Pinewoods Wind Farm Substation & Grid Connection

Chapter 13: Material Assets

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13.0 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 taken to mean "*built services and infrastructure*"[2]. The majority of assets of natural origin are assessed elsewhere within this EIAR such as biodiversity, water quality, air quality and landscape. This chapter addresses, therefore, assets which are of intrinsically human origin, including transport, access, aviation, telecommunications, and resources & utility infrastructure. Another material asset of human origin, archaeology and cultural heritage, is addressed in **Chapter 10**.

13.0.1 Description of Proposed Development

In summary, the proposed development comprises the following main components:-

- 1 no. 110kV 'loop in-loop out' air-insulated switchroom (AIS) substation including control buildings, transformers and all ancillary electrical equipment; and
- All associated site development, access and reinstatement works.

The entirety of the proposed development is located within the administrative area of County Laois; while the overall Pinewoods Wind Farm project is partly located within County Laois and County Kilkenny. Additionally, candidate quarries which may supply construction materials are also located within County Kilkenny and Carlow.

A full description of the proposed development is presented in **Chapter 3**

13.1 Transport & Access

13.1.1 Introduction

13.1.1.1 Background and Objectives

The following section provides an assessment of the likely significant effects on transport and access resulting from the construction, operation and decommissioning of the proposed development. Full details of the proposed development are provided in **Chapter 3**.

This section provides an assessment of the local road network for construction, operational and decommissioning traffic and reviews the site access arrangements for construction, operational and decommissioning phases of the proposed development.

It should be noted that the likely effects of the construction and operation of a 110kV electricity substation have previously been fully assessed by An Bord Pleanála at this general location and were found not to be significant. However, due to alterations to the precise design of the proposed development versus that previously assessed and to ensure that the proposed development is fully evaluated within this Volume I EIAR; the likelihood of significant effects, both individually and cumulatively with other developments, has been fully assessed in this chapter.

[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, 2017)

13.1.1.2 Statement of Authority

This section has been prepared by members of the GES Environment & Planning Team. GES has substantial experience having prepared Material Asset (Transport & Access) chapters for multiple EIAR developments.

13.1.2 Methodology

13.1.2.1 Assessment Methodology

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

- Review of planning policy and guidance review;
- Desk study, including review of available maps and published information;
- Site walkover, including review of road network to be used;
- Evaluation of likely effects;
- Evaluation of the significance of these effects; and
- Identification of measures to avoid and mitigate any likely effects.

13.1.2.2 Planning Policy & Guidelines

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

- Draft Advice Notes on Current Practice (in the preparation on Environmental Impact Statements) (EPA, 2015);
- Draft Revised Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA 2017);
- Advice Notes on Current Practice (in the Preparation on Environmental Impact Statements)(EPA 2003);
- Guidelines on the Information to be Contained in Environmental Impact Statements (EPA 2002);
- Laois County Council Development Plan 2017-2023 ('the CDP');
- The Design Manual for Urban Roads and Streets ('DMURS')[3];
- The Design Manual for Roads and Bridges ('DMRB') published by Transport Infrastructure Ireland ('TII'); and
- Traffic and Transport Assessment Guidelines (TII, 2014[4]).

An assessment of the relevant transport policies and objectives of the CDP are set out in **Table 13.1** below.

Planning Objective	Assessed	Comment
OBJECTIVE TRANS 1: Support the sustainable transport principles outlined in Smarter Travel: A Sustainable Transport Future (Department of Transport, 2009).	Yes	The implementation of this objective will be assessed at **Section 13.1.4.1** and **Section 13.1.4.2**
OBJECTIVE TRANS 2: Upgrade and improve the hierarchy of road transportation links between town and villages to cater for existing trip generation numbers and patterns and provide for anticipated trip generation numbers and patterns as	No	Improvement of transportation links between towns and villages is not relevant to this proposed development.

[3] http://www.housing.gov.ie/sites/default/files/migrated-files/en/Publications/DevelopmentandHousing/Planning/FileDownLoad%2C32669%2Cen.pdf
[4] https://www.tiipublications.ie/library/PE-PDV-02045-01.pdf

envisaged by the settlement strategy and economic development strategy.		
OBJECTIVE TRANS 3: Where roads are being improved and upgraded the opportunity will be taken where possible to address inadequate existing mitigation measures or impeded passage, for example the inclusion of mammal underpasses or dry ledges where there is poor culvert design.	No	The proposed development does not propose improvements or upgrades to public roads
OBJECTIVE TRANS 4: To integrate land use policies and transportation in a manner which reduces reliance on car based travel and promotes more sustainable transport choices.	No	The proposed development does not require the integration of land use policies.
OBJECTIVE TRANS 5: To guide development to ensure that it is positioned in a location which minimises the need to travel and co-ordinates particular land uses with their accessibility requirements.	Yes	The proposed development has been located adjacent to the Laois-Kilkenny Grid Reinforcement Project and the Pinewoods Wind Farm to minimise travel between these associated developments.
OBJECTIVE TRANS 6: Ensure that all proposed plans or projects relating to transportation (including walking, cycling, rail, bus and roads) and any associated improvement works, individually or in combination with other plans or projects, are subject to Appropriate Assessment Screening to ensure there are no likely significant effects on the integrity (defined by the structure and function) of any Natura 2000 site(s) and that the requirements of Articles 6(3) and 6(4) of the EU Habitats Directive are fully satisfied. Where the plan or project is likely to have a significant effect on a Natura 2000 site, or there is uncertainty with regard to effects, it shall be subject to Appropriate Assessment. The plan or project will proceed only after it has been ascertained that it will not adversely affect the integrity of the site or where in the absence of alternative solutions, the project is deemed imperative for reasons of overriding public interest, all in accordance with the provisions of Articles 6(3) and 6(4) of the EU Habitats Directive.	Yes	The proposed development has been fully assessed in the accompanying Natura Impact Statement.
Planning Policy	**Assessed**	**Comment**
TRANS 7: Avoid the creation of any new direct access points from development or the generation of increased traffic from existing direct access/egress points to the national road network to which speed limits	No	The proposed development does not provide for the creation of access points from the national road network.

