



Moyvannan Electricity Substation

Environmental Impact Assessment Report

Chapter 12: Material Assets

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12.1 Introduction

Material assets are defined as “resources that are valued and that are intrinsic to specific places” which can be of human or natural origin¹. While the meaning is less clear than other environmental factors, material assets are typically taken to mean *built services and infrastructure*². Roads and traffic are included because, in effect, traffic consumes road transport infrastructure. The majority of assets of natural origin are assessed elsewhere within this EIAR such as biodiversity, water quality, air quality and landscape etc. This chapter therefore specifically addresses material assets which are primarily of human origin and of relevance to the project, including transport and access; aviation; telecommunications; renewable and non-renewable resources; and utility infrastructure³. A further Material Asset of human origin, archaeology and cultural heritage, is addressed in **Chapter 10**.

12.1.1 Description of the Project

The project site is located in rural Co. Roscommon, approximately 8 kilometres (km) northwest of Athlone, c. 6km south of Lecarrow and c. 4km east and southeast of Curraghboy. In summary, the project comprises the following main components as described in full at **Chapter 3**:-

- A 110kV 'loop-in/loop-out' electricity substation;
- Approximately 270m of 110kV underground electricity line between the electricity substation and the Athlone-Lanesborough overhead transmission line and the provision of 2 no. interface masts;
- Approximately 7.5km of underground electricity line between the electricity substation and the permitted Seven Hills Wind Farm grid connection infrastructure; and,
- All associated and ancillary site development, access, excavation, construction, landscaping and reinstatement works, including provision of site drainage infrastructure.

The entirety of the project is located within the administrative area of County Roscommon; while construction material suppliers and candidate quarries which may supply the project are located nationwide.

12.1.2 Statement of Authority

This chapter has been prepared by various members of the Galetech Energy Services ('GES') Planning & Environment Team. GES has significant experience in preparing Material Assets chapters for multiple permitted and proposed wind energy and electricity transmission projects which have been subject to EIA (see **Chapter 1**).

¹ Draft Advice Notes for preparing Environmental Impact Statements (EPA, 2015)

² Guidelines on the Information to be contained in Environmental Impact Assessment Reports (EPA, 2022)

³ Waste Management is also a topic which may also be addressed as a material asset. However, the management of waste during the construction and operational phases of the project is addressed at **Section 3.5.5** and **Section 3.6** of **Chapter 3** of this EIAR.

12.2 Traffic & Transport

12.2.1 Introduction

12.2.1.1 Background and Objectives

GES has undertaken an assessment of the likely significant effects on transport and access arising from the construction, operation and decommissioning of the project.

This chapter provides an assessment of the local road network for construction, operation and decommissioning traffic and reviews the site access arrangements for the construction, operation and decommissioning phases.

12.2.2 Methodology

12.2.2.1 Assessment Methodology

This assessment uses the following method, further details of which are provided in the following sections:-

- Legislation and guidance review;
- Desk study, including a review of available maps and published information;
- Walkover of the electricity substation site and associated access point;
- Windshield survey of the underground electricity line route including a walkover survey of all noteworthy locations (e.g. road junctions and HDD location);
- Windshield survey of likely construction material haul routes (refer to **Chapter 2** and **Chapter 3** for further details on likely routes);
- Evaluation of likely effects;
- Evaluation of the significance of these effects; and,
- Identification of measures to avoid and mitigate any likely effects.

12.2.2.2 Planning Policy & Guidelines

This assessment has been prepared in accordance with guidance contained in the following published documents:-

- European Commission (2017) *Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report*;
- Department of Housing, Local Government & Heritage (August 2018) – *Guidelines for Planning Authorities and An Bord Pleanála on Carrying out Environmental Impact Assessment*;
- Environmental Protection Agency (September 2015) *Draft – Advice Notes on Current Practice (in the preparation on Environmental Impact Statements)*;
- Environmental Protection Agency (May 2022) – *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*;
- Roscommon County Council *Roscommon County Development Plan 2022–2028* ('the Roscommon CDP');
- Department of Housing, Local Government and Heritage – *The Design Manual for Urban Roads and Streets*;
- Transport Infrastructure Ireland *The Design Manual for Roads and Bridges*;
- Transport Infrastructure Ireland *Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated and compact grade separated junctions) DN-GEO-03060* (May 2023);
- Transport Infrastructure Ireland *Rural Road Link Design DN-GEO-03031* (April 2017); and,

- Transport Infrastructure Ireland *Traffic and Transport Assessment Guidelines*.

An assessment of the relevant transport policies and objectives of the Roscommon CDP are set out in **Table 12.1**, below. Policies and objectives which are not considered to be relevant have been excluded from further assessment.

Planning Policy / Objective	Comment
ITC 7.13: It is a policy objective of Roscommon County Council to:- Support and provide for improvements to the national road network, including reserving corridors for proposed routes, free of development, so as not to compromise future road scheme.	While the project does not provide for any improvements to the national road network, an assessment has been completed to determine whether it may impact upon any proposed improvements or road schemes.
ITC 7.16: It is a policy objective of Roscommon County Council to:- Require all applications for significant development proposals to be accompanied by a Traffic and Transport Assessment (TTA) and Road Safety Audit (RSA), carried out by suitably competent persons, in accordance with the TII's Traffic and Transport Assessment Guidelines.	The project will be undertaken to ensure that there are no adverse effects on the safety or capacity of the national road network. This assessment constitutes an assessment of effects on traffic and transport.
ITC 7.19: It is a policy objective of Roscommon County Council to:- Seek to implement the Road Improvement Schemes indicated in Table 7.2	The project has been assessed to identify any conflict with proposed road improvement schemes.

Table 12.1: Roscommon CDP Transport Policies and Objectives

12.2.2.3 Desk Study

A desk study of the project site; including electricity substation and underground electricity line route; and the surrounding area was undertaken. The sources of information included documentary sources, outlined at **Section 12.2.2.2**, and an evaluation of aerial imagery and visualisations (e.g. Google Maps and Streetview) to assess the nature and condition of the local road network.

12.2.2.4 Fieldwork

A site visit; including a windshield survey of the electricity line route; was undertaken on 19 June 2024. The site of the electricity substation, associated site entrance and noteworthy locations along the underground electricity line route were the subject of a walkover survey. The site visit was used to verify information obtained as part of the desk study.

12.2.2.5 Evaluation of Likely Effects

Following the assessment of the baseline environment, the available data was used to identify and categorise effects likely to occur as a consequence of the project.

