields/airports were determined using an airfield catalogue[1], and a consultation exercise was carried out in January 2023 with key stakeholders. These included:

- Irish Aviation Authority (IAA);
- Department of Defence;
- DAA Cork Airport;
- AirNav Ireland.

11.2.2 Telecommunications

In order to assess if there would be any potential effects on the existing telecommunications networks, a consultation exercise commenced in April 2022 where a list of providers and stakeholders were sent information about the proposed project and were asked to inform the project team of any communication links or infrastructure that they have in the area, or if they had any other comments/concerns relating to the proposed project. This consultation exercise was carried out with the following extensive list of telecommunications stakeholders:

- Bigblu Satellite Broadband;
- Broadcasting Authority of Ireland;
- ComReg (Commission for Communications Regulation)[2];
- EIR;
- Enet Telecommunications (formally Airspeed);
- ESB Telecom Services;

[1] http://woodair.net/UK_Airfield_Catalogue/Airfields_Ireland.htm accessed 09/04/2024

[2] ComReg is the statutory body that regulates the communications sector (telecommunications, electronic communications, radio communications, broadcasting transmissions, and the postal sector) in Ireland.

- Fast com;
- Host Ireland;
- Imagine Networks Services;
- IAA;
- Magnet Networks;
- OpenEir;
- Pure Telecom;
- Radio Kerry;
- Ripplecom;
- RTE NL/ 2RN;
- Three Ireland (Hutchison);
- Towercom Ltd.;
- Viatel;
- Virgin Media;
- Vodafone.

Once feedback was received from the above, it was compiled into a datasheet. Further information was supplied where requested. Any transmission links or sites were noted and constrained out of the proposed wind farm site layout with appropriate buffers to ensure there is no potential for effects. Where no response was received, a number of reminders were sent to encourage engagement. Further information on telecommunication responses can be found in Appendix 11-1.

A desktop review of the ComReg Siteviewer[3] was undertaken to identify the nearest mobile telecommunication mast sites to the proposed wind farm site. Siteviewer is an interactive map of Ireland containing information on the location of every mobile telephone mast, as well as the operators and services provided at each. ComReg built and maintains Siteviewer using information provided by the mobile network operators.

11.2.3 Other Materials Assets

In order to assess the potential for effects to electricity, gas and water infrastructure and services, a scoping exercise was carried out to a number of key consultees, including Commission for Regulation of Utilities, Uisce Éireann, Tipperary County Council, and Waterford City and County Council. Full details of the scoping exercise that was carried out is provided in Chapter 1 of this EIAR (Introduction). The online maps[4] of the nationwide gas networks were reviewed to check the location of mains gas pipelines.

11.3 EXISTING ENVIRONMENT

11.3.1 Aviation

The nearest significant airport to the proposed project is Waterford Airport, located approximately 48 kilometres east of the proposed wind farm site, while Cork Airport is located approximately 58 kilometres to the west. The nearest airfield / airport related sites are Fethard Airstrip and Killenaule Airfield, both in Co. Tipperary. The former is a small private grass airstrip located approximately 28km northeast of the proposed wind farm site, with a runway pointing in a general east-west direction (not towards the proposed wind farm). Killenaule Airfield was a

[3] https://siteviewer.comreg.ie/#explore accessed 25/10/2023.

[4] https://www.gasnetworks.ie/home/safety/dial-before-you-dig/dbyd/ (accessed 12th September 2023)

small airfield located over 35 km north of the proposed wind farm site which is no longer in operation[5]. The consultation responses relating to the aviation consultees are listed in Section 1.8 of Chapter 1 of this EIAR (Introduction) and discussed below.

The IAA responded to the consultation advising that the Applicant engage with DAA Cork Airport and the Air Navigation Services Provider (ANSP), to make them aware of the project so they may screen it from an aviation safety perspective. They also requested that in the event of permission being granted, they be notified to agree an aeronautical warning light scheme, provided a copy of the as-constructed turbine coordinates and that they be given 30 days notice before any crane operations commence. Following this, Cork Airport were consulted as well as AirNav Ireland, the ANSP for Ireland since April 2023. AirNav Ireland provided a response to confirm that they had no observations to make. Cork Airport responded to ask for additional information on the proposed project, and they provided no further response (several reminders were sent requesting feedback on the project).

The Irish Defence Forces did not provide a response to the consultation.