greater than 60kmh apply.		
TRANS 8: 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 schemes.	No	The proposed development does not provide for any improvements to the national roads network nor does it impact upon any future national road network schemes.
TRANS 9: Prevent inappropriate development on lands adjacent to the existing national road network, which would adversely affect the safety, current and future capacity and function of national roads and having regard to possible future upgrades of the national roads and junctions.	No	The proposed development is not located adjacent to or in the vicinity of the national roads network.
TRANS 10: Ensure that any development permitted along national roads is in accordance with the Spatial Planning and National Roads – Guidelines for Planning Authorities (DoECLG, 2012) or any updated version.	No	The proposed development is not located adjacent to or in the vicinity of the national roads network.
TRANS 11: Facilitate a limited level of new accesses or the intensified use of existing accesses to the national road network on the approaches to or exit from urban centres that are subject to a speed limit zone between 50kmh and 60kmh otherwise known as the transition zone. Such accesses will be considered where they facilitate orderly urban development and would not result in a proliferation of such entrances, leading to a diminution in the role of these transitional zones. The Council will have regard to the nature of the proposed development and the volume of traffic to be generated by it and the implications for the safety, capacity and efficient operation of the national road. A Road Safety Audit, prepared in accordance with the Design Manual for Roads and Bridges (NRA, 2010), shall be submitted where appropriate.	No	The proposed development does not provide for the creation of access points from the national roads network.
TRANS 12: Control the signage on and adjoining national roads in accordance with the Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012) and the National Roads Authority's policy statement on the Provision of Tourist and Leisure Signage on National Roads (March 2011) and any updated versions of these documents.	No	The proposed development does not provide for the erection of any signage along the national road network.
TRANS 13: Support all measures to ensure HGVs use the motorway network.	Yes	The implementation of this policy is assessed at **Section**

		13.1.4.1.
TRANS 14: Consider permitting access for replacement dwellings for persons who [or their families] own the original house and site for a minimum of 10 years [documentary evidence in this regard to be submitted] subject to the following provisions: • The original dwelling is in-situ and is habitable; • The cost of refurbishment of and/or extension to the original dwelling is prohibitive; • The applicant complies with the provisions of the local need factor of the rural housing policy as outlined in Section2.6.1; • An alternative site with access onto a minor road is not available; • The proposed development can be accommodated without the creation of a specific traffic hazard; • Where possible an existing entrance is used; • The Councils road standards are fully met; • The site is of minimum size of 0.202 hectares[0.5acres]; • If necessary, a replacement septic tank drainage system in accordance with the requirements of the EPA Code of Practice: Waste Water Treatment and Disposal Systems Serving Single Houses (p.e ≤10) 2009 shall be installed on the site.	No	The proposed development does not provide for the creation of access points from the national roads network.
TRANS 20: Encourage and facilitate investment in the local road network.	No	The proposed development does not provide for any upgrade to the local roads network.
TRANS 21: Subject to availability of resources, provide for and carry out improvements to sections of local roads that are deficient in respect of realignment, structural condition or capacity, and to maintain that standard thereafter.	No	The proposed development does not provide for any upgrade to the local roads network.
TRANS 22: Require development proposals accessing onto local roads to comply with the Council's road standards contained in the Road Design Section document titled Roads and Parking Standards (2007) and to any subsequent revisions thereto.	Yes	The implementation of this objective will be assessed at **Section 13.1.4.1** and **Section 13.1.4.2.**
TRANS 23: In retrofitting and developing	No	The proposed development

new roadways the planning authority and developers shall have regard to Design Manual for Urban Roads and Streets (DTTS and DECLG,2013].		does not provide for the retrofitting of existing roadways or development of new roadways.
TRANS 24: Ensure that the Council's own development and those of other developers and agencies has regard to the Design Manual for Urban Roads and Streets (DTTS and DECLG, 2013). Proposals shall: a. Consider the needs of pedestrians, cyclists and public transport users ahead of the needs of private car drivers; b. Seek to create more attractive places on roads/streets which communities can understand and enjoy; c. Seek to ensure that the design of the road/street is influenced by its function and the contexts of the places that road/street passes through, and that permeable and legible street networks are promoted; d. Have regard to the detailed advice and standards within the Manual including: i. Speed limits and traffic and congestion management; ii. Street landscaping; iii. Active street edges; iv. Control of traffic noise and pollution; v. Signage and linemarking; vi. Street furniture and lighting; vii. Material and finishes; viii. Historical contexts; ix. Pedestrianised and shared surface areas.	No	The proposed development does not propose works in an urban setting.

Table 13.1: Relevant Transport Objectives & Policies from Laois County Development Plan 2017-2023

The R430, which will be used as a haul route for construction materials, is identified as a Strategic Regional Route in the CDP. This route provides a strategic link to main settlements in the county and carries substantial volumes of traffic.

Thresholds relating to traffic impact assessments for new developments are detailed in the TII publication *Traffic and Transport Assessment Guidelines*. The thresholds for the mandatory preparation of a traffic impact assessment, set out at Tables 2.1, 2.2 and 2.3 of the guidelines, have not been exceeded by the proposed development.

13.1.2.3 Desk Study

A desk study of the proposed development site, haul routes and the surrounding area was undertaken. The sources of information included documentary sources, such as those outlined at **Section 13.1.2.2** 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.

Concerns raised by local residents and consultees in previous submissions related to the Pinewoods Wind Farm as they relate to transport and access were also assessed in the preparation of this chapter.

13.1.2.4 Field Work

A site visit, including a walkover survey of the site and a windshield survey of the local road network, was undertaken on 27 March 2020. The site visit was used to verify information obtained as part of the desk study and to visually assess the site entrance location and associated vehicle visibility splays. In addition to data collection with regards the proposed development, this site visit was used to evaluate the findings and conclusions of the Pinewoods Wind Farm EIAR/EIS in respect of transport and access.

13.1.2.5 Evaluation of Likely Effects

Following the assessment of the baseline environment, the available data was used to identify and categorise effects likely to affect the local road network used for the delivery of construction materials and movement of staff and personnel.

The statutory criteria (EPA, 2017; EPA, 2003) for the assessment of impacts require that likely impacts 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 EPA (2002) 'Glossary of Impacts'.

Impacts may be categorised as follows:-

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

Sensitivity

The sensitivity of the local transport infrastructure has been identified using the criteria outlined within the TII Guidance. These criteria are outlined in **Table 13.2** 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.

Table 13.2: Criteria for Rating Site Attributes

Magnitude

The magnitude of likely effects has been defined in accordance with the criteria

provided in the 2017 EPA publication *Draft Guidelines on the information to be contained in Environmental Impact Assessment Reports* as outlined within **Table 13.3** 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 13.3: Impact Assessment Criteria

Significance Criteria

The significance of the likely effects of the proposed development have been classified by taking into account the sensitivity of receptors and the magnitude of the impacts on them, combined with the likelihood of an event occurring as defined in **Table 13.4**.