The statutory criteria for the assessment of effects require that likely effects are described with respect to their magnitude, nature (i.e. negative, positive or neutral), transboundary nature (if applicable), intensity and complexity, probability, duration, frequency, reversibility, cumulation and possibility of reducing the effects. The descriptors used in this chapter are those set out in the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2022).

Effects may be categorised as follows:-

- Direct: where the existing traffic and transport environment in proximity to the project is altered, in whole or in part;
- Indirect: where the traffic and transport environment beyond the project is altered by activities related to the construction, operation, and decommissioning of the project; and,
- No Impact: Where the project has neither negative nor a positive impact upon the traffic and transport environment.

Sensitivity

The sensitivity of the local road infrastructure attributes have been identified using the criteria outlined within the TII Guidance. These criteria are outlined in **Table 12.2** below.

Importance	Criteria
Very High	Attribute has a high quality, significance or value on a regional or national scale.
High	Attribute has a high quality, significance or value on a local scale.
Medium	Attribute has a medium quality, significance or value on a local scale.
Low	Attribute has a low quality, significance or value on a local scale.
Negligible	Attribute has a very low quality, significance or value on a local scale.

Table 12.2: Sensitivity of Attribute Criteria

Magnitude

The magnitude of likely effects has been defined in accordance with the criteria provided in the EPA Guidelines as outlined within **Table 12.3** below.

Magnitude of Impact	Description
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	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends
Significant	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	An effect which obliterates sensitive characteristics

Table 12.3: Magnitude of Effect Criteria

Significance

The significance of the likely effects of the project have been classified by taking into account the sensitivity of receptors and the magnitude of the effects on them, combined with the likelihood of an event occurring as defined in **Table 12.4**.

Magnitude	Sensitivity of Receptor				
	Very High	High	Medium	Low	Negligible
Very High	Profound	Profound-Substantial	Substantial	Moderate	Slight

High	Profound-Substantial	Substantial	Substantial - moderate	Moderate-slight	Not Significant
Medium	Substantial	Substantial moderate	Moderate	Slight	Imperceptible
Low	Moderate	Moderate-slight	Slight	Not Significant	Imperceptible
Negligible	Slight	Not Significant	Imperceptible	Imperceptible	Imperceptible

Table 12.4: Significance of Effect Criteria

12.2.3 Description of Existing Environment

12.2.3.1 Site Location & Road Network Context

The road network in the vicinity of the project comprises a mix of national secondary, regional and local roads. In addition, the M6 motorway is located c. 4km to the south of the project and is likely to be utilised in the delivery of electrical equipment and other construction materials, subject to the selection of suppliers.

The N61 national secondary road, along which it is anticipated the majority of construction materials will be transported, is of a good condition and would appear to be subject to regular maintenance. It is also noted that the N61 is proposed to be subject to improvement works as described at Table 7.2 of the Roscommon CDP.

Regional roads in the vicinity of the project site; including the R362 and R363 which may also be utilised to transport construction materials; are assessed to be generally of good quality, however, localised evidence of surface deterioration was noted during fieldwork.

The R362 regional road is a relatively narrow two-lane carriageway generally bounded by hedgerows or stone walls. In rural areas, the road has a speed limit of 80kph and is not accompanied by pedestrian footpaths or street lighting. However, as the road passes through the settlement of Curraghboy, a reduced speed limit of 50kph is applicable and street lighting and footpaths are present.

The R363 regional road is also a two-lane carriageway predominately bounded by hedgerows. In rural areas, the road has an 80kph speed limit and there is no evidence of street lighting or pedestrian footpaths.

Access to the site of the electricity substation will, from the N61, be via the L7556 and L7551. The L7556 is a single-lane carriageway which is generally of good condition; however, there is evidence of surface deterioration at a number of locations. The L7551 is a narrow single-lane carriageway; bounded by hedgerows and stone walls; which appears to be lightly trafficked and is unlikely to be utilised by through-traffic. While the surface of the road displays a substantial degree of degradation, it is assessed to be of a sufficient condition for the likely volumes of traffic.

12.2.3.2 Access to the Project Site

As described above, access to the electricity substation site will be via the N61, L7556 and L7551. From the L7551, the site will be accessed from an existing agricultural access point. While the access point will not be required to accommodate any abnormal sized or weight loads, upgrade works will be undertaken to ensure ease of access and egress for HGVs delivering electrical apparatus and other construction

materials to the site. As part of the site entrance works, sight visibility splays of 70m in each direction will be provided to ensure that road and public safety is maintained which will require the trimming of roadside hedgerows. However, it should be noted that no hedgerow or stonewalls will require removal in order to provide appropriate visibility splays.

Access to the route of the underground electricity line will be via the L7551, L7556, L2018, L7731, and L7636 local roads and the R362 and R363 regional roads.

Site investigations have indicated that any rock which may be encountered during excavations will not be suitable for use in the construction process, thus, it is assessed that all rock/stone will be imported to the project site. Other construction material; such as ready-mix concrete, sand and tar and chips; will be sourced from local licensed quarries/suppliers, subject to a competitive tendering process.

As the selection of material suppliers will be subject to a competitive tendering process prior to construction, it is not possible to confirm the precise source of these materials. However, a number of candidate quarries have been identified as potential suppliers and are identified at **Annex 2.4**. In addition, the likely haul routes from these suppliers to the construction site entrances are also identified. While the haul routes do not always represent the most direct route, these routes have been selected to ensure, insofar as is practicable, that movements predominately occur on national and regional roads; and that local roads which may not be suitable to accommodate HGVs are avoided to the greatest possible degree. The Planning Authority will be advised of the selected material suppliers as part of the Traffic Management Plan to be agreed prior to the commencement of development.

Other material deliveries will use standard HGVs and utilise the local, regional and national road network, as necessary. Staff employed at the site will not be restricted to the use of specific roads as they will typically use light-goods vehicles (LGVs) or cars.

12.2.3.3 Delivery Vehicle Specification

The delivery of construction materials to the project site will generally be undertaken using standard HGVs with an overall length of c. 16.5m, as illustrated at **Figure 12.1** below. The transportation of aggregates (rock/stone, concrete, sand and tar & chips) will generally be undertaken by 8-wheel tipper trucks, as illustrated at **Figure 12.2**.