Further details of these scoping responses can be seen in Appendix 1-4 of this EIAR.

11.3.2 Telecommunications

As described in Section 11.2 above, a comprehensive list of telecommunication operators were consulted to identify any potential effects to existing telecommunication links in the area. Table 11-1 provides information on all the responses received during this exercise, and any actions taken by the project design team resulting from these responses. Where no replies were received, a number of follow up emails were sent. Telecommunication scoping responses can be seen in Appendix 11-1.

Table 11-1:Telecommunication Providers Consultation information

Telecommunication Provider/Stakeholder	Consultee Response	Project Team Response to Comments Received
Bigblu Satellite Broadband	Reply received saying satellite broadband is not affected by turbines. It is not an issue.	n/a
Broadcasting Authority of Ireland	Reply received to say No FM transmission sites near the wind farm. No known issues with wind farms generally.	n/a
ComReg	Sent a list of the companies that operate in the area. This list was requested to be confidential.	List checked to ensure all were consulted.
EIR	Reply received 19/04/2022 indicating no effect anticipated	n/a
Enet Telecommunications (formally Airspeed)	Reply received 21/08/2023 with information relating to two links which were found to cross the site. They provided confirmation that the buffers to the links being used were acceptable.	Site layout design accounted for these links.

[5] Killenaule Airport Killenaule, live arrivals and departures online (aviatable.com))accessed 24th November 2023)

Telecommunication Provider/Stakeholder	Consultee Response	Project Team Response to Comments Received
ESB Telecom Services	No reply to date	n/a
Fast com	No reply to date	n/a
Host Ireland	No reply to date	n/a
Imagine Networks Services	Reply received 10/06/2022 indicating no effect anticipated	n/a
IAA	Reply received 2/02/2023 but no potential effects highlighted by them. They requested further consultation with DAA Cork Airport and the IAA-ANSP which was carried out. See section 11.3.1 above.	Further consultation carried out as requested.
Magnet Networks	No reply to date	n/a
OpenEir	No reply to date	n/a
Pure Telecom	No reply to date	n/a
Ripplecom	No reply to date	n/a
RTE NL / 2RN	Reply received 20/04/2022 indicating no effect anticipated. They request that should the development go ahead, a protocol be signed between the developer and 2RN	Protocol will be signed at pre-construction stage.
Three Ireland (Hutchison)	Reply received 09/06/2022 indicating no effect anticipated	n/a
Towercom Ltd.	No reply to date	n/a
Viatel	Reply received 29/09/2022 indicating no effect anticipated	n/a
Virgin Media	No reply to date	n/a
Vodafone	Reply received 17/05/2022 indicating no effect anticipated	n/a

Following receipt of the above telecom scoping responses, the design of the proposed project was reviewed and revised, as necessary, to minimise any potential for effects telecommunication networks. This was carried out by inputting all the constraint data that was received into GIS mapping software and ensuring that the proposed turbine locations would not be located within the appropriate buffers (which were confirmed by the telecom companies). These constraints, along with others gathered as part of the EIAR (such as ecological, hydrological and proximity to sensitive receptors, etc.) were used when refining the proposed wind farm site layout. Previous design iterations are discussed in Chapter 3 (Reasonable Alternatives).

The following sites were identified following the desktop review of the ComReg Siteviewer (see Section 11.2.2) within 10km of the proposed wind farm site:

- A loSite WD_2554 (Meteor)[6] – located in Cappoquin (situated c. 4 km south west);
- Site WT0038 (Three) and Site WD_2156 (Meteor) – located at Eaglehill (Knockarana) (situated c. 4.5 km east);

[6] ComReg SiteViewer notes operator as Meteor, this operator is now known as Eir Mobile.

- Site WT0042 (Three), Site WD_1915 (Meteor), and Site WD030 (Vodafone) – located at Deerpark Mountain (situated c. 7.2 km north east);
- Site TY074 (Vodafone) – located at Middlequarter (County Tipperary) (situated c. 3.7 km north);
- Site WT0141 (Three) – located at Lismore (situated c. 9.5 km south west).

Grid Connection

The proposed GCR will not have the potential to impact telecom links above. There is the potential that there may be some localised underground telecoms cables within the road, however none were identified during the consultation process.

11.3.3 Other Material Assets

No response was received from Waterford City and County Council or Tipperary County council during the scoping exercise relating to other Material Assets.

