White Hill Wind Farm Electricity Substation & Electricity Line

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 origin[1]. 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 infrastructure[3]. 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 County Kilkenny and County Carlow, approximately 11 kilometres (km) northeast of Kilkenny City, c. 15km southwest of Carlow Town, c. 3km west of Muine Bheag and c. 1km north of Paulstown. 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 320 metres (m) of 110kV underground electricity line between the electricity substation and the Kellis-Kilkenny overhead transmission line and the provision of 2 no. interface masts;
- An electrical control unit at the permitted White Hill Wind Farm site;
- Approximately 8.8km of underground electricity line between the electricity substation and the electrical control unit; and,
- All associated and ancillary site development, access, excavation, construction, landscaping and reinstatement works, including provision of site drainage infrastructure.

The project site traverses the administrative boundary between counties Kilkenny and Carlow; with the electricity substation and c. 3.3km of the underground electricity line located in County Kilkenny and c. 5.5km of the underground electricity line and the electrical control unit located in County Carlow. Electrical equipment suppliers, construction material suppliers and candidate quarries which may supply aggregates 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, operational and decommissioning phases of the project is addressed at **Section 3.5.5**, **Section 3.6** and S**ection 3.7** 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 site entrance;
- Walkover of the electrical control unit site and associated site entrance;
- Windshield and walkover survey of the underground electricity line route with a particular focus of all noteworthy locations (e.g. road crossings, road junctions and HDD locations);
- 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*;
- *Kilkenny City & County Development Plan 2021–2027* ('the Kilkenny CDP');
- *Carlow County Development Plan 2022-2028* ('the Carlow 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 Kilkenny CDP are set out at **Table 12.1**, below. Policies and objectives which are not considered to be relevant have been excluded from further assessment.

Policy / Objective	Comment
12AK: To improve substandard sections of regional\county roads throughout the County, in particular those most heavily trafficked, and those providing access to existing or proposed industrial, residential or commercial developments as required and as resources permit.	While the project provides for the widening of a short section of the carriageway of the L66732, the relevant section of the public road is of a good quality. The project will not undermine the ability of future works to be undertaken to any particular road.
12AL: To maintain, develop and improve existing roads and to construct new roads as needs arise and resources permit in accordance with the Annual Roadworks programme.	Where the underground electricity line is to be installed within the carriageway of local roads, the carriageway will be subject to a full width reinstatement. This will ensure that there are no lasting adverse effects on the local road network. In the event that any damage to the public road arises as a consequence of the project, it will be remediated by, and at the expense of, the Developer.

Table 12.1: Relevant Kilkenny CDP Transport Policies and Objectives

An assessment of the relevant transport policies and objectives of the Carlow CDP are set out at **Table 12.2**, below. Policies and objectives which are not considered to be relevant have been excluded from further assessment.

Policy / Objective	Comment
LR.P1: Ensure that the safety and capacity of the local road network is maintained and improved where funding allows to a suitable standard to accommodate the needs of the County	As the project will not involve any alterations to the road network in County Carlow, it is assessed that there will be no effect on the safety or capacity of the local road network.
LR.O2: Maintain and improve all local roads in accordance with Department requirements.	Where the underground electricity line is to be installed within the carriageway of local roads, the carriageway will be subject to a full width reinstatement. This will ensure that there are no lasting adverse effects on the local road network. In the event that any damage to the public road arises as a consequence of the project, it will be remediated by and at the expense of the Developer.

Table 12.2: Relevant Carlow 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 28 August 2024. The site of the electricity substation, electrical control unit, associated site entrances 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 Effect: Where the project has neither negative nor a positive effect 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 12.3** 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 12.3: 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 12.4** below.

Magnitude of Effect	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 12.4: 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 12.5**.

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 12.5: Significance of Effect Criteria

12.2.3 Description of Existing Environment

12.2.3.1 Access to the Project Site

The road network in the vicinity of the project comprises a mix of motorway, regional and local roads.

The M9 motorway is located c. 50m to the east of the project and is likely to be utilised in the delivery of electrical equipment and other construction materials to the project site, subject to the selection of suppliers. From the M9 motorway (Junction 7), construction traffic will utilise the R912, R712 and R448 regional roads and a number of local roads to the access the project site.