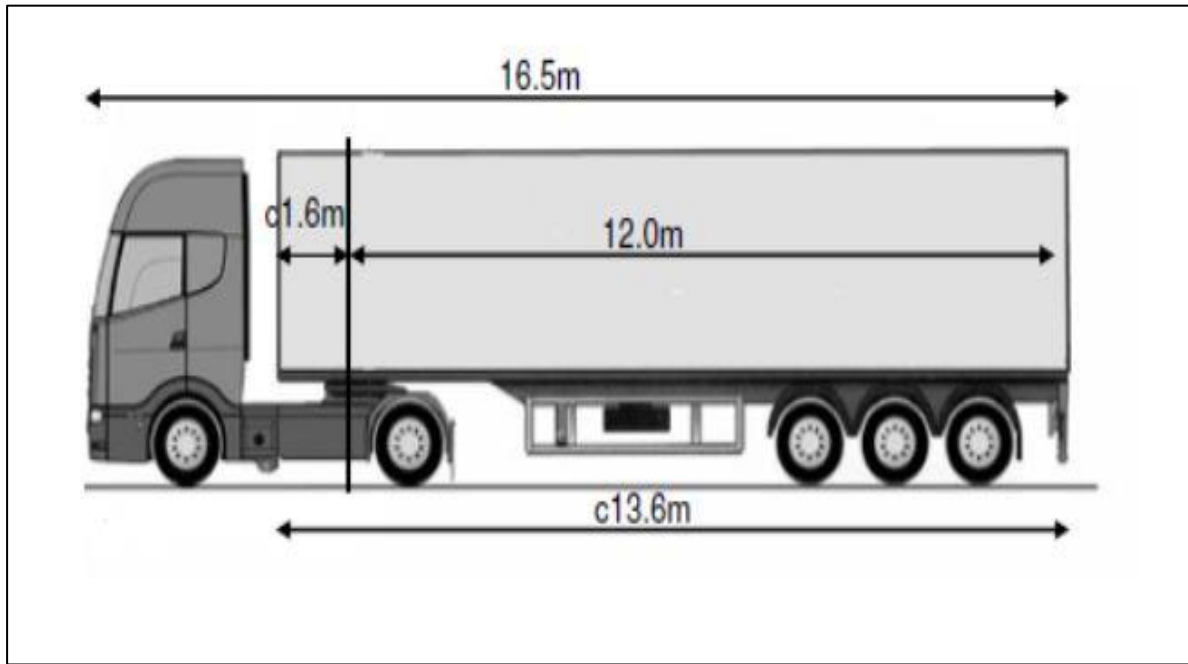


Figure 12.1: Standard HGV

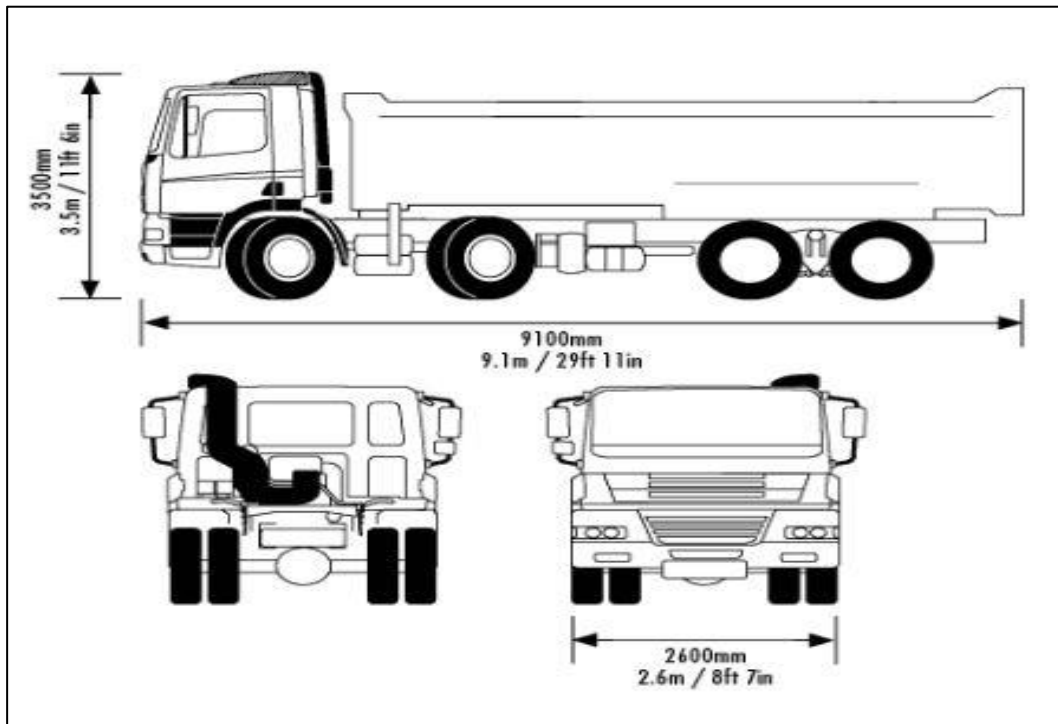


Figure 12.2: Standard Rigid Tipper Truck

12.2.4 Description of Likely Effects

12.2.4.1 Construction Phase

The construction phase of the project is estimated to last approximately 15-18 months, with the majority of traffic trips being associated with the construction of the substation compound, the removal of excavated material from the electricity line trench and the delivery of backfilling/reinstatement material for the trench. During this period, there will also be trips associated with the arrival and departure of construction staff and with the delivery of reinforcing steel, ready-mix concrete and electrical equipment. Staff trips will mainly be made using cars and vans, while deliveries of steel, concrete, electrical equipment and other general construction materials will be made by HGV.

The construction phase of the project will comprise a 6-day week with normal working hours from 07.00 to 19.00 Monday to Friday and 07.00 to 13.00 on Saturdays. It may be necessary to undertake works outside of these hours in the event of an emergency. Where construction activities are necessary outside of the normal working hours, local residents and the Planning Authority will receive prior notification.

Electricity Substation Site Entrance

As discussed in **Chapter 3**, an existing agricultural access point will be utilised to access the electricity substation. Due to the characteristics of the access point and the vehicles which will be accessing the site, no significant works are required, such as removal of existing roadside vegetation or stone walls. An existing agricultural gate and associated wire fencing will be removed to accommodate the upgrade of the existing access point. Appropriate visibility splays will be provided at the entrance as described at **Section 3.4.2 (Chapter 3)**.

All works related to the upgrade of the entrance will be undertaken within private lands which will ensure that there are no significant direct or indirect transport and

access effects on the road network through disruption or delay to traffic flows.

Consequently, the effects are assessed as not likely to be significant and likely to be not significant, negative and short-term.