Uisce Éireann responded but did not specify any site-specific concerns relating to existing water supply networks. Some general EIAR considerations were included for consideration. The Commission for Regulation of Utilities did not respond with any specific requirements for any utility supply networks. Further details of the scoping responses that were received are provided in Chapter 1 of this EIAR (Introduction).

While there are some overhead electricity lines within the extent of the proposed project (Figure 1-1 of this EIAR), it is also possible that there might be some underground electricity cables discovered during the proposed works, particularly in or near public roads and houses or farmyards (such as along the proposed GCR and proposed areas of works on the TDR). Damaging an underground electricity cable may have the potential to cause serious harm or death (see Chapter 17). All proposed works being carried out on overhead or underground electricity cables will be done in consultation with ESBN/EirGrid, as required, and will comply with their guidance and best practice[7]. While none have been identified by any service providers it is assumed as a worst-case scenario that there are likely to be underground water pipes along public roads (particularly for the proposed GCR) as well as occasionally within agricultural land. Severing a water pipe, particularly a public supply pipe has the potential to interrupt local water supply in the area.

There were no gas network pipes found to be in the area surrounding the proposed wind farm site. There was a gas pipe found to be located adjacent to one of the proposed temporary works areas for the TDR on the Carrick Road Roundabout on the N25, near Waterford city (See Figure 11-1).

[7] Transmission Policies and Standards (eirgridgroup.com)/ Publications (esbnetworks.ie)

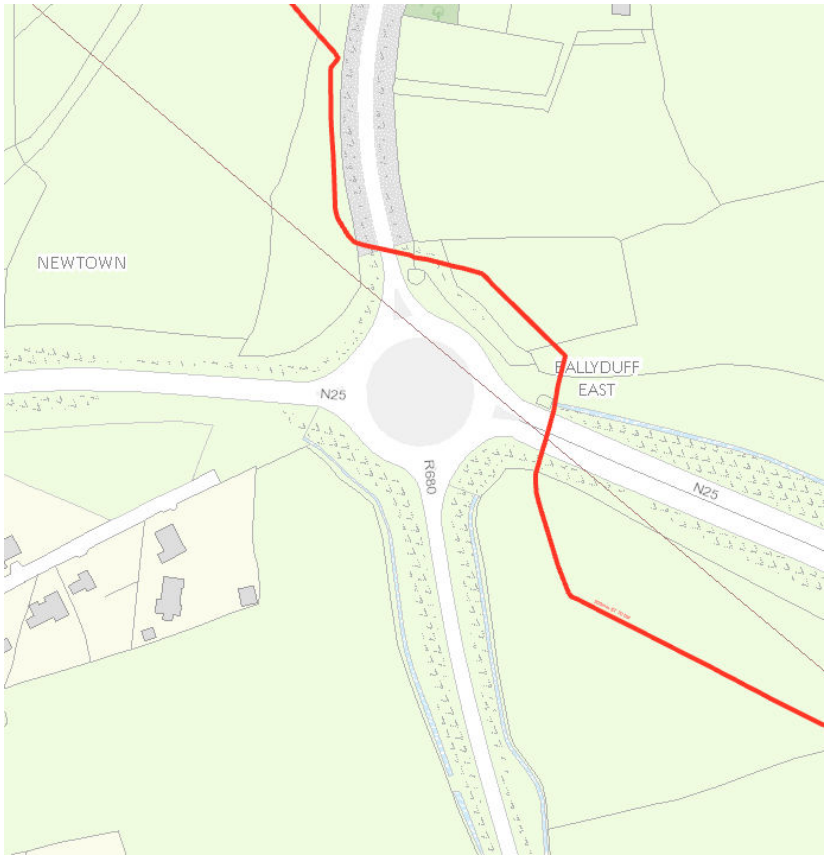

Figure 11.1 Gas mains line adjacent to Carrick Rd. Roundabout on the N25

A desk study of available information from the EPA was undertaken to identify any waste or industrial licensed facilities within a 10 km radius of the proposed wind farm site.

One waste site (currently active/licenced) was identified c. 6 km south of the proposed wind farm site, W0245-01 – Molaisin Compost Limited, Kilmolash, Cappoquin, Waterford . The next nearest site identified is c. 11.5 km south east of the proposed wind farm site. W0032-03 - Waterford City & County Council, Dungarvan Waste Disposal Site, Ballynamuck Middle, Dungarvan, Waterford.