The R912 regional road will be utilised over a short distance (c. 500m) from Junction 7 of the M9 to a roundabout with the R712. The road is a high quality two-lane carriageway with a central median and hard shoulders. Due to its elevated setting traversing the M9 motorway, the road is bounded by safety barriers. From Junction 7, the road has a speed limit of 80kph[4]; however, as the road approaches the roundabout with the R448, the speed limit reduces to 50kph. The road is accompanied by street lighting; however, no pedestrian footpaths are present.

The R712 regional road is a good quality two-lane carriageway. In rural areas, the road has a speed limit of 80kph and is generally bounded by hedgerows and stone walls. To the south of Paulstown, cycle lanes are present in the respective hard shoulders; while pedestrian footpaths are present in more urban areas. As the road passes through Paulstown, the width of the carriageway reduces noticeably in the urban setting and the speed limit similarly reduces to 50kph.

The R448 regional road is a good quality two-lane carriageway. In rural areas, the road has a speed limit of 80kph and is generally bounded by hedgerows and stone walls. To the northeast of Paulstown, cycle lanes are present in the respective hard shoulders.

From the R448, it is likely that construction traffic will follow the L6674, L6673 and L66732 to the electricity substation site entrance. The L6674 is a single-lane carriageway road which is generally in good condition; however, there is evidence of surface deterioration at a number of locations. The L6673 and L66732 are single-lane carriageways which are generally of good condition. There are no footpaths or street lighting along any of the local roads referred to above. Immediately north of the substation site entrance, the carriageway of the L66732 will be widened by c. 1.5m to ensure ease of access and egress for HGVs. The construction traffic route, from the R448, to the project site is illustrated at **Annex 12.1**.

Due to the relatively narrow carriageway width of the L6674, it is proposed that construction traffic leaving the project site will follow an alternative route to avoid HGVs meeting along this local road. The alternative route, from the site entrance to the R448, will follow the L66732, L6673, L6674, L3036, and L7117. The L6674, L3036 and L7117 are each single-carriageway roads bounded by hedgerows with no footpaths or street lighting. The construction traffic route from the project site, to the R448, is illustrated at **Annex 12.1** (**Volume II**).

As described at **Chapter 3**, it is likely that a number of material storage compounds will be established along the route of the underground electricity line. Construction traffic will follow a number of local roads, from the R448, to the respective compounds. Similarly, construction materials, from the R448, will be delivered along local roads to the electrical control unit compound.

It should be noted, however, that the precise traffic routes to and from the project site can only be determined prior to the commencement of construction. Accordingly, therefore, it is proposed that the final routes will form part of a Traffic Management Plan to be prepared prior to the commencement of development following consultation with the Planning Authority.

[4] All speed limits referred to are correct as of 31 January 2025 and prior to the changes to be implemented under the Road Traffic Act 2024. During construction, all speed limits will be complied with in full.

12.2.3.2 Underground Electricity Line Route

The underground electricity line will be located within private lands, for c. 5.9km, and within the L6673, L6738, L7117 and L71172 for a combined distance of c. 2.9km.

Each of the above local roads are single-lane carriageways which are generally of good condition; however, there is evidence of surface deterioration at a number of locations. There are no footpaths or street lighting along any of the local roads referred to above.

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**.