Underground Electricity Line

The installation of the underground electricity line will result in both direct and indirect effects on transport and access. In terms of direct effects, trenches will be excavated within the paved surface of the respective carriageways to accommodate the installation of ducting and the electricity line. Additionally, excavations will be undertaken to facilitate the installation of joint bays. Where possible, joint bays will be installed within roadside verges or at field entrances; however, excavations within the paved surface is also likely to occur. Following the installation of the electricity line ducting, the trench will be backfilled with appropriate material and temporarily reinstated. Following the installation of the underground electricity line, all public roads within which it is proposed to install the underground electricity line will be subject to a full-width carriageway reinstatement (re-surfacing) of the relevant road section thus ensuring that there are no long-term effects on the public road network.

Additionally, it is likely that the movement of construction traffic along the route of the underground electricity line (e.g. tracked excavators) will result in a deterioration of the paved surface of the respective public roads. However, the full-width carriageway reinstatement referred to above will ensure that any deterioration is appropriately remediated such that there are no long-term effects on the public road network. It is assessed, therefore, that direct effects on transport and access (i.e. the road network) will be slight, negative and short-term (temporary).

Indirect effects on transport and access are assessed to primarily relate to traffic disruption arising from the construction of the project. During the installation of the underground electricity line, and due to the narrow profile of the local roads involved, full road closures will be implemented on a rolling basis as construction activities progress along the route. However, the section of road to be closed at any particular time will be short (c. 100m) and appropriate measures (such as diversionary routes and the maintenance of local access) will be implemented. Due to the characteristics of the R362, it is assessed that a single lane closure (with a 'Stop/Go' system or similar to be agreed with the Planning Authority) will be implemented during works along the R362; however, a road closure may be required on 1 no. occasion to facilitate the crossing of the carriageway by the underground electricity line.

Additionally, given the extensive road network in the environs of the route, diversionary routes are readily available; while local access for residents, landowners, and business operators will be maintained. Pedestrians will, where necessary, be escorted through the works area.

Due to the transient nature of construction activities, with trenching works anticipated to progress at a rate of c. 50m per day, it is assessed that disruption experienced at any given location will be temporary and will not be significant. Furthermore, with the implementation of the measures detailed at **Section 12.2.5** below, it is assessed that effects can be mitigated such that significant effects are not likely to arise.

Therefore, the overall likely effect on transport and access is assessed to be direct, moderate-slight, negative, of high probability but short-term in nature.

HGV Deliveries

The estimated timescale for the completion of the construction phase is approximately 15-18 months, inclusive of all works related to the construction and commissioning of the electricity substation and underground electricity line.

As detailed at **Table 12.5**, it is estimated that during construction works, approximately 3,714 no. loads will be delivered to the project site. Assuming an 18-month construction phase, this equates to approximately 207 no. vehicular trips per month or an average of 9 no. trips per day, excluding Sundays and public holidays. It should also be noted that vehicular movements will occur throughout the day and will not be concentrated at particular times.

Full details of the volumes of construction materials to be imported to and exported from the project site are detailed at **Chapter 3**; while the traffic/HGV movements⁴ associated with importing and exporting of construction materials are detailed at **Table 12.5** below.

Following completion of the construction works, it is estimated that approximately 35 no. loads will be needed to remove all temporary construction equipment, plant and machinery and materials used on site e.g. temporary compound, fencing, cabins, storage containers, plant and machinery, etc.

Material	Quantity	Deliveries/Trips
Electricity Substation		
Site mobilisation (incl. plant, machinery, traffic management measures/equipment, etc.)	-	25
Imported stone for substation compound, access track, electricity line trenches, construction compound, and drainage	7,710m ³	907
Concrete (substation compound, buildings, and interface masts)	160m ³	20
Miscellaneous construction materials (incl. blocks, slates, doors, fencing, landscaping plants/vegetation, etc.)	-	30
Electrical equipment (incl. busbars, insulators, cable sealing ends, interface masts, and lightning poles, etc.)	-	40
Site de-mobilisation (removal of plant, machinery, temporary structures, traffic management measures/equipment, etc.)	-	25
Underground Electricity Line		
Site mobilisation (incl. plant, machinery, traffic management measures/equipment, etc.)	-	10
Export of excavated material from trench	10,550m ³	1,242
Electrical ducting & cabling	-	35
Imported backfill material (concrete)	4,240m ³	530
Imported backfill material (stone)	4,777m ³	562
Imported road re-surfacing material (tar & chips)	2,220m ³	278
Site de-mobilisation (removal of plant, machinery, traffic	-	10

⁴ A 'trip' comprises an inbound and outbound movement.

Material	Quantity	Deliveries/Trips
management measures/equipment, etc.)		
Total	-	3,714

Table 12.5: Estimated Materials and Associated Number of Vehicle Movements for the Construction Phase

The expected number of HGV movements is based on best estimates of trips generated by similarly sized projects, previous experience in electricity substation transport assessments and civil construction, and based on the design of the project. Subject to planning permission being granted, these figures will be subject to refinement following the detailed design process, detailed pre-construction site investigations and consultation with the contractor appointed by the Developer; however the predicted traffic volumes are assessed as accurately reflecting the design process undertaken to date.

Based on the above estimated vehicular movements, the predicted effect on transport and access as a result of the increase in HGV movements associated with the entire construction phase is assessed as not likely to be significant and likely to be slight, negative, direct and short term. This assessment has been reached in consideration of the temporary duration of the proposed construction phase and the estimated average daily increase of 9 no. HGV movements.

Construction Personnel

The number of staff employed at the project site will vary according to the phase of works, likely peaking at approximately 40 no. It is expected that the majority of workers will arrive on site in LGVs and crew vehicles. Vehicle sharing will be actively encouraged to reduce vehicular movements. It is expected that c. 15 no. vehicles will visit the site on a daily basis during the peak construction period.

Parking for staff will be provided at the electricity substation compound. For personnel working along the electricity line route, no parking will be permitted along roads (or in areas) which are not closed to the public to allow for construction activities; and no parking will be permitted at entrances to private dwellings, business premises or agricultural holdings.

The additional vehicular movements associated with staff travelling to/from site are not assessed as likely to result in significant effects on transport and access. Effects are assessed as not likely to be significant and likely to be imperceptible-slight, negative and short-term.

Overall Classification of Effects

The above sections have assessed the effects of the project on transport and access which may arise as a result of the construction phase. Overall, the effects are assessed as not likely to be significant and are likely to be of short-term duration and ranging between moderate-slight and imperceptible negative.