Other licenced waste facilities operational within County Waterford, are primarily located east of the proposed wind farm site, in Waterford City and Tramore (both situated over 40 km east).

In terms of industrial licenced (IE / IPC) sites (currently active/licenced) the following sites were identified:

- P0414 - Fenor Pig Farms Limited, Tierney Farms, Caherbrack & Carrigroe, Ballinamult (c. 4.5 km north east);
- P0388 - Ballyhane, Cappoquin, Waterford (c. 2 km south);
- P0894 - Affane, Cappoquin, Waterford (c. 3.5 km south west);
- P0895 - Kilclogher, Cappagh (c. 4.5 km south east);
- P0447 - Ashleigh House, Ballynameelagh, Cappagh (c. 4.5 km south east).

Other IE / IPC licence records identified in the vicinity of the proposed wind farm site are no longer active (i.e., surrendered status).

Three quarries were identified within the vicinity of the proposed wind farm site and along the GCR:

- Roadstone Cappagh (c. 10.6 km south east);
- Kereen Quarry (c. 11.7 km south);
- Roadstone Kilmacow (64.7 km north west).

Grid Connection

There were no gas network pipes found to be in the area surrounding the GCR. While no major water or electricity services were highlighted during scoping along the GCR, there is a high likelihood that some sort of services will be encountered, as described above. Pre-construction detailed surveys will help identify the locations of these and hand digging will be used around them to avoid damage.

11.4 POTENTIAL EFFECTS

11.4.1 Do-Nothing Scenario

Should the proposed project not be constructed, there will be no potential for effect on aviation or telecommunications services, or other Material Assets. The existing lands will continue to be used for forestry and agricultural purposes with little or no significant changes anticipated in the baseline at the proposed wind farm site. The surrounding material assets infrastructure will not be significantly effected with ongoing forestry felling . The future baseline environment will remain mostly as it is presently, with areas of open peatland used for grazing and ongoing management of the forest in line with Coillte strategic forestry plans[8].

11.4.2 Construction Phase

11.4.2.1 Aviation

Taking into account the works proposed as part of the proposed project (including along the proposed GCR, or at the locations of the proposed works areas along the TDR), the consultation feedback which was obtained, and the location remote from aviation infrastructure, there will be no effects during the majority of the construction phase in relation to aviation. At the very end of the construction works, the use of cranes and erection of the turbines will have effects similar to the operational phase (see Section 11.4.3.1 below).

11.4.2.2 Telecommunications

Should any underground telecommunication services be identified within the proposed works areas, including at the locations of the works areas along the TDR, there may be a potential to damage these, resulting in interruption to local service provision. This would have the potential for a temporary slight negative effect.

The proposed wind farm site layout has been designed to avoid any effects to telecommunications links in the area, therefore, there will be no potential for effects during the majority of the construction phase (see constraints map in Figure 3-1 of this EIAR).

[8] https://www.coillte.ie/our-forests/public-goods/forest-plans/

Potential interference to communication links would be very limited in the construction phase and would only be possible in the final stages of construction when cranes are being used to erect the turbines, and when the turbines are up (prior to commissioning). This would have the potential for an unlikely temporary slight negative effect.

Grid Connection

Should any underground telecommunication services be identified along the proposed GCR, there may be a potential to damage these, resulting in interruption to local service provision. This would have the potential for a temporary slight negative effect.

11.4.2.3 Other Material Assets

It is not anticipated that any significant underground utilities will be encountered during the construction of the proposed project, with the exception of the locations within public road corridors, such as the locations of the works areas along the TDR, . In the unlikely event that any unknown services are discovered, there is potential to affect local network supplies, causing a brief slight negative effect.

Gas Networks Ireland (GNI) have previously (Sept. 2021) informed TOBIN that they had no issue with similar turbine delivery accommodation works within the centre of the Carrick Road Roundabout on the N25 near Waterford city (one of the proposed temporary road works locations to accommodate oversize load deliveries). The works footprint does not overlap with the gas pipelines near here. GNI have requested to be (and will be) re-consulted prior to commencement of construction.