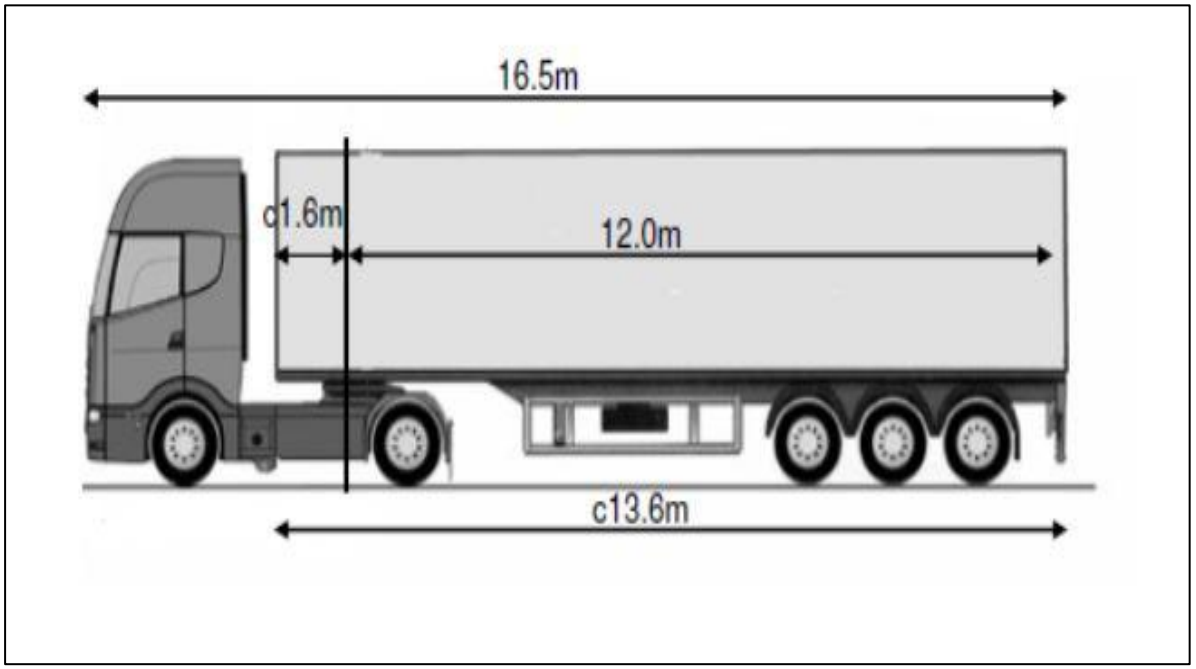

Figure 12.1: Standard HGV

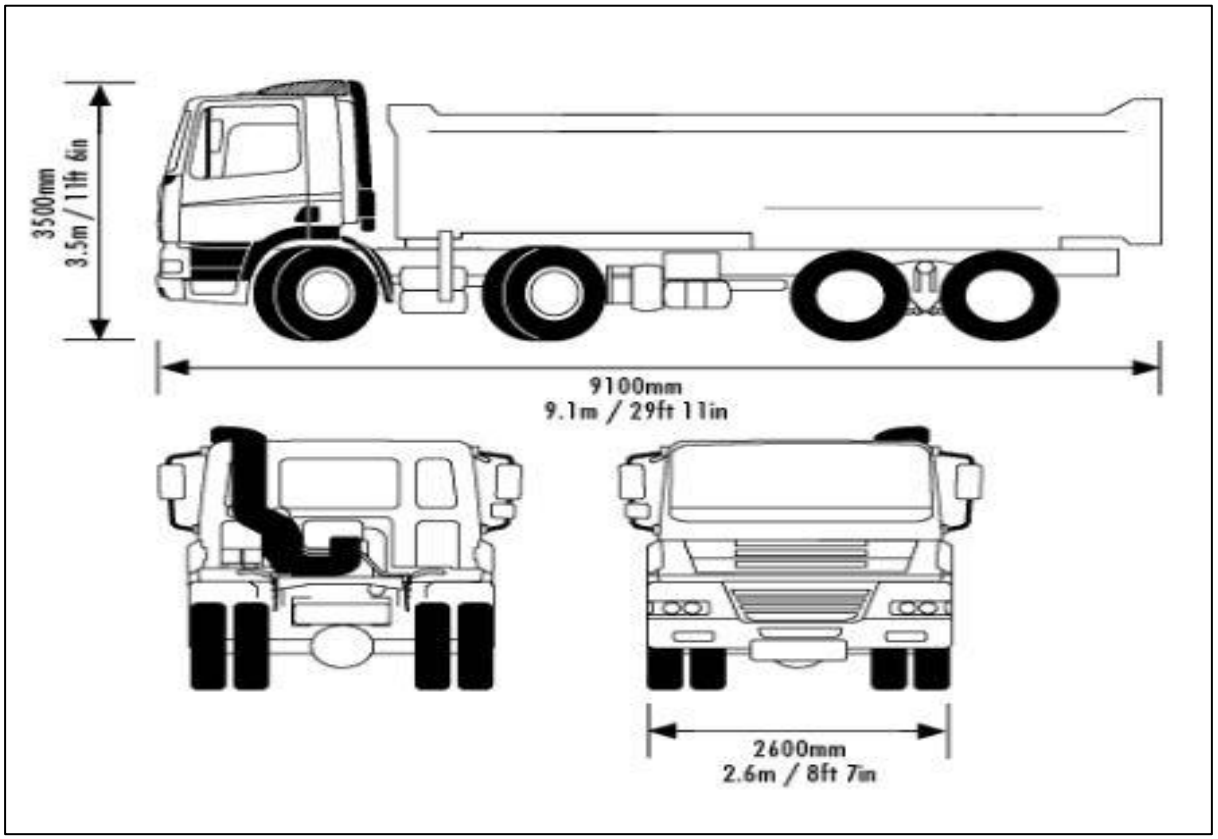

Figure 12.2: Standard Rigid Tipper Truck

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 delivery of backfilling/reinstatement material for the trench and delivery of access track and compound construction material for the electrical control unit. 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.

Site Entrances

As discussed in **Chapter 3**, 2 no. new site entrances will be constructed to provide access to the electricity substation and the electrical control unit, respectively. Access to the electricity substation site will be provided via a new site entrance from the L66732 local road. The site entrance will not be required to accommodate any abnormal size loads but will be constructed to ensure ease of access and egress for standard HGVs which will deliver construction materials and electrical apparatus to

the site. Works at the site entrance will comprise the removal of c. 15m of existing roadside vegetation to create the site entrance.

Appropriate visibility splays will be provided at the entrance as described at **Section 3.4.1.5** (**Chapter 3**). No hedgerow removal will be required for the provision of visibility splays due to the width of the existing roadside verge; however, roadside hedgerows will be trimmed to ensure full visibility for vehicles exiting the project site.

Following the establishment of the entrance, it will be appropriately fenced off and gated to prevent unauthorised access.

The electrical control unit compound will be accessed via a new site entrance, from the L7117 local road. The site entrance will be constructed as described at **Section 3.4.1.5**; with c. 10m of roadside hedgerow being removed. The provision of visibility splays (90m in each direction) will not require the removal of any further roadside hedgerow due to the width of the existing roadside verge; however, hedgerows may be trimmed back to ensure full visibility is maintained. Following the establishment of the entrance, it will be appropriately fenced off and gated to prevent unauthorised access.

All works related to the construction of the entrances 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. 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.

Additionally, given the extensive road network in the environs of the project,

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. 100m 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, 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, electrical control unit and underground electricity line.