12.2.4.2 Operational Phase

During the operation phase, the project will generally be unmanned. Operational and remote monitoring activities will be carried out on an ongoing basis. However, regular visits to the site will be undertaken for routine inspections and maintenance. Under normal circumstances, the operation of the project would require an average of 1-2

no. visits to the site per week by maintenance personnel. Parking will be provided within the electricity substation. In the case of a major fault (e.g. breakdown of a large electrical component), larger machinery may require access to the site.

Overall, the volume of traffic movements predicted to be generated during the operation phase is very low. Therefore, the effect of traffic associated with the operation of the project on the existing public road network will be imperceptible as a result of the type of traffic and the low volumes typically generated.

12.2.4.3 Decommissioning Phase

As set out at **Chapter 3 (Sections 3.2 and 3.7)**, the project will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

12.2.4.4 Cumulative Effects

The above assessment has included consideration of the likely in-combination effects which may arise from the construction, operation and decommissioning of the project. In addition, it is necessary to assess the likelihood for the development to result in cumulative effects with other existing, permitted or proposed developments, including other wind farms.

Cumulative effects are assessed as only likely to occur during the construction phase of the project. Cumulative effects are unlikely to occur during the operation phase as electricity substations do not generate a significant amount of traffic during operation, as outlined in **Section 12.2.4.2**; while, as described at **Section 12.2.4.3**, the electricity substation will not be decommissioned and will continue to operate as part of the electricity network.

Other developments which have been included within the cumulative assessment are listed at **Chapter 1**. The majority of developments listed; for example one-off rural dwellings, agricultural developments, telecommunication masts and forestry plantations; do not generate significant volumes of traffic during either the construction or operational phases such that would have the likelihood to result in cumulative effects.

In relation to quarries, it is likely that construction materials for the project will be sourced from one or more of the quarries listed at **Chapter 1 (Table 1.4)** subject to the conclusion of a competitive tendering process. Therefore, it is assessed that the project will not act cumulatively with any of the listed quarries; to give rise to cumulative adverse transport and access effects; as the construction material to be used for the project would otherwise be utilised in other construction projects and would also be transported via the public road network. It is further assessed, on this basis, that the project will not result in any additional transport effects, or traffic/HGV movements, that would not ordinarily arise from the regular activities of the selected quarry.

The project will be constructed concurrently with the permitted Seven Hills Wind Farm and, therefore, it is likely that cumulative transport and access effects will arise during the construction phase. The assessment of likely effects on roads, traffic, transport and access from the Seven Hills Wind Farm identified that a total of 23,736 no. HGV deliveries would be required during the construction phase. Over the course of a predicted 24-month construction phase, this equates to an average daily increase of 40 no. HGV trips. In assessing the likely effect of this increase in traffic volumes, the An

Bord Pleanála Inspector found that she was “...satisfied that there is adequate capacity within the road network to accommodate additional traffic volumes”. An Bord Pleanála, in subsequently deciding to grant planning permission, concluded that “[t]he increase in vehicle movements and resulting traffic during the construction phase would be mitigated by the...preparation of a Construction Traffic Management Plan”.

It is likely that construction materials; such as stone/rock, sand and concrete; will be sourced from the same quarries as those selected for the Seven Hills Wind Farm. Therefore, it is likely that traffic volumes along the route between the selected quarry and the project site will experience an increase in traffic volumes. However, the subject project is assessed as giving rise to an average of 9 no. material deliveries (trips) per day which; in combination with the traffic volumes predicted as arising from the construction of the Seven Hills Wind Farm, is not assessed to represent a significant increase. Moreover, and as set out at **Section 12.2.3.2**, material suppliers will be instructed to maximise the use of national and regional routes, and avoid the use of locally classed roads insofar as possible, which are assessed as having sufficient capacity and being capable of accommodating the predicted increase in traffic volumes.

In addition, it is noted that the route of the underground electricity line largely avoids potential construction material delivery routes associated with both the Seven Hills Wind Farm (including turbine component delivery routes) and the subject project. However, the R362 has been identified as a potential delivery route, from Ward Bros. Quarry, and; as described at **Chapter 3**; the underground electricity line is to be located within the R362 for c. 330m within the townland of Derryglad. In the event that Ward Bros. Quarry is selected as a supplier of materials for the Seven Hills Wind Farm (or the subject project), an appropriate alternative route will be identified for the duration of trenching works within the R362.

Overall, therefore, it is assessed that the cumulative effects of the project and other existing, permitted and proposed developments are not likely to be significant and can be minimised through the implementation of appropriate traffic management and mitigation measures. Cumulative effects are assessed as likely to be no greater than moderate, indirect, negative and temporary.

12.2.5 Mitigation & Monitoring Measures

12.2.5.1 Mitigation

The likely adverse effects of the project have been identified as being moderate to imperceptible, direct, indirect and associated with short-term construction activities.

In order to ensure the avoidance of significant effects and reduce the predicted magnitude and significance of effects to the greatest possible extent during the construction phase, the following mitigation measures will be implemented:-

- A Traffic Management Plan shall be agreed as part of the Construction Environmental Management Plan (CEMP) with the Planning Authority prior to the commencement of development. The Traffic Management Plan shall include *inter alia* confirmed details of construction material haul routes; confirmed details of vehicle specifications; a materials delivery programme; traffic management measures including details of ‘Stop/Go’ systems, signage, road closures and diversionary routes; and road reinstatement details;