During construction the locations of the pipes will be marked to ensure there are no ground works within the immediate areas of the gas lines. The gas transmission pipeline here exists within a 14m wide GNI wayleave, and any excavation within this would require a special permit from GNI. As the groundworks will not occur directly at the pipeline (the pipeline is outside the roundabout while works are within, >20m away), and excavations will be imperceptible (i.e. topsoil stripping only), there will be no potential for effect any gas pipeline.

During the construction phase, quantities of municipal waste (site office, canteen), wastewater (site welfare facility) and construction waste (wood, packaging, metal, etc.) will be generated, requiring management and collection and transport to appropriate waste management facilities. Details of required construction materials and any subsequent waste generated from the construction phase are provided and assessed as part of Chapter 8 (Land, Soils and Geology).

Based on the EPA Waste National Statistics – Summary Report for 2020, the average annual municipal waste generated per person in Ireland was 645kg[9]. As the municipal waste average accounts for household waste collections, an assumption of 50% of this average has been taken for an employee during construction. Based on a 2-year construction period and an average of 100 construction staff (Chapter 5, Section 5.4.2.1 references 87-101 staff during peak construction) each year, the maximum municipal waste generated for the proposed project is expected to be in region of 32,250kg. This is a worse-case assessment based on national statistics for the average person. Of this total, according to the national statistics total, 41% will be recycled, 43% thermally treated and 16% send to landfill, equating to the following over the construction period for the proposed project:

[9] National Waste Statistics – Summary report for 2020, EPA. [Accessed September 2023 EPA National Waste Stats Summary Report 2020.pdf]

- 13,223kg recycled,
- 13,868kg treated, and
- 5,160kg send to landfill.

The average flow rate for design (per person/day) is approximately 60 litre for an open construction site[10] based on the Uisce Éireann 2020 Code of Practice. The maximum total wastewater required, based on this and on construction staff being onsite 48 weeks of a year and an average of 100 construction staff, would be 1.4 million litres. Potable water would be supplied in large bottles for the wind farm site.

As shown during peak construction the quantities of waste and wastewater are not anticipated to be significant, and so a short-term imperceptible negative effect on local waste services is predicted. This effect will be permanent for any waste that goes to landfill.

Grid Connection

It is likely that underground utilities will be encountered during the construction of the proposed GCR. In the unlikely event that any unknown services are discovered, there is potential to have an effect on local network supplies, causing a brief slight negative effect.

11.4.3 Operational Phase

11.4.3.1 Aviation

The consultation exercise did not raise any specific operational phase concerns for the proposed project in relation to aviation. There would be potential for the proposed wind farm site to form a physical obstacle for air traffic in the local area. Local air traffic is limited and infrequent, with no significant airports situated near the proposed wind farm site; the nearest airfield / airport is located over 35 km north of the proposed wind farm site (Killenaule Airfield), though this airfield is not currently in operation.

As mentioned in Section 11.2, the IAA advised that the Applicant contact DAA Cork Airport, including the IAA-ANSP, to make them aware of the proposed project, so they may screen for any impacts on aviation safety and airport operation. They also asked that they be notified to agree an aeronautical warning light scheme, provide the as-constructed coordinates of the turbines and that they be given 30 days notice before any crane operations commence. Following this, DAA Cork Airport were consulted as well as AirNav Ireland (based at Cork Airport), who stated they had no observations to make.

Further details of the scoping responses that were received are provided in Chapter 1 of this EIAR (Introduction).

Grid Connection

The operation of the GCR would have no potential for effects to aviation.

[10] Code of Practice for Wastewater Infrastructure, Uisce Éireann, July 2020 (Revision 2). [Accessed September 2023 Wastewater-Code-of-Practice.pdf].

11.4.3.2 Telecommunications

Turbines can interfere with microwave communications link systems, as they can cause electro-magnetic interference and/or reflect and physically block microwave link signals. The most effective way to identify the presence of telecommunication links in the area is through consultation with the telecom / service providers and ComReg, as described above. Based on this consultation exercise, and that the proposed wind farm site layout has been designed to avoid any effects to the links which were determined to be in the area, it is not anticipated that the proposed project will have any effect on telecommunication links in the area.

In addition to major telecommunication links, wind turbines have the potential to have an effect on the delivery of telecommunication signals to end users, for example by preventing the radio or television signal reaching a house from a transmitter through electro-magnetic interference or physically blocking the signal. In the absence of any mitigation, this would result in an unlikely slight long-term negative effect.