As detailed at **Table 12.6**, it is estimated that during construction works, approximately 2,736 no. loads will be delivered to the project site. Assuming an 18-month construction phase, this equates to approximately 152 no. vehicular trips per month or an average of 7 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 movements[5] associated with importing and exporting of construction materials are detailed at **Table 12.6** below.

Following completion of the construction works, it is estimated that approximately 40 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.

Item	Quantity	Deliveries/Trips
Electricity Substation		
Site mobilisation (incl. plant, machinery, traffic management measures/equipment, etc.)	-	25
Imported stone and sand for substation compound, access track, electricity line trenches, construction compound, and drainage	9,155m^3	1,078
Concrete (substation compound, buildings, and interface masts) and road pavement material (carriageway widening of L66732)	270m^3	32
Miscellaneous construction materials (incl. blocks, slates, doors, fencing, landscaping plants/vegetation, etc.)	-	30
Electrical equipment (incl. transformer, busbars, insulators, cable sealing ends, interface masts, and lightning poles, etc.)	-	40
Site de-mobilisation (removal of plant, machinery, temporary	-	25

[5] A 'trip' comprises an inbound and outbound movement.

Item	Quantity	Deliveries/Trips
structures, traffic management measures/equipment, excess spoil and construction materials, etc.)		
Underground Electricity Line		
Site mobilisation (incl. plant, machinery, traffic management measures/equipment, etc.)	-	10
Export of excavated material from trench	3,285m^3	385
Electrical ducting & cabling	-	40
Imported backfill material (concrete)	435m^3	55
Imported backfill material (stone and sand)	5,690m^3	670
Imported road re-surfacing material (tar & chips)	1,060m^3	133
Site de-mobilisation (removal of plant, machinery, traffic management measures/equipment, etc.)	-	10
Electrical Control Unit		
Site mobilisation (incl. plant, machinery, traffic management measures/equipment, etc.)	-	5
Export of excavated material	850m^3	100
Imported stone and sand for compound, access track and drainage	675m^3	80
Concrete (control unit foundations)	15	2
Electrical Control Unit	1	1
Miscellaneous construction materials (incl. fencing, gates, landscaping plants/vegetation, etc.)	-	10
Site de-mobilisation (removal of plant, machinery, traffic management measures/equipment, etc.)	-	5
Total		**2,736**