Importance of Attribute	Magnitude of Impact			
	Negligible	Small	Moderate	Large
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/ Moderate	Profound/ Significant	Profound
High	Imperceptible	Moderate/ Slight	Significant/ Moderate	Severe/ Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/ Moderate

Table 13.4: Rating of Significant Environmental Impacts

13.1.3 Description of Existing Environment

13.1.3.1 Local Road Network

The road network in the vicinity of the proposed development site generally comprises regional and local roads, with the R430, which is designated as a strategic regional route in the CDP, located c. 1.5km north of the site. The R432 is located approximately 3.5km west of the proposed development site, while the R426 is located c. 6km to the southeast. In addition, the N80 National Secondary Road is

located approximately 13km to the northeast of the proposed development site and the N78 is located approximately 9km to the southeast. Many of these roads will be utilised as possible haul routes to transport construction materials to the proposed development site.

Access to the proposed development site will be provided by the national (including motorway) and regional road networks to within approximately 3km of the site. From this point (i.e. junction of the R430 and L7800), access to the site will be via local roads and private access tracks associated with the permitted Pinewoods Wind Farm.

13.1.3.2 Access to the Proposed Development Site

As set out above, access to the proposed development site will largely be via the national and regional road network, with the final c. 3km being via local roads and private access tracks. Where construction materials are being delivered from further afield, suppliers will be actively encouraged to utilise the motorway network, where possible, followed by the national and regional network and, finally, the local road network to access the proposed development site itself.

While the final selection of a haul routes to the site will be dependent on the chosen material supplier(s), suppliers will only be permitted to access the proposed development via the R430, L7800, L78001 and the L77951. Additionally, construction traffic will utilise short sections of private access track, associated with the Pinewoods Wind Farm, between the L7800 and L78001 and between the L78001 and L77951. The haul routes from a range of candidate quarries which may be selected to provide construction materials to be the proposed development are illustrated at **Annex 13.1** (**Volume II**).

Access to the proposed development site will be provided by the construction of a new site entrance from the L77951. From the site entrance, c. 0.65km of access track will be constructed to provide access to the proposed substation location.

In relation to the provision of vehicle visibility splays (sightlines), the proposed site entrance has been carefully designed to ensure compliance with the requirements of Table 2.1 of the Laois County Council Roads & Parking Standards 2007. The site entrance, being provided from a local tertiary road, provides for visibility splays of 60m in each direction.

In response to Laois County Council's request for further information (RFI) in respect of the permitted Pinewoods Wind Farm, the proposed construction material haul route has previously been the subject of an extensive and comprehensive condition and structural assessment. The haul route, from the R430, has undergone falling weight deflectometer tests, a road safety audit and a traffic impact assessment which, as a whole, found that significant effects on the road network were unlikely to occur.

All construction related traffic will be instructed to access the proposed development site using the above described vehicular access arrangement and fully laden HGVs will not be permitted to use alternative routes in the immediate vicinity of the proposed development site. As set out at **Section 3.5.1** (**Chapter 3**), and in accordance with a scoping consultation response received from the Roads Design Office of Kilkenny County Council, the L1828 will not be used for the transportation of materials to the site and all suppliers will be prohibited from utilising this road.

13.1.3.3 Vehicle Specification

Delivery of general construction materials and drawing of aggregates to and from site for the construction of the proposed development will be generally undertaken using standard HGVs, cement mixer trucks, and dump trucks, the largest of which is anticipated to be a 16.5m articulated vehicle as shown in **Figure 13.1** below. The transportation of aggregates will generally be undertaken by 8-wheel tipper trucks, the typical specifications of which are illustrated at **Figure 13.2**.