Grid Connection

The operation of the GCR would have no potential for effects to telecommunications.

11.4.3.3 Other Material Assets

No significant excavations or works are proposed during the operational phase, therefore no effects on underground services are predicted.

The operational phase is anticipated to have an extremely low rate of production of municipal waste (compound office, canteen) and wastewater (site welfare facility) which will need to be processed at local waste processing facilities. The quantities of these wastes are anticipated to be significantly smaller than the construction phase, on the basis that once operational, it is estimated that the wind farm will support 2-3 long term, high quality technical jobs in operation and maintenance.

The maximum municipal waste generated each year for the proposed project is expected to be in the region of 968kg (based on 3 no. employees). This is a worse-case assessment for the proposed project based on national statistics for the average person. Of this total, according to the national statistics total, 41% will be recycled, 43% thermally treated and 16% send to landfill, equating to the following over the construction period for the proposed project:

- 397kg recycled,
- 416kg treated, and
- 155kg send to landfill.

Based on the Uisce Éireann 2020 Code of Practice average flow rate of 50 litres (per person/per day), wastewater from 3 staff welfare facilities, is estimated to be 36,000 litres/year, however as low-flow toilet cisterns and sink faucets would be used and staff may not be on site every day, it is anticipated that this volume will be lower on the proposed wind farm site. Wastewater will be removed as required by a permitted waste collector.

There will be a potential long-term imperceptible negative effect on local waste services. This effect will be permanent for any waste that goes to landfill.

Grid Connection

The operation of the GCR will have no potential for effects to other material assets.

11.4.4 Decommissioning Phase

11.4.4.1 Aviation, Telecommunication and Utility Services

There will be a short period while the turbines are being removed where they are still present, and cranes are used to remove them. During this time, there is a potential for similar effects to the operational phase to occur, albeit at a decreasing extent as turbines are removed. These effects will be short term and will have equal or lower significance than the operational phase effects. There are no other effects likely to arise during the decommissioning phase of the proposed project in relation to aviation, telecommunications, or other utility services (e.g., gas water and electricity supply networks). The turbines will be removed, and work involved in this phase will not involve significant excavations.

11.4.4.2 Other Material Assets

The decommissioning phase will have the potential to generate small quantities of municipal waste (site office and canteen), wastewater (site welfare facilities), and demolition waste (wood, packaging, and metal, etc.) which will require onsite management, and collection by suitably permitted waste collectors and processing at appropriately licensed waste management facilities.

Waste quantities generated during decommissioning will be greater than the construction and operational phases (considering the removal of turbines, met mast and other structures), however, these are largely composed of metal and other recyclable materials which will be transferred to specialised facilities for processing/recycling .

Turbine blades (fibreglass based), until recently, had limited scope for recycling. However, technology has advanced significantly and recently it has been announced that recyclable turbine blades have been developed and will be phased in over the coming years. Through these recent developments and ongoing research, it is expected that the turbine blades for the proposed project will be able to be fully recycled at their end of life. Any other non-hazardous and hazardous wastes (such as oils) will be collected by an appropriately permitted waste collector and transferred to a suitably licenced waste management facility. There will be a potential short-term slight negative effect on local waste services. This effect will be permanent for any fraction of the waste that goes to landfill.

Grid Connection

The decommissioning of the GCR will have no anticipated potential effects for material assets.

11.5 MITIGATION MEASURES

11.5.1 Construction Phase

11.5.1.1 Aviation

No effects on aviation are anticipated during the proposed construction phase Therefore no specific mitigation measures are proposed in terms of aviation.

11.5.1.2 Telecommunications

No telecommunication effects are anticipated for the construction phase of the proposed project. Therefore, no specific mitigation measures related to telecommunications are proposed

apart from the mitigation by avoidance which was carried out. In order to ensure there are no issues at construction, all telecom operators will be contacted in advance of construction to check that they have no new links in operation at that time. In the unlikely event that a communication underground cable or link is damaged or interfered with during construction, the operator will be contacted to agree a repair which will be carried out as soon as possible at the developers cost. In addition, the developer will sign an agreement with 2RN prior to construction to commit to restoring service to any end users that may have their service disrupted as a result of the proposed project. This is standard industry practice and will eliminate any potential effects in this regard.