Table 12.6: 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 accurately reflect 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 7 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 light-goods vehicles (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 not significant, 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 slight and not significant 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 electrical control unit and underground electricity line will be decommissioned; however, the electricity substation will form part of the national electricity network and decommissioning of the substation is not proposed. This phase is expected to last approximately 12-months.

During the decommissioning phase of the project, the total volume of HGV traffic will be significantly reduced compared to the construction period with traffic being generated from the removal of the electrical control unit, ancillary infrastructure and the underground electricity line. The underground electricity line will be removed from the installed ducting but the ducting will remain in situ to avoid further excavations within the public road network.

Overall, the effect of the decommissioning phase is assessed as not likely to be significant and likely to be not significant, negative and of short-term duration.

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 operational phase as electricity substations do not generate a significant volume of traffic during operation, as outlined in **Section 12.2.4.2**; while, as described at **Section 12.2.4.3**, decommissioning phase works will be of a substantially reduced magnitude when compared to the construction phase and notable volumes of traffic are not likely to be generated.

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 White Hill 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 transport and access from the White Hill Wind Farm identified that a total of 5,850 no. HGV deliveries would be required during the construction phase. Over the course of a predicted 12-month civil works construction phase, this equates to an average daily increase of 21 no. HGV trips. In assessing the likely effect of this increase in traffic volumes, the An Bord Pleanála Inspector found that she was "*…satisfied, subject to the inclusion of appropriate measures as discussed above and any recommended planning conditions, that the development would not have any significant adverse effects on traffic and transport and no significant residual impacts are likely to arise.*" An Bord Pleanála, in subsequently deciding to grant planning permission, concluded that "*Roads and traffic impacts associated with the construction phase will be mitigated through agreement with Transport Infrastructure Ireland for works on the national road network and the preparation of a Construction Traffic Management Plan which will be agreed with the planning authorities prior to the commencement of development*".

It is likely that construction materials for the subject project; such as stone/rock, sand and concrete; will be sourced from the same quarries as those selected for the White Hill 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 7 no. material deliveries (trips) per day which; in combination with the traffic volumes predicted as arising from the construction of the White Hill Wind Farm, is not assessed to represent a significant increase. Moreover, 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 White Hill Wind Farm (including turbine component delivery routes) and the subject project.

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 predominately 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 (Authorities) 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 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 (Authorities) will receive prior notification;

- Due to the transient nature of the underground electricity line works, rolling road closures will be implemented where the electricity line is to be installed within the carriageway of public roads. 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 surveys, 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 Planning Authority (Authorities);
- Appropriate and adequate signage shall be provided at all entrances providing access, safety and warning information;
- At the site entrances leading to the electricity substation and electrical control unit, 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 (or facilities) will be provided, as necessary, to prevent any debris being transferred from electricity substation site and the electrical control unit compound 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 Planning Authority (Authorities) and only following receipt of all necessary licences, permits and consents;
- Joint bases will be installed within private lands and not within the public road corridor;
- 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 the Planning Authority (Authorities) prior to the commencement of development and as part of the road opening licencing process;
- The project will not require the delivery of any abnormal-sized or abnormal-weight loads. The electrical transformer to be installed at the electricity substation will be delivered to site via multiple loads; the heaviest of which will have a weight of c. 68-tonnes; and 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). The Developer will engage with all relevant stakeholders once the precise delivery route of the electrical transformer is known. Furthermore, and in accordance with Circular RW18 of 2024 as published by the Department of Transport, the project will not require the delivery of any Exceptional Abnormal Loads;
- A designated contact point and coordinator will be put in place to manage all access arrangements and to interface with the public and the Planning Authority (Authorities); 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 operational and decommissioning phases have been assessed as being imperceptible and not significant, respectively, and specific mitigation measures are not assessed as being required. However, best practice measures will be implemented during the decommissioning phase in addition to any relevant measures listed above.