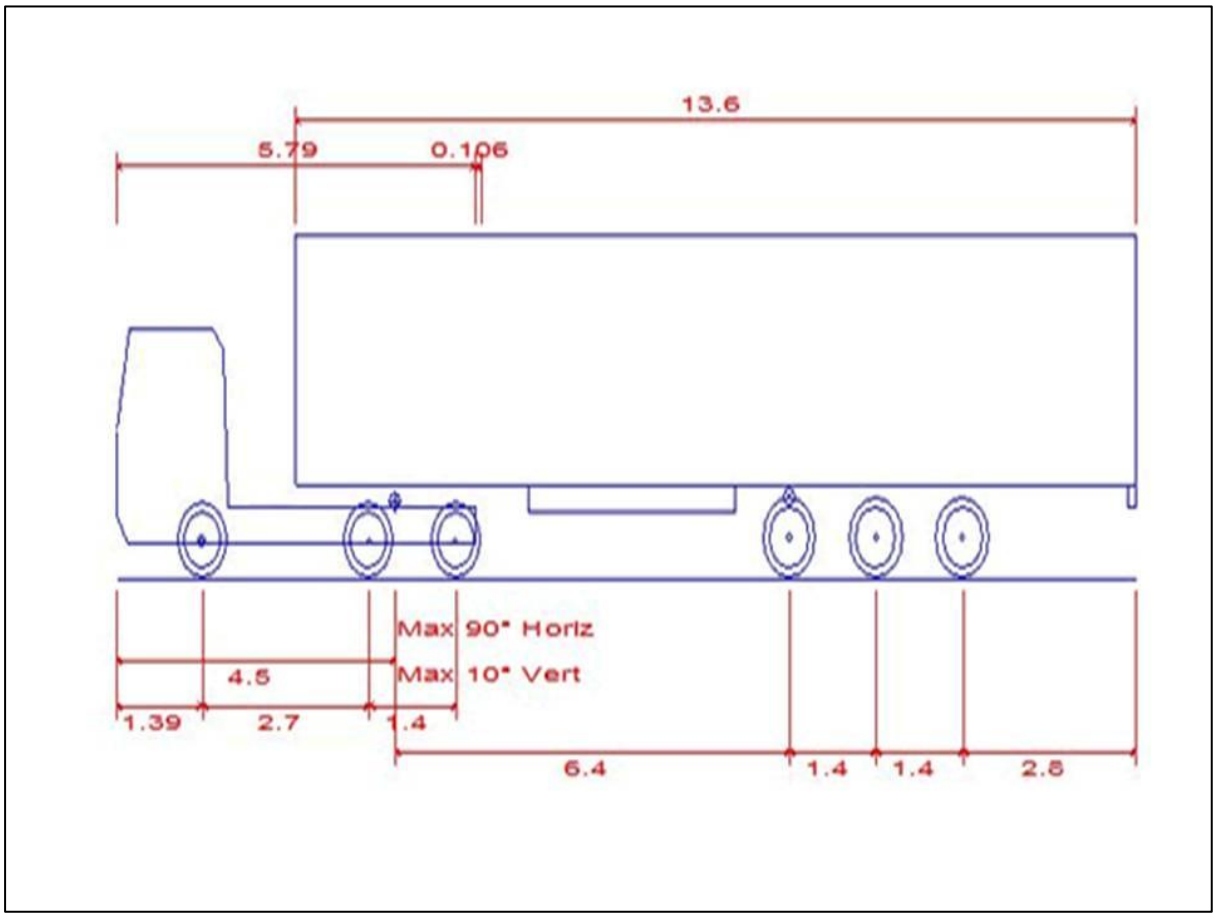

Figure 13.1: Standard HGV

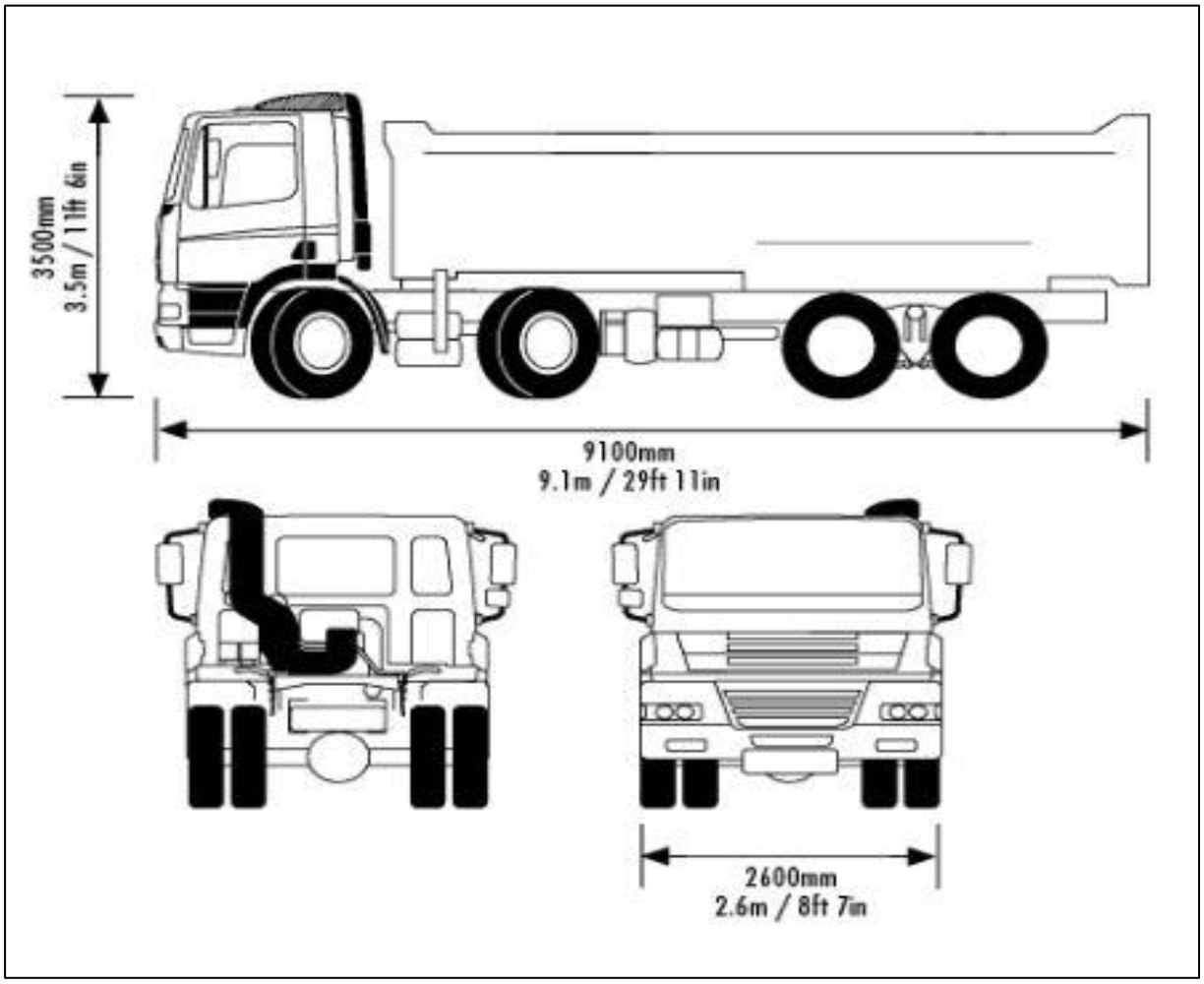

Figure 13.2: Standard Rigid Tipper Truck

13.1.4 Description of Likely Effects

13.1.4.1 Construction Phase

The construction period of the proposed development is estimated to have a duration of approximately 15-18 months, with the majority of traffic movements being associated with the construction of the substation compound and the delivery of electrical apparatus and equipment. During this period, trips will be associated with the arrival and departure of construction staff and with the delivery of aggregates, ready-mix concrete and electrical equipment.

The proposed development site is a sloping site and site excavation will be required to facilitate the required gradients for the buildings, structures and electrical equipment. This will necessitate the drawing of subsoil from the site via standard rigid tipper trucks.

Staff trips will mainly be made using LGVs and crew vehicles, while deliveries of stone, concrete, electrical equipment and other general construction materials will be made by HGV.

The construction phase of the proposed development will comprise a six-day week with normal working hours from 08:00 to 20.00 Monday to Friday and 08:00 to 18.00 on Saturdays. It may be necessary to undertake works outside of these hours to avail of favourable weather conditions or 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.

HGV Movements

The estimated timescale for the completion of the construction phase is approximately 15-18 months, which allows approximately 15 months for civil construction and electrical installation and approximately 3 months for commissioning of the substation.

It is estimated that during civil construction, approximately 862 no. loads will be delivered to site; while, over the course of the construction phase, it is estimated that 3,911 loads of excavated material will be transported from the proposed development site to the Pinewoods Wind Farm or off-site for disposal in an appropriate environmentally sensitive manner. Assuming a 15 month civil works construction phase, this equates to approximately 318 no. loads per month or an average of 15 no. loads or HGV movements per day excluding Sundays and public holidays. The majority of civil construction material, such as aggregates, concrete and building materials will be delivered to site using standard rigid trucks, HGVs and ready-mix trucks.

While a substantial portion of the excavated material will be re-used in the formation of the proposed access track and substation compound (see **Chapter 3** and **Chapter 6**), it will also be necessary to import additional aggregate material to finish the access track and substation compound to the requisite specification. It is estimated that a total of 5,148m^3 (605 no. loads) of stone aggregates will be imported to site.

There will be an estimated 33,250m^3 (3,911 loads) of spoil material excavated which cannot be used in either the construction of the proposed development or, subsequently, in the reinstatement or landscaping of the site. This material will, where possible, be exported to the Pinewoods Wind Farm site for use in the construction of access tracks and areas of hardstanding (where suitable material arises) or may be used for reinstatement or landscaping purposes. Should excess material arise which cannot be re-used at either location, it shall be removed from site and disposed of at a licensed waste facility.

Following the completion of construction works, it is estimated that approximately 25 no. loads will be needed to remove all temporary equipment, plant and machinery and materials used on site e.g. equipment and machinery, fencing, cabins, storage containers etc. **Table 13.5** details the estimated amount of deliveries to/from the proposed development site.