- Appropriate traffic management; including maintenance of local access and pedestrian access (where safe to do so); shall be implemented to facilitate continued public use of roads where temporary traffic restrictions have to be put in place. Precise details of these measures will be detailed in the Traffic Management Plan;
- Construction phase traffic movements will be limited to 07:00-19:00 Monday to Friday and 07:00–13:00 on Saturdays with no movements on Sundays or public holidays. It may be occasionally necessary to undertake works outside of these hours, for example in the event of an emergency, which would necessitate traffic movements. Where construction activities are necessary outside of the normal working hours, local residents and the Planning Authority will receive prior notification;
- Due to the transient nature of the underground electricity line works, rolling road closures will be implemented. Traffic restrictions shall be kept to minimum duration and extent;
- All reasonable steps shall be taken to ensure that national and regional routes are used to transport all materials to the site, insofar as is possible;
- Prior to, and post, construction; pavement condition surveys will be undertaken along all non-national access routes proposed to be utilised in the delivery of construction materials. Given the high-quality and well-maintained nature of motorways and national routes, it is not assessed as necessary to carry out surveys of these carriageways or structures. Following the completion of the pre-construction survey, any works which are assessed as necessary to facilitate the delivery of components and materials to the project site shall be undertaken, while any deterioration of carriageways or structures identified in the post-construction survey shall be put right at the expense of the developer and to the satisfaction of the relevant local authority;
- Appropriate and adequate signage shall be provided at all entrances providing access, safety and warning information;
- At the site entrance leading to the electricity substation, roadside hedgerows shall be trimmed prior to the commencement of construction to ensure that visibility splays are provided in advance of the delivery of construction materials;
- Sufficient car parking spaces will be available at the temporary construction compound during the construction phase. Additionally, during construction of the underground electricity line, it is likely that agricultural premises will be used for the temporary storage of materials (e.g. ducting, cabling, etc.) and for the parking of construction plant, machinery, and work vehicles (cars, vans, etc.). No parking of cars by persons associated with the project will be permitted on any part of the public road that is not closed to traffic. All staff will be instructed to ensure that private entrances remain unobscured (particularly along the electricity line route);
- A dry wheel washing facility will be provided, as necessary, to prevent any debris being transferred from electricity substation site to the adjacent public roads. All drivers will be required to ensure that their vehicle is free from dirt and stones prior to departure from the project site. Where conditions exist for dust to become friable, techniques such as damping down of the affected areas will be employed and vehicles/loads will be covered to reduce dust emissions;
- All works within the public road corridor (i.e. underground electricity line) shall be undertaken in consultation with, and agreed in advance with, the relevant local authority and only following receipt of all necessary licences, permits and consents;

- Where possible, joint bays will be installed within roadside verges or at field entrances;
- Road sweeping, particularly along the underground electricity line route, will be carried out as appropriate to ensure construction traffic does not adversely affect road conditions;
- Speed limit compliance will be emphasised to all staff and contractors prior to the commencement of construction during site induction, and will be strictly enforced throughout the construction phase;
- Following the installation of the electricity line ducting, the trench will be backfilled with appropriate material and temporarily reinstated. Following the installation of the underground electricity line, all public roads within which it is proposed to install the underground electricity line will be subject to a full-width carriageway reinstatement (re-surfacing) of the relevant road section. Road reinstatement specifications and methodologies will be agreed with Roscommon County Council prior to the commencement of development and as part of the road opening licencing process;
- Maximum axle loadings shall be strictly enforced in accordance with the Road Traffic (Construction and Use of Vehicles) Regulations 2003 (S.I. No. 5 of 2003);
- A designated contact point and coordinator will be put in place to manage all access arrangements and to interface with the public and Roscommon County Council; and,
- The electricity substation site and active underground electricity line works area shall be closed, and strictly secured, to the public during the construction phase.

Likely effects during the operation phase have been assessed as being imperceptible and hence mitigation measures are not assessed as being required.

12.2.5.2 Monitoring

As described above; prior to and post construction, pavement condition surveys will be undertaken along all non-national access routes proposed to be utilised in the delivery of construction materials. Any deterioration of carriageways or structures identified in the post-construction survey shall be put right at the expense of the Developer and to the satisfaction of Roscommon County Council. However, any non-national access routes being utilised will be subject to regular visual inspections to identify any surface or structure deterioration which may necessitate immediate intervention.

12.2.6 Residual Effects

12.2.6.1 Construction Phase

There are no significant residual effects, positive or negative, assessed as likely to occur during the construction phase. Mitigation measures have been proposed to reduce any likely adverse effects and any residual effects are assessed as not likely to be significant and likely to be slight to imperceptible negative and short-term. The residual adverse effects are assessed as arising from increases in traffic volumes on roads in the vicinity of the project site and disruption caused due to traffic management measures (road closures and diversionary routes). Positive residual effects are likely to accrue as a result of improvements to the surface condition of carriageways along the route of the underground electricity line.

12.2.6.2 Operation Phase

There will be no likely significant adverse residual effects during the operation phase as only occasional LGVs are envisaged as likely to visit the project site during operation for routine monitoring and maintenance. Positive residual effects are likely to accrue as a result of improvements to the surface condition of carriageways along the route of the underground electricity line.

12.2.6.3 Decommissioning Phase

As set out at **Chapter 3 (Sections 3.2 and 3.7)**, the project will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

12.2.7 Summary

This section has assessed the likelihood of significant effects arising from the project on transport and access. The project has been assessed as resulting in effects (including cumulatively with the permitted Seven Hills Wind Farm) which are not likely to be significant and likely to be moderate to imperceptible, direct, indirect, negative (temporary) and positive (long-term). Following mitigation, the likely residual effects have been assessed as slight to imperceptible, direct, indirect, negative (temporary) and positive (long-term).

Overall, this assessment has identified no likelihood of significant effects on transport and access which could arise as a result of the construction or operation of the project, either individually or in combination with other existing, permitted or proposed developments.

12.3 Aviation

12.3.1 Introduction

This section assesses the likelihood of effects on aviation arising as a result of the construction, operation or decommissioning of the project. The project is not, due to the absence of particularly tall structures, a type of development which is likely to give rise to effects on or interactions with aviation. However, given that the project comprises attendant infrastructure to the permitted Seven Hills Wind Farm, which comprises 17 no. wind turbines, it has been considered appropriate to re-evaluate the likelihood of significant aviation effects.

The requirement for an assessment of the likely effects on aviation is set out in the *Wind Energy Development Guidelines for Planning Authorities 2006* which state:-

"The siting of wind turbines may have implications for the operations of communications, navigation and surveillance systems used for Air Traffic Control for the separation and safety of aircraft. Wind turbine siting may also have implications for the flight paths of aircraft."

12.3.2 Methodology

The assessment involved consultation with various stakeholders including the Irish Aviation Authority (IAA) and Department of Defence. In addition, publications issued by the IAA and the Department were reviewed to determine if the project site, in combination with the permitted Seven Hills Wind Farm site, was assessed as being of significance or if significant effects, additional to those assessed in respect of the permitted development, were likely.

This assessment has had particular regard to the *Draft Air Corps Wind Farm/Tall Structures Position Paper* (August 2014) (**Annex 12.1**) which sets out the Air Corps position on the appropriate siting and management of wind turbines and tall structures. This assessment includes a detailed review of this position paper, a comparison of the project site with identified 'Danger Areas', 'Restricted Areas' and 'Low Level Flying Areas'.

12.3.2.1 Consultation

Consultation was undertaken with the IAA and Department of Defence to establish if any significant effects on aviation were likely. A consultation letter was issued in February 2024 (see **Chapter 1**), which included the Preliminary Scoping Report, a general description of the project and site location drawings.