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 the Planning Authority (Authorities). During construction, 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

During the decommissioning phase, the magnitude and significance of effects will be substantially reduced compared to the construction phase. With the implementation of best practice methods and any relevant mitigation measures as set out at **Section 12.2.5.1**, residual effects are assessed to be imperceptible, negative and short-term.

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 White Hill 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, operation or decommissioning 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 White Hill Wind Farm, which comprises 7 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 White Hill 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 12.2**) 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 March 2024 (see **Chapter 1**), which included the *Preliminary Scoping Report*, a general description of the project and site location drawings.

At the time of writing, a response has not been received from the Department of Defence or IAA.

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 proposed wind turbines are located c. 95km south-west of Dublin Airport, c. 55km north of Waterford Airport, and c. 125km east of Shannon Airport.

There are also a number of aerodromes, airfields, and airstrips located within 40km of the proposed wind turbines including:-

- Maganey Airstrip (Carlow) located c. 20km north-east;

- Hacketstown Airfield (Carlow) located c. 38km northeast;
- Abbeyleix Airfield (Laois) located c. 25km north-west; and,
- Kilrush Airfield (Kildare) located c. 38km north.

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. The project is located within 3-nautical miles of the M9 motorway corridor; identified as a critical low-level route identified at para. 2(2)(c) and illustrated at Annex D of the Paper; however, the tallest structures associated with the project are 18m in height (lightning masts) and are unlikely to interact with any aviation receptors.

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 including the M9 critical low-level flying route identified in the *Draft Air Corps Wind Farm/Tall Structures Position Paper*.

12.3.4.3 Decommissioning Phase

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

12.3.4.4 Cumulative Effects

Given the low altitude of infrastructure associated with the project, it is assessed that there is no likelihood of the project giving rise to 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 required or proposed.

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.

Moreover, the project does not require the installation of any tall structures such that could interact with civilian aviation activities or any military aviation activities utilising the M9 critical low-level flying route. 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 research[6] 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 Síochana;
- BT Communications Ireland;
- Coimisiún na Meán;
- Commission for Communications Regulation;
- Eir Limited;
- Enet Telecommunications Networks Limited;
- Imagine Group;
- Magnet Plus;
- National Ambulance Service;
- Open Eir;
- Radio Services and Building Limited;
- 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, Coimisiún na Meán, Tetra Ireland Communications Limited, Three (3) Ireland, Towercom, Virgin Media Ireland and 2rn; 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 1.7**.

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

[6] https://siteviewer.comreg.ie/

there are microwave, and other, links present, the project site is not a strategically important location for telecommunications infrastructure.

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 during the operational phase.

12.4.4.3 Decommissioning Phase

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

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, 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 quarrying with numerous quarries located in County Kilkenny and County Carlow.

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 a number of existing wind farms in County Kilkenny including Bruckana Wind Farm (partial), Lisheen Wind Farm (partial), Ballybeagh Wind Farm, Foyle Wind Farm, Lisdowney Wind Farm, Rahora Wind Farm, Ballymartin Wind Farm, and Smithstown Wind Farm; while a number of micro-generation developments have also been constructed/permitted. Additionally, the Castlebanny Wind Farm was granted planning permission by An Bord Pleanála[7] in September 2022; while a number of other developments including the Freneystown Wind Farm, Ballynalackan Wind Farm and Ballyfasy Wind Farm are in the early stages of their development cycle.

In addition to the above, there are a number of wind energy micro-generation sites located throughout the county.

There is currently 1 no. operational wind farm in County Carlow; at Greenoge; while there are a number of micro-generation developments including Tullow Mushroom Growers, Ballon Wind, and a single turbine development at Kilcarrig, Bagenalstown (Muine Bheag). The permitted Bilboa Wind Farm has not yet been constructed; while planning permission has been sought for the Seskin Wind Farm.

Additionally, a number of utility-scale solar energy developments have also been permitted and constructed in the region.

12.5.2.2 Non-Renewable Resources

There are also a significant number of extant quarrying activities within the wider environs of the project site. As discussed at **Section 12.2** 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 the counties of Kilkenny and Carlow

[7] An Bord Pleanála Reference ABP-309306-21

predominately comprises 38kV and 110kV electricity transmission lines; with lower voltage distribution lines connecting individual properties to the network.