Material	Quantity	No. of Loads
Rock/Stone Aggregates to be imported	5,148m^3	605
Electrical Equipment & Cabling	-	87
Miscellaneous Building Materials (control building materials, concrete, fencing, tools etc)	-	130
Strain Towers	-	15
Removal of all temporary on-site equipment and materials	-	25
Transport/Removal of Excavated Material to Pinewoods Wind	33,250m^3	3,911

Farm or off-site		
Total	-	4,773

Table 13.5: Estimated Construction Materials and No. of Deliveries

The expected number of HGV deliveries is based on best estimates of trips generated by similar proposed developments, previous experience of such developments 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 appointed contractor.

Based on the above estimated vehicular movements, the predicted effect on the road network as a result of the increase in HGV movements associated with the proposed development is moderate, negative, direct, high probability but short term. This assessment has been reached in consideration of the temporary duration of the proposed construction phase and the modest estimated daily increase in HGV movements of 15 no. movements on average.

Construction of Site Entrance

As discussed in **Chapter 3**, a new site entrance will be created to facilitate the construction of the proposed development. The site entrance has been designed to provide appropriate visibility splays. During the construction phase, all works related to the construction of the entrance will be undertaken from private lands which will ensure that there are no significant direct transport and access effects on the local road network through disruption or delay to traffic flows. As a result, effects are assessed to be moderate, negative, short-term and of a high probability.

Construction Personnel

The number of staff employed at the proposed development site will vary according to the phase of works, peaking at up to approximately 50 no. at any one time. It is expected that the majority of workers will arrive on site in LGVs and crew vehicles. In accordance with Objective TRANS 1 of the Laois CDP 2017-2023; vehicle sharing, subject to compliance with all relevant public health advice, will be actively encouraged to reduce vehicular movements. It is expected that c. 15 no. staff vehicles will visit the site on a daily basis during the peak construction period.

Parking for staff will be provided on-site. No parking will be allowed for construction workers on the public road network. The additional vehicular movements associated with staff travelling to site are not assessed as likely to result in significant effects on transport and access. Effects are assessed to be imperceptible/slight, negative, short-term and of high probability.

Overall Classification of Effects

The above sections have assessed the effects of the proposed development on transport and access which may arise as a result of the construction phase. Overall, the effects are not assessed to be significant and are concluded to be a slight, negative effect of short-term duration and high probability.

13.1.4.2 Operational Phase

During the operational phase, the proposed development will generally be unmanned. Operational monitoring activities will be carried out, remotely, 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 proposed development would require 1-2 no. visits to the site per week by maintenance personnel. Parking will be available within the proposed substation and maintenance staff will be instructed not to park on any public road. In the case of a major fault; e.g. change-out of electrical apparatus; larger machinery may require access to the site.

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

13.1.4.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

13.1.5 Cumulative Effects

Cumulative effects are assessed as only likely to occur during the construction phase of the proposed development. Cumulative effects are unlikely to occur during the operational phase due to the absence of significant traffic generation as outlined in **Section 13.1.4.2**.

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 and agricultural developments, 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.

Pinewoods Wind Farm

The proposed development will be commissioned as a single construction phase with the Pinewoods Wind Farm. It is likely, therefore, that cumulative transport and access effects will arise particularly in relation to increased traffic volumes on the surrounding road network. Upgrade works to the public road network associated with the Pinewoods Wind Farm, as permitted by the Board, will be substantially completed prior to the delivery of materials for the proposed development to ensure that the local road network is capable of accommodating the increased traffic volumes and avoid, insofar as possible, additional traffic disruption.

In respect of the permitted development and having regard to the associated traffic volumes and the proposed upgrade works, the Board' Inspector determined that:-

> *"...having regard to the short term duration and subject to detailed mitigation as outlined, the proposal is acceptable for a roads and traffic perspective."*

Subsequently, in deciding to grant planning permission, the Board concluded that:-

> *"...the proposed development would be acceptable in terms of traffic safety and convenience."*

As part of the cumulative assessment, the existing road network has been re-evaluated to determine whether there has been any change to the condition or structural integrity of the road network since the completion of the previous

assessments. The appraisal of the road network comprised a driven windshield survey and a subsequent comparison with the results of previous assessments and it is concluded that there have been no significant changes to the existing road network, or its condition, in the intervening period which would conflict with the conclusions of those assessments or the findings of the Board.

The proposed improvement/upgrade works will ensure that the road network is fully capable of accommodating all construction phase traffic and it is concluded that the proposed development will not result in any significant cumulative effects on the structural integrity of the road network.

The traffic volumes predicted to be generated during the construction of the proposed development are set out at **Section 13.1.4.1**. As set out at **Chapter 13** (**Volume III**), it is predicted that 2,434 no. HGV deliveries will be required to import aggregates to the Pinewoods Wind Farm for the construction of access tracks and hardstandings. The construction phase of the proposed development will involve the export of c. 5,872m^3 or approximately 690 no. loads of rock material to the Pinewoods Wind Farm where it will be utilised in the construction of access tracks and areas of hardstanding. The export of this material will utilise a short stretch of the L77951 local road; however, due to the limited volumes of traffic on this road and the absence of dwellings along the stretch of road to be used, no likely significant effects are assessed as likely.

The availability of locally won material at the proposed development site and the opportunity to use this material in the construction of the Pinewoods Wind Farm represents a significant environmental benefit in terms of reducing traffic movements on the wider road network from the predicted level of 2,434 no. to 1,744 no. In this context, the proposed development will result in a beneficial cumulative effect on transport and access.

Overall, while the proposed development will result in an increase in the volume of traffic movements on the local road network during the construction phase; given the conclusion that the effects arising during the construction phase will be slight, negative, short-term and high probability and the conclusions of the Board in respect of the Pinewoods Wind Farm, it is concluded that significant cumulative effects arising from the project as a whole (i.e. proposed development and permitted Pinewoods Wind Farm) are not assessed as likely to arise.

Cullenagh Wind Farm

The Cullenagh Wind Farm, located c. 5km north of the proposed development is not assessed as likely to result in significant cumulative transport and access effects due to the separation distance between the developments and the absence of direct effects and traffic management/restriction requirements resulting from the proposed development.

Laois-Kilkenny Grid Reinforcement Project

The Laois-Kilkenny Grid Reinforcement Project, to which the proposed development will be connected, may be constructed in advance of or concurrently with the proposed development. Should the construction phases overlap, it is likely that there will be a slight, negative, indirect and short term effect on transport and access due to increase construction traffic. However, due to the temporary duration of the construction phase associated with the respective projects and the transient nature of the construction activities associated with the Laois-Kilkenny Grid Reinforcement

Project, it is concluded that there is no likelihood for significant cumulative effects to arise.