The IAA advised that it had no comment to make in relation to the project (see **Annex 1.5**); while, at the time of writing, a response from the Department of Defence has not been received.

12.3.3 Description of Existing Environment

There are no major airports in the vicinity of the project and the site is, therefore, assessed as being unconstrained. The project is located c. 60km east of Galway Airport, c. 70km southeast of Ireland West (Knock) Airport, c. 95km northeast of Shannon Airport, and c. 120km west of Dublin Airport.

According to the IAA, there are no aerodromes or airstrips in the immediate vicinity of the project or indeed within County Roscommon. The nearest aerodrome in the Republic of Ireland is at Abbeyshrule in County Longford at an approximate distance

of 36km.

The project site is not located within any 'Danger', 'Restricted' or 'Military Operating' area as identified at Annex A, B or C of the Air Corp Position Paper. Similarly, the subject site is not located within 3-nautical miles of any critical low-level route identified at para. 2(2)(c) and illustrated at Annex D of the Paper.

12.3.4 Description of Likely Effects

12.3.4.1 Construction Phase

Due to the low altitude of activity during the construction phase, it is assessed that there will be no likely significant effects on aviation.

12.3.4.2 Operational Phase

Due to the low altitude of the project (tallest structure of 18m [lightning mast]), it is assessed that there will be no likely significant operational phase effects on aviation.

12.3.4.3 Decommissioning Phase

As set out at **Chapter 3 (Sections 3.2 and 3.7)**, the project will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

12.3.4.4 Cumulative Effects

Given the absence of other tall structures in the wider vicinity of the project site and the Seven Hills Wind Farm site, it is assessed that there is no likelihood for the project to have any significant effects on aviation, individually or in combination with other existing, permitted or proposed developments.

12.3.5 Mitigation & Monitoring Measures

Due to the absence of likely significant effects, there are no specific mitigation measures proposed during the construction or operational phases.

12.3.6 Residual Effects

No significant residual effects are assessed as likely to occur.

12.3.7 Summary

This assessment concludes that the project is unlikely to result in any significant effect on aviation. The project site is not located in close proximity to any civilian airport, aerodrome or airstrip; nor is it located within a 'Danger', 'Restricted' or 'Military Operating' area or critical low level route as identified within the *Draft Air Corps Wind Farm/Tall Structures Position Paper* on military aviation.

Moreover, the project does not require the installation of any tall structures such that could interact with aviation activities. Accordingly, it is assessed that significant effects on aviation are unlikely to arise as a result of the project, either individually or in combination with other existing, permitted or proposed developments.

12.4 Telecommunications

12.4.1 Introduction

This section assesses the likely effects of the project upon a range of communications infrastructure, including telecommunication networks, broadcast radio and television and fixed infrastructure such as telecommunication masts.

Given the nature of the project and the absence of tall structures, interference or adverse effects are unlikely.

12.4.2 Methodology

The methodology employed in assessing the likelihood of significant effects on telecommunication networks consisted of desk based research⁵ and consultation with various telecommunication operators and relevant authorities. Desk based research was undertaken to identify:-

- Locations of known telecommunications facilities;
- Known telecommunication fixed links; and,
- Known television broadcast and re-broadcast facilities.

During the EIAR scoping process (see **Chapter 1**), the following telecommunication service providers (operators) and authorities were consulted:-

- An Garda Síochána;
- Broadcasting Authority of Ireland;
- BT Communications Ireland;
- Commission for Communications Regulation;
- Eir Limited;
- Enet Telecommunications Networks Limited;
- Imagine Group;
- Irish Aviation Authority;
- Magnet Plus;
- National Ambulance Service;
- Open Eir;
- Radio Services and Building Limited;
- Ripplecom;
- RTE Transmission Network Limited (2rn);
- Tetra Ireland Communications Limited;
- Three (3) Ireland;
- Towercom;
- Viatel Ireland Limited;
- Virgin Media Ireland; and,
- Vodafone Ireland Ltd.

Responses were received from An Garda Síochána, Eir, Enet Telecommunications Networks Limited, Irish Aviation Authority, RTE Transmission Network Limited, Tetra Ireland Communications Limited, Towercom, and Virgin Media Ireland; however, no specific concerns in relation to the project were identified. The responses received from these organisations are summarised at **Chapter 1** and can be viewed at **Annex 1.5**.

⁵ <https://siteviewer.comreg.ie/>

12.4.3 Description of Existing Environment

The desktop research and consultations undertaken confirmed that while there is telecommunications infrastructure located in the wider vicinity of the project site and there are microwave, and other, links present, the project site is not a strategically important location for telecommunication links.

12.4.4 Description of Likely Effects

12.4.4.1 Construction Phase

No significant effects are assessed as likely to occur during the construction phase.

12.4.4.2 Operational Phase

Due to the characteristics of the project, it is assessed that significant effects on telecommunications are not likely to occur.

12.4.4.3 Decommissioning Phase

As set out at **Chapter 3 (Sections 3.2 and 3.7)**, the project will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

12.4.4.4 Cumulative Effects

Having regard to the characteristics of the project and the absence of likely effects, it is assessed that there is no likelihood of significant effects arising in combination with existing, permitted or proposed developments.

12.4.5 Mitigation & Monitoring Measures

As significant effects are not assessed as likely to occur during the construction or operational phases, no specific mitigation measures are required or proposed.

12.4.6 Residual Effects

No significant residual effects are assessed as likely to occur.

12.4.7 Summary

It is assessed that on the basis of this desktop assessment and the extensive consultation with stakeholders that the project will not result in any likely significant effects on the telecommunications network either individually or in combination with other existing, permitted or proposed developments.

12.5 Resources & Utility Infrastructure

12.5.1 Introduction

This section provides an assessment of the likelihood of significant effects on, or interactions with, existing renewable and non-renewable resources, and other utility infrastructure. Within the wider environs of the project site, there is evidence of the extraction and use of resources; particularly in relation to the milling of peat from peatlands to the west and south of the project site with numerous quarries located in Co. Roscommon and Co. Westmeath.

There is also the presence of utility infrastructure, with overhead electricity lines connecting to dwellings; medium and high voltage electricity transmission lines traversing the landscape; and other suspended telecommunication wires adjacent to the majority of local roads.