11.5.1.3 Other Material Assets

As with any excavations, particularly in the public road network, there is a potential to disrupt local underground services. A confirmatory survey of all existing services (electrical/ESB, water/Uisce Éireann, gas/Gas Networks Ireland (GNI)) will be carried out prior to construction to verify the assumptions in this report and identify the precise locations of any services. The Applicant will liaise with the service provider where such services are identified. Digging around existing services, if present, will be carried out as per best practice/guidance[11] by hand to minimise the potential for accidental damage.

Segregation of waste will be carried out to maximise the potential for waste recycling and minimise potential effect on waste services. Suitably permitted commercial waste collectors will be employed to remove any waste arisings generated from construction to the nearest appropriately licensed waste management facilities within County Waterford. As noted in Section 11.3.3, the nearest waste facilities to the proposed wind farm site are located in Cappoquin (compost facility), Dungarvan Town and Waterford City.

Wastewater from the staff welfare facilities will be managed by means of a sealed storage tank, with all wastewater being tankered off-site occasionally (as required) by a permitted waste collector to a wastewater treatment plant. The permitted waste collector will also be responsible for ensuring clean water storage tanks are topped up. The proposed wastewater storage tank will be fitted with an automated alarm system that will provide sufficient notice that the tank requires emptying. It is proposed to use low volume flush toilets (such as those in commonly used port-a loos) and low volume sink faucets to significantly reduce the volume of waste water produced. In addition, the number of staff is likely to fluctuate rather than being constantly at 100 people per day, thereby reducing the volume of wastewater produced.

No other effects are predicted to arise during the construction phase, therefore, no other specific mitigation measures are proposed.

11.5.2 Operational Phase

11.5.2.1 Aviation

The Applicant will, as requested by the IAA, agree an aeronautical warning light scheme, provide the as-constructed coordinates of the turbines and give 30 days notice before any crane operations commence as requested. This was described in a consultation response from the IAA

[11] https://www.gasnetworks.ie/home/safety/dial-before-you-dig/

Transmission Policies and Standards (eirgridgroup.com)/ Publications (esbnetworks.ie)

in February 2023 (see Appendix 1-4). The details for this lighting will be agreed with the IAA and will be applied to the appropriate turbines and met mast. This will ensure the required visibility of the proposed project to any local aircraft. The final locations and dimensions of each turbine will be mapped and provided to Waterford County Council and stakeholders (including the IAA, Waterford Airport and Cork Airport) prior to erection to ensure that maps and databases are up-to-date for flight navigation.

11.5.2.2 Telecommunications

The proposed project is not anticipated to have any effect on any telecommunication links in the region due to the distance between the existing links and the proposed turbine locations. The applicant will sign an agreement with 2RN (who run Ireland's principal digital terrestrial television and radio broadcast networks) prior to commencement of construction to commit to restoring service to any end users that may have their service disrupted as a result of the proposed project. This is standard industry practice and will eliminate any potential effects in this regard.

11.5.2.3 Other Material Assets

Segregation of waste will be carried out during operation of the proposed wind farm site to maximise the potential for waste recycling and minimise any potential for effects on waste services. A licensed waste collector will be used to remove any waste that does occur as part of the operation of the proposed wind farm site. A low-flush cistern will be fitted to reduce the volume of wastewater produced and a rainwater harvesting system will be used as the source of water for this and hand-washing basin, with all potable water being brought onsite in bottles.

11.5.3 Decommissioning Phase

11.5.3.1 Other Material Assets

Segregation of waste will be carried out during operation of the proposed wind farm site to maximise the potential for waste recycling and minimise potential effects on waste management infrastructure.

Appropriately permitted waste collectors will be employed to remove any municipal waste, wastewater, or demolition waste generated within the wind farm site. The majority of wastes from decommissioned infrastructure will be recyclable, and the large items (turbines, met mast) will be collected and processed by appropriately licensed specialist companies with the capability to process these items correctly.

11.6 RESIDUAL EFFECTS

This section summarises the residual effects associated with the proposed project

11.6.1 Construction Phase

11.6.1.1 Aviation

No effect related to aviation is anticipated during the construction phase and no specific mitigation measures are proposed, as such, no residual effect is predicted in relation to aviation.

11.6.1.2 Telecommunications

There will be no residual effect on telecommunications following the implementation of mitigation measures during the construction phase.