Quarrying Activities

In relation to quarrying activities, given that the proposed development is not located proximate to these developments or along a likely transportation route, significant cumulative transport & access effects are unlikely. As discussed above, due to the requirement to import concrete and aggregates, it is likely that some traffic movements associated with these quarrying activities will, in fact, be to the proposed development site. It is assessed, therefore, that there is no likelihood of significant transport or access effects arising and the likelihood of cumulative effects is assessed to be slight, negative, indirect and short-term.

13.1.6 Mitigation & Monitoring Measures

13.1.6.1 Mitigation

The likely effects of the proposed development have been identified as being slight to moderate and temporary in nature and associated with short-term construction activities. Likely effects during the operational phase have been assessed as being imperceptible and hence mitigation measures are not deemed to be necessary.

As the proposed development is likely to be constructed concurrently with the permitted Pinewoods Wind Farm, all mitigation measures relevant to that particular development will be implemented, as applicable, in respect of the proposed development. The implementation of these measures will ensure that the road network and local residents, businesses and landowners do not experience any likely significant effects.

With regards to the proposed development, while the likelihood of significant effects is not assessed as likely, even in the absence of mitigation; a suite of specific measures are available which will further reduce any likely effects during the construction phase. The following mitigation measures will be implemented:-

- Traffic movements will be limited to 08:00 - 20:00 Monday to Friday and 08:00 – 18:00 on Saturdays with no movements on Sundays or public holidays. It may be occasionally necessary to undertake works outside of these hours to avail of favourable weather conditions or 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;
- Traffic movements associated with the proposed development will be carefully scheduled to minimise, insofar as possible, cumulative vehicular movements during times of peak traffic movements at the Pinewoods Wind Farm (i.e. during turbine foundation concrete pours);
- Wheel washing equipment (e.g. dry ramp system) will be used, as necessary, to prevent any debris being transferred from 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 construction 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;
- A Traffic Management Plan shall be agreed as part of the Construction Environmental Management Plan (CEMP) with the Local Authority prior to the commencement of development;

- All reasonable steps shall be taken to ensure that motorway, national and regional routes are used to transport all materials to/from the site, in so far as is possible. Local roads in the vicinity of the proposed development site, in particular the L77951 between the proposed development site and the Pinewoods Wind Farm, will be regularly inspected to ensure that the structural integrity of the road is not adversely affected due to HGV movements. Should a deterioration in the road condition be identified, remedial measures, in agreement with the local authority, will be implemented;
- The L1828 will not be used for the transportation of materials to the site and all suppliers will be prohibited from utilising this road;
- The proposed site entrance will be reinstated in a manner which ensures that the requisite visibility splays and road safety are maintained;
- Adequate signage shall be provided providing access, safety and warning information;
- Traffic disruption shall be kept to minimum duration and extent;
- A designated contact point and coordinator will be put in place to manage all access arrangement and to interface with the public and the Local Authority; and
- The site shall be closed to the public during the construction phase.

13.1.6.2 Monitoring

The proposed material haul routes, from the R430 to the proposed site entrance, will be monitored during construction to identify any damage which may have been caused by construction traffic. Where any damage has been caused by traffic associated with the proposed development, it shall be repaired by the appointed contractor as soon as practicable.

13.1.7 Residual Effects

13.1.7.1 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 offset any likely effects and any residual effects are assessed to be slight, negative and short-term.

13.1.7.2 Operational Phase

There will be no residual effects during the operational phase as only occasional light vehicles are envisaged to visit the site during operation for routine maintenance.

13.1.7.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, residual decommissioning phase effects will not occur.

13.1.8 Summary

This section has assessed the likelihood of significant effects arising on transport and access as a result of the proposed development. The proposed development has generally been assessed as being likely to result in effects of a negative, slight/moderate, direct, short-term, and high probability. After mitigation, the likely residual effects have been assessed as imperceptible/slight, negative and short-term in nature.

Likely cumulative effects, with the permitted Pinewoods Wind Farm and other developments in the vicinity, are not assessed as likely to be significant.

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 proposed development either individually or in combination with other existing, permitted or proposed developments. A suite of mitigation measures have also been proposed which will serve to further mitigate and prevent any likely transport and access effects.

13.2 Aviation

13.2.1 Introduction

This section assesses the likelihood for effects on aviation to arise as a result of the construction, operation or decommissioning of the proposed development. The proposed development 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 he proposed development forms part of the overall Pinewoods Wind Farm, which comprises 11 no. permitted wind turbines, it has been considered appropriate to re-evaluate the likelihood of significant aviation effects arising as a result of the project as a whole.

The requirement for an assessment of the likely effects on aviation is set 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."*

13.2.1.1 Statement of Authority

This section has been prepared by members of the GES Environment & Planning Team. GES has substantial experience having prepared Material Asset (Telecommunications) chapters for multiple EIAR developments.

13.2.2 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 proposed development site, in combination with the permitted Pinewoods Wind Farm, was assessed as being of significance or if significant effects, additional to those assessed at **Volume III Chapter 12** were likely.

This assessment has also had regard to the Draft Air Corps Wind Farm/Tall Structures Position Paper (August 2014) (**Annex 13.2**) which sets out the Air Corps position to the appropriate siting and management of wind farms and tall structures. This assessment includes a detailed review of this position paper and a spatial comparison of the proposed development site with identified 'Danger Areas', 'Restricted Areas' and 'Low Level Flying Areas'.

13.2.2.1 Consultation

Consultation was undertaken with the IAA and Department of Defence to establish if any effects on aviation resulting from the proposed development were likely. A consultation letter was issued to both in February 2020 (see **Chapter 1**) which included a Scoping Report, a general description of the proposed development and site location drawings.

A response was received from the Department of Defence, see **Annex 1.5** (**Volume II**), who confirmed that it had no observations to make. A response was not received from the IAA.

13.2.3 Description of Existing Environment

There are no major airports in the vicinity of the proposed development. The

proposed development is located c. 90km southwest of Dublin Airport and c. 110km east of Shannon International Airport.

According to the IAA, there are no aerodromes or airstrips in the immediate vicinity of the proposed development or indeed within county Laois. The nearest licensed aerodrome is 'Kilkenny Airport' in County Kilkenny at an approximate distance of 25km.

At a local level, the Midlands Heliport is located c. 1km southwest of the proposed development site. The heliport is not licensed by the IAA but may, on occasion, be used as a training facility for microlights.

The proposed development site is not located within any 'Danger' or 'Restricted' area as identified at Annex A or B of the Air Corp Position Paper. Similarly, the subject site is not located within 3 no. nautical miles of any critical low level route identified at para. 2(2)(c) and illustrated at Annex D of the Paper. The proposed development is located within a 'Military Operating Area'; however, notably, the Department of Defence has not identified any likelihood of adverse effects.