EirGrid is the transmission system operator (TSO) responsible for both the planning and operation of Ireland's high voltage national grid (≥110kV) while ESB Networks is responsible for the development of medium and low voltage lines (≤38kV).

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 drainage infrastructure are also present along local roads.

During consultation with Gas Networks Ireland, it was identified that a high-pressure gas pipeline is located c. 250m east of the electricity substation and will be crossed by the underground electricity line. Gas Networks Ireland advised that a minimum separation between the gas line and the electricity line of 0.6m would be required.

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.

Due to the below-ground depth of the existing gas line (3.2m) and that of the proposed electricity line (1.1m), a separation of 2.1m is achievable and will be provided for; thus avoiding any likelihood of interaction with the pipeline during excavations and installation of the electricity line. An assessment of the likely stresses and effects of the construction of the electricity line on the gas pipeline has been undertaken and is enclosed at **Annex 12.3**. The assessment finds that the likely effects; including barlow stress, effective stress, principle stress and fatigue; are each within allowable tolerances. Therefore, it is assessed that the construction of the project will not have a significant effect on the gas pipeline.

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, electrical control unit compound, and access tracks. 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. In the

event of interaction with the gas pipeline, there is a risk of significant effects on the operation of the gas network.

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 White Hill 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**).

An assessment of the likelihood of adverse effects on the gas pipeline arising from electrical/inductive interference (operation of the electricity line and electricity substation) has been undertaken and is enclosed at **Annex 12.4**. The assessment has been undertaken having regard to the known characteristics of the gas pipeline, the design characteristics (depth, trefoil ducting formation and route alignment)) of the underground electricity line and the nature of the crossing of the pipeline and electricity line. The assessment concludes that, under normal operating conditions, the effect of electromagnetic radiation on the pipeline will be within acceptable limits and will not be significant. Similarly, it is assessed that, under fault conditions, the electricity line will exert an effect on the gas pipeline which is below the relevant threshold.

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 the activities of the decommissioning of the project are substantially reduced compared to the construction phase, no significant effects are likely to occur. In particular, the proposed decommissioning methodology of the underground electricity line (i.e. removing electricity line from ducting but ducting remaining in situ) significantly reduces the likelihood of accidental interference with underground services and, in particular, the high-pressure gas line.

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.

The installation of the underground electricity line will be undertaken in strict accordance with the *Code of Practice for Working in the Vicinity of the Transmission Network* (Gas Networks Ireland, 2021) and particularly with respect to the use of hand-held equipment within 1.5m (linear distance) of the pipeline. Prior to the commencement of trenching activities within 50m of the gas line, the appointed contractor will prepare a detailed Method Statement outlining the precise methodology to be implemented. The Method Statement will also detail the use and management of heavy machinery (tracked excavators, etc.) during works within 50m of the pipeline.

This statement will be reviewed by Gas Networks Ireland to confirm the appropriateness of the proposed methodology and ensure that all necessary mitigation and incident prevention measures are adhered to. The Method Statement may also be reviewed, as necessary, by the Planning Authority.

12.5.3.2 Operational Phase

Other than in respect of the gas pipeline, no specific mitigation measures are proposed or required during the operational phase.

A set of measures will be implemented to ensure the protection of the gas pipeline, including:-

- Prior to the commencement of operations, baseline electrical interference measurements will be undertaken at the gas pipeline. Datalogging will be undertaken at the Gas Networks Ireland test posts located along the pipeline and in proximity to the electricity substation over a minimum period of 5-days. Soil resistivity values will also be recorded; and
- Once baseline levels are recorded, the electrical/inductive interference levels for normal and fault operations will be re-calculated. In the event that additional mitigation is required, or requested by Gas Networks Ireland, this is likely to comprise the repair of any known pipeline coating defects and/or monitoring of interference levels. Such works will be undertaken by Gas Networks Ireland in consultation with the Developer, where necessary;
- During commissioning of the electricity line and substation, interference levels will again be measured to reaffirm the previous calculations;
- Interference will continue to be recorded at the existing test posts.

It should be noted that the precise details and implementation of any mitigation measures will be dictated by Gas Networks Ireland, who may require additional or alternative measures to those described above.

12.5.3.3 Decommissioning Phase

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

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 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.