11.6.1.3 Other Material Assets

Should any existing underground services be encountered during construction, particularly along the proposed GCR, or at the locations of the works areas along the TDR , the mitigation measures discussed in relation to underground services (see section 11.5.1.3) will be undertaken to reduce any potential residual effects to unlikely brief not significant negative.

A short-term imperceptible neutral residual effect is predicted with regard to waste services, with this being long term for any waste that goes to landfill.

11.6.2 Operational Phase

11.6.2.1 Aviation

With the implementation of the above mitigation measures, the proposed project will have no residual effects.

11.6.2.2 Telecommunications

No effect on telecommunications is anticipated during the operational phase due to the distance between the proposed turbine locations and the existing links in the area, and the requirement to not cause any impact to end users of telecommunication services by way of restoring the service. As such, no residual effect is predicted. In the event that a link/cable/end user had service interrupted, there may be a brief effect until it is fixed, however it will be the developers responsibility to fix any such issue as soon as possible.

11.6.2.3 Other Material Assets

A long-term imperceptible neutral residual effect is predicted with regard to waste services. This effect would be permanent for any fraction of the waste that goes to landfill.

11.6.3 Decommissioning Phase

11.6.3.1 Aviation, Telecommunications and Utilities

There are no effects likely to arise during the decommissioning phase and no specific mitigation measures are proposed. No residual effects are predicted in relation to aviation, telecommunications and utilities..

11.6.3.2 Other Material Assets

A short-term imperceptible neutral residual effect is predicted with regard to waste management infrastructure / services. This effect would be permanent for any fraction of the waste that goes to landfill.

11.7 CUMULATIVE EFFECTS

A cumulative assessment was carried out for the proposed project, to include the consideration of projects discussed in Section 4.6 of this EIAR. This included other wind farms in the region. Smaller scale development such as one-off dwellings and agricultural developments were also considered. The proposed Dyrick Hill Wind Farm (ABP Ref. 317265), the site of which is located directly adjacent to the currently proposed Scart Mountain Wind Farm site, was recently (October 2024) refused planning permission by An Bord Pleanála. As there is still a potential for judicial review at the time of writing this EIAR chapter (November 2024), it has been decided to include the project in the cumulative impact assessments. In the event that the refusal of the Dyricck Hill Wind Farm application is confirmed prior to the determination of the current application, then any discussions around cumulative impacts for this project in this EIAR can be ignored by ABP.

Telecommunication links, overhead services (telecommunication and electricity lines), underground services (telecommunications, gas, water and electricity) and aviation constraints are typically based on fixed infrastructure or well defined areas (i.e. these do not move) and any individual project either has a potential effect which it is required to mitigate, or it does not. As described above, a comprehensive list of consultees were contacted to ascertain the potential effect that the proposed project could have. The responses from these consultees were used to ensure that the proposed project will not have any significant effect on these services. In the unlikely event that any unforeseen effect does occur, it will be the responsibility of the Applicant to mitigate that effect (i.e. restoring telecommunication /television /water/electricity services). In the same manner, it is the responsibility of each Applicant for all projects considered in Section 4.6 of this EIAR to ensure that their project does not impact these services. Therefore, there were no potential cumulative effects identified for any part of the proposed project (including the proposed GCR, or at the locations of the proposed temporary road works to accommodate oversize load deliveries).

The location of any offsite replanting (alternative afforestation) associated with the proposed project will be greater than 10km from the proposed wind farm site. This was also considered here, but was found to have no significant cumulative effects due to this location requirement.

Other projects considered (Appendix 4-1 of this EIAR) have the potential to create varying volumes of waste from a number of waste categories, depending on the project. Waste volumes from the proposed project are anticipated to be generally low, with the exception of the decommissioning phase (primarily in relation to turbines and met mast). The majority of wastes from decommissioned infrastructure will be recyclable, and the large items (turbines, met mast) will be collected and processed by appropriately licensed specialist companies. Overall, there will be no significant cumulative effect on waste services.

11.8 SUMMARY OF THE EFFECTS

Following consultation with aviation, telecommunication and other material assets (water and electricity supply, gas, waste services, etc.) stakeholders, a number of potential areas of effects were identified. With the application of the mitigation measures outlined in this chapter, the proposed project will not result in any significant effects in relation to material assets at any stage of the proposed project (i.e. construction, operational and decommissioning phases).

References:

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