Air traffic control radar is of two types. Primary Surveillance Radar (PSR) equipment sends out pulses of electromagnetic energy which will reflect off objects in their path. The radar's receiver antenna detects the returning 'echoes' and these are displayed on the radar screen. The time taken for the pulse to travel out to the target and back gives an indication of the range of the object from the radar

Secondary Surveillance Radar (SSR) is the second type of radar equipment used for air traffic control. Like primary radar, SSR relies on an antenna rotating continuously through 360°. However, the radar does not transmit raw pulses of energy; it transmits an interrogation signal. The signal is received at the SSR antenna, decoded, and the height and location of nearby aircraft are presented on the radar screen. This enables controllers to positively identify radar returns on their screens and (after verbal confirmation from the pilot) to confirm the aircraft's height.

13.2.4 Description of Likely Effects

13.2.4.1 Construction Phase

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

13.2.4.2 Operational Phase

Due to the generally low altitude of the proposed development (tallest structure of 20.75m), it is considered that there will be no operation phase effects on aviation.

The proposed development site is not located within any low flying areas, restricted areas, danger areas or low level routes identified within the Air Corps Wind Farm/Tall Structures Position Paper. While the proposed development (and permitted Pinewoods Wind Farm) is located within a 'Military Operating Area'; given the consultation responses received from the Department of Defence in respect of both the proposed and permitted developments, significant effects are not assessed as likely.

With regards the likelihood of effects on the Midlands Heliport, it remains unclear as to the level of activity currently associated with this facility. Indeed, in respect of the permitted Pinewoods Wind Farm, the Board's Inspector, at Section 7.5.9 of her report, stated that she was unable to obtain clarity regarding the operation of the facility. Notwithstanding the above, a scheme of aviation lighting to be installed on

the permitted wind turbines will be agreed with the IAA to avoid any likely significant aviation effects. Due to the low altitude of infrastructure associated with the proposed development, significant effects on the Midlands Heliport are assessed as unlikely.

It is concluded, therefore, that the operation of the proposed development and permitted wind turbines will not result in any likely significant effect on the Air Corps or aviation activities.

13.2.4.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

13.2.5 Cumulative Effects

Due to the absence of other tall structures in the wider vicinity of the proposed development site and permitted Pinewoods Wind Farm, it is assessed that there is no likelihood for the project as a whole to have any significant effects on aviation, in combination with other existing, permitted or proposed developments.

13.2.6 Mitigation & Monitoring Measures

13.2.6.1 Construction Phase

Due to the absence of tall structures and likely aviation effects, there are no specific mitigation measures during the construction phase.

13.2.6.2 Operational Phase

Due to the absence of tall structures and likely aviation effects, there are no specific mitigation measures during the operational phase.

As is best practice, and as required by Condition 18 of An Bord Pleanála PL11.248518 (Pinewoods Wind Farm), a scheme of aeronautical warning lighting for the permitted wind turbines will be agreed with the Planning Authority prior to the commencement of development. The 'as constructed' turbine coordinates, ground and tip height elevations will be provided to the IAA following installation of the wind turbines.

13.2.6.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, no decommissioning phase mitigation measures are required.

13.2.7 Residual Effects

No likely significant residual effects during the construction, operational or decommissioning phases are assessed as likely to occur.

13.2.8 Summary

This assessment concludes that the proposed development is unlikely to result in any significant effect on aviation. The proposed development does not comprise particularly tall structures which could pose a risk to military or civilian aviation operations. Accordingly, with the installation of appropriate aviation warning lighting at the permitted Pinewoods Wind Farm, significant effects on aviation are unlikely to occur as a result of the project as a whole, either individually or in combination with

other existing, permitted or proposed developments.

13.3 Telecommunications

13.3.1 Introduction

This section considers the likely effects of the proposed development upon a range of communications infrastructure, including telecommunication networks, broadcast radio and television and fixed infrastructure such as telecommunication masts. In theory, given the nature of the proposed development and the absence of tall structures, interference or adverse effects are unlikely.

However, given that he proposed development forms part of the overall Pinewoods Wind Farm, which comprises 11 no. permitted wind turbines, it has been considered appropriate to re-evaluate the likelihood of significant telecommunication effects arising as a result of the project as a whole.

13.3.1.1 Statement of Authority

This section has been prepared by members of the GES Environment & Planning Team. GES has substantial experience having prepared Material Asset (Telecommunications) chapters for multiple EIAR developments.

13.3.2 Methodology

The methodology employed in assessing the likelihood for significant effects on telecommunication networks consisted of desk based research and consultation with various telecommunication companies 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 companies, bodies and authorities were consulted with;-

- An Garda Síochana;
- Broadcasting Authority of Ireland;
- BT Communications Ireland;
- Commission for Communications Regulation;
- Eir Mobile;
- Imagine Group;
- Mosaic Net;
- National Ambulance Service;
- Open Eir;
- Ripplecom;
- 2rn (RTE Transmission Network Ireland);
- Tetra Ireland Communications Ltd;
- Three (3) Ireland;
- Towercom;
- Virgin Media Ireland; and
- Vodafone Ireland Ltd.

The responses received, from Eir Mobile and 2rn (RTE Transmission Network Ireland), can be viewed at **Annex 1.5**. The responses received confirm that there will be no significant effect on the telecommunications network in the area of the proposed development.

13.3.3 Description of Existing Environment

The consultations undertaken illustrates that the proposed development site is not a significant location for telecommunication links. While there are telecommunication masts located within the wider environs of the subject site[5], on the basis of the consultations undertaken there are no telecommunication links which have are likely to be affected by the proposed development.

13.3.4 Description of Likely Effects

Due to the low altitude of the proposed development and the absence of predicted likely effects identified in consultation responses, the following assessment focuses on the project as a whole, including the permitted Pinewoods Wind Farm.

13.3.4.1 Construction Phase

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

13.3.4.2 Operational Phase

Interference of wind turbines with electromagnetic transmissions

The operation of wind turbines can affect electromagnetic transmissions in two ways: by blocking or deflecting line of sight radio or microwave links or by 'scattering' transmission signals.

Microwave UHF (Ultra High Frequency) and VHF (Very High Frequency) television signals

These are generally quite narrow signals that travel in a straight line. Wind turbines (or any structure) can disturb microwave signals if they obstruct the line of sight between the transmitter and the television aerial of a nearby residence.