12.5.2 Description of Existing Environment

12.5.2.1 Renewable Resources

There are 8 no. existing wind farm developments located within County Roscommon, as follows:-

- Skrine Wind Farm comprising 2 no. wind turbines located c. 7km south of Roscommon town;
- Sliabh Bawn Wind Farm comprising 20 no. turbines located c. 11km northeast of Roscommon town;
- Roosky Wind Farm comprising 2 no. wind turbines located c. 2.5km south of Ballaghderreen;
- Largan Hill Wind Farm comprising 9 no. wind turbines located c. 5km north of Ballaghderreen;
- Kilronan Wind Farm comprising 10 no. wind turbines located c. 2km west of Arigna;
- Seltenaveeny Wind Farm comprising 2 no. wind turbines located c. 3km north of Arigna;
- Tullynahaw Wind Farm comprising 11 no. wind turbines located c. 3km north of Arigna; and,
- Altagowlan Wind Farm comprising 9 no. wind turbines located c. 4km northwest of Arigna.

In addition to the above, there are a number of wind energy micro-generation sites located throughout the county; while a number of utility-scale solar energy developments have been permitted but have not yet been constructed.

12.5.2.2 Non-Renewable Resources

The environs of the project site, and the wider midlands region more generally, is notable for its lowland peatland bogs and has a significant industrial heritage of cutaway peat extraction for power generation, including a number of now inoperative thermal power stations, and the extraction of peat for domestic and horticulture use. As a consequence, there is a significant legacy of electricity grid infrastructure in the wider environs of the project site. As peat extraction is now gradually being phased out for ecological and climate change reasons, non-renewable energy production from peat extraction is gradually being replaced with renewable energy production, as described above, and, more latterly, solar energy.

There are also a significant number of extant quarrying activities within the wider environs of the project site. As discussed in **Section 12.2.3.2** above, it is anticipated that local quarries will be utilised for the importation of stone aggregates during the construction phase of the project. The precise source of such materials will, however, be selected during the pre-construction procurement process and a range of alternative possible sources are presented at **Chapter 2**. An assessment of the likely significant traffic and transport effects of the importation of such materials during the construction phase is provided at **Section 12.2**.

12.5.2.3 Utilities Infrastructure

The electricity transmission network in County Roscommon predominately comprises 38kV and 110kV electricity transmission lines; with lower voltage distribution lines connecting individual properties to the transmission network. As discussed above, there is a legacy network of electricity grid infrastructure in the wider environs of the project site due to historic power generation from cutaway peat extraction.

EirGrid is the transmission system operator (TSO) responsible for both the planning and operation of Ireland's high voltage national grid ($\geq 110\text{kV}$) while ESB Networks are responsible for the development of medium and low voltage lines ($\leq 38\text{kV}$).

In addition to the wireless transmission of telecommunications, discussed at **Section 12.4** above, there is an extensive wired telecommunications network in the wider environs of the project site with poles and suspended telecommunication wires running along the majority of local and regional roads; while local services such as water schemes and local authority roadside drainage infrastructure are also present along local roads.

12.5.3 Description of Likely Effects

12.5.3.1 Construction Phase

The construction phase of the project is not likely to have any significant effect on existing renewable or non-renewable resources, or utilities infrastructure. The construction phase will not inhibit the export of renewable energy generated from other sources, inhibit the development of other renewable energy projects, nor will it affect existing utility services. While there is a potential for effects on utility services (e.g. accidental collision with overhead wires or sub-surface cables/pipes during the construction phase etc.), this will be mitigated through good construction practices.

During the process of connecting the project to the national grid, some minor, temporary disruption to electricity supply at a local level could occur.

The construction phase will require the extraction of non-renewable resources in the form of stone aggregates for the construction of the electricity substation compound, access track and backfilling of underground electricity line trenches. All such construction materials will be sourced, where possible, from local quarries and, specifically, only those which have full planning permission and have been subject to EIA. Accordingly, the likely significant environmental effects of this extraction will have been fully assessed by the applicable competent authority.

As a result, it is assessed that significant effects on resources and utility infrastructure are unlikely to occur as a result of the construction phase; either individually or in combination with other existing, permitted or proposed developments; with likely effects assessed as being slight-imperceptible, direct, indirect and short-term.

12.5.3.2 Operational Phase

The operational phase of the project will not result in any likely effect on existing utility infrastructure or renewable or non-renewable resources. The connection of the project to the national grid will strengthen the electricity network infrastructure in the wider region through the construction of a 110kV substation which will serve the national network.

It may be necessary to occasionally import aggregates to the site during operations to maintain access for service vehicles; however, materials will again be sourced from authorised quarries with full planning permission and no likely significant effects will occur.

The project will have no likely operational phase effects on existing renewable resources. It is assessed that the project will, by facilitating the export of electricity generated by the Seven Hills Wind Farm to the national electricity network, result in a likely overall positive effect in terms of carbon reduction and climate change (see **Chapter 8**). It is assessed, therefore, that adverse effects on the environment are unlikely to occur in respect of resources and utility infrastructure during the operational phase as a result of the project, either individually or in combination with other existing, permitted or proposed developments.

12.5.3.3 Decommissioning Phase

As set out at **Chapter 3 (Sections 3.2 and 3.7)**, the project will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

12.5.3.4 Cumulative Effects

The project is not assessed as likely to result in any cumulative effects on resources or utility infrastructure, either individually or in combination with other existing, permitted or proposed developments.

12.5.4 Mitigation & Monitoring Measures

12.5.4.1 Construction Phase

As identified above, accidental collision with overhead wires or sub-surface cables/pipes will be mitigated through the implementation of good construction practice and procedures.

The sourcing of aggregates locally and from facilities which have been subject to EIA, will mitigate against the likelihood of significant effects during the construction phase.

Additionally, during the process of connecting the project to the national grid, EirGrid will balance the loading on the electricity network to ensure that no significant disruption occurs, and likely significant effects do not arise.

12.5.3.2 Operational Phase

No specific mitigation measures are proposed or required during the operational phase.

12.5.3.3 Decommissioning Phase

As set out at **Chapter 3 (Sections 3.2 and 3.7)**, the project will form part of the national

electricity network and decommissioning of the substation is not proposed. Therefore, no mitigation measures are required or proposed.

12.5.5 Residual Effects

No likely significant residual effects are assessed as likely to occur.

12.5.6 Summary

This assessment concludes that the project is unlikely to result in any likely significant adverse effect on renewable and non-renewable resources or on utilities infrastructure. The operation of the project will bring about a benefit in terms exporting electricity generated from a renewable source to the national grid and a strengthening of national electricity grid infrastructure in the wider region of the project site. This assessment similarly concludes that the project is unlikely to result in any significant adverse cumulative effects on resources or utility infrastructure in combination with existing, permitted or proposed developments.