The blades of the permitted turbines can block some signals, or they could act as an unwanted relay transmitter, causing TVs in local residences to receive a 'ghost' signal. Wind turbines may cause a reception shadow when they stand between a TV transmitter and dwellings with TV aerials pointing through the wind turbines towards the transmitter. Television viewers in such locations will have their signal scattered, causing loss of detail, loss of colour or a buzz from their television. Generally, careful choice of turbine siting can mitigate any likely significant effects, as the separation distance required to avoid problems is generally a matter of a few hundred meters. However signal boosting measures installed post wind farm completion can also be effective.

Scattering of signal mainly affects domestic TV and radio reception, and the general public may be concerned that a wind farm will interfere with these services. Experience has shown that, when this occurs, it is of a predictable nature and can generally be alleviated by the installation or modification of a local repeater station or cable connection, or by using a more directional kind of aerial.

Analogue and Digital Television Signals

The UK OFCOM document *"Tall structures and their impact on broadcast and other wireless services"*[6] in order to provide an overview for developers and planning

[5] http://siteviewer.comreg.ie/#explore

[6] OFCOM: Tall structures and their impact on broadcast and other wireless services, August 2009, http://licensing.ofcom.org.uk/binaries/spectrum/fixed-terrestrial-links/wind-farms/tall_structures.pdf

authorities on how tall structures such as wind turbines may affect reception of wireless services.

There are two problems that can occur due to interference from tall structures: (1) signal blocking, and (2) reflection. Signal blocking can occur when a tall structure is situated between the transmitter and receiver. This causes a shadow behind the structure that can reduce signal levels. The severity of the reduced signal can vary depending on a number of factors such as the height of the structure.

Signal reflection can occur when wireless signals are reflected from the sides of structures. In the case of wind turbines, because the blades are rotating, the reflections can fluctuate and be quite complex. Reflections from turbines can also vary depending on the speed at which the blades are rotating and the angles of the blades. According to OFCOM, digital television signals are much better at coping with signal reflections, and pictures do no experience ghosting.

As analogue television has been phased out in Ireland, problems with ghosting and signal reflection due to interference from turbines will be reduced. The digital television signal is much better at coping with signal reflection. Since the digital switchover, the power of transmitters emitting the digital signal has been increased to deal with the demand. This higher output is likely to overcome any signal interference and is not likely to effect the reception received on televisions. Overall, the likelihood of adverse signal effects is much less significant with digital television than with analogue television.

Mobile Phone Signals

Despite the presence of a number of telecommunication (mobile phone) masts in the wider area, the consultation process (for both the proposed development and permitted Pinewoods Wind Farm (see **Volume III Chapter 1**) has not identified the likelihood for significant interference to occur and no service provider expressed concerns and, therefore, significant effects on mobile phone signals are not assessed as likely.

13.3.4.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

13.3.5 Cumulative Effects

Due to the absence of other tall structures in the vicinity of the proposed development and permitted Pinewoods Wind Farm, it is assessed that there is no likelihood of the overall project resulting in significant effects on telecommunications, in combination with other existing, permitted or proposed developments.

13.3.6 Mitigation & Monitoring Measures

13.3.6.1 Construction Phase

As no significant effects are assessed as likely to occur during the construction phase, no specific mitigation measures are proposed.

13.3.6.2 Operational Phase

Extensive consultation with telecommunications providers has confirmed that significant adverse effects on existing telecommunication signals are unlikely to

occur as a result of the operation of the proposed development.

While the overall project (proposed development plus permitted Pinewoods Wind Farm) is assessed as unlikely to interfere with any microwave links, all operators will be kept informed of any changes to the precise positioning of infrastructure to ensure that compliance with telecommunication constraints is maintained.

If, despite precautions, telecommunication interference in any form is identified and is attributed to the project, appropriate remedial measures will immediately be undertaken. A range of technical measures are available to mitigate any instances of interference including signal amplifiers, active deflectors and relay transmitters, repeater stations, booster units, realignment of domestic aerials, installation of higher quality aerials and the installation of suppression equipment. Remedial works will be promptly undertaken to ensure uninterrupted telecommunication, broadcasting and mobile phone service provision.

13.3.6.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, no decommissioning phase mitigation measures are required.

13.3.7 Residual Effects

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

13.3.8 Summary

It can be concluded that, on the basis of a desktop assessment and extensive consultation with stakeholders, the proposed development will not result in likely significant effects on the telecommunications network.

The implementation of mitigation measures, with regards the Pinewoods Wind Farm, will ensure that any likely significant effects on terrestrial television signals are appropriately managed and mitigated. Therefore, it is assessed that significant effects on telecommunications are unlikely to occur from the project as a whole, either individually or in combination with other existing, permitted or proposed developments.

13.4 Resources & Utility Infrastructure

13.4.1 Introduction

This section provides details of the likelihood for significant effects or interactions with existing renewable and non-renewable resources and existing utility infrastructure. Within the wider environs of the proposed development site, there is evidence of the extraction and use of resources; particularly in relation to quarrying activities and commercial forestry.

There is also the presence of utility infrastructure, with overhead electricity lines connecting to the majority of dwellings in the wider area while medium voltage electricity lines traverse the landscape and telecommunication lines are located adjacent to the majority of local roads.

13.4.1.1 Statement of Authority

This section has been prepared by members of the GES Environment & Planning Team. GES has substantial experience having prepared Material Asset (Resource & Utility Infrastructure) chapters for multiple EIAR developments.

13.4.2 Description of Existing Environment

13.4.2.1 Renewable Resources

There are no operational wind energy developments in the vicinity of the proposed development site. The nearest operational development is the Gortahile Wind Farm located c. 14km southeast of the proposed development. The permitted Pinewoods Wind Farm, which the proposed development will serve, is located immediately southeast of the proposed development site while the permitted Cullenagh Wind Farm is located c. 5km to the north. A number of existing/permitted domestic scale wind and solar energy projects are also evident in the wider landscape.

13.4.2.2 Non-Renewable Resources

There are a number of extant quarrying activities within counties Laois, Kilkenny and Carlow. There are no quarries located within the proposed development site or in its immediate vicinity with the nearest quarry, Kilsaran Concrete, located c. 1.5km to the west. Due to the presence of aggregates within the proposed development site, it is proposed that suitable material will be used in the construction of the proposed development; however, additional materials will be imported from local suppliers (see **Chapter 2**). Further details on the importation of materials are provided at **Section 13.1**.

13.4.2.3 Utilities Infrastructure

The existing electricity transmission network in south County Laois/north County Kilkenny largely comprises 110kV and 38kV electricity transmission lines while lower voltage networks distribute electricity to customers. The network in this part of the Midlands Region is, however, considered to be 'weak' and, as a result, Eirgrid sought, and were later granted, planning permission for a development (known as the 'Laois-Kilkenny Grid Reinforcement Project') comprising *inter alia* upgrades to existing transmission networks, new electrical substations and new 110kV overhead electricity lines. This development proposed the construction of a new 110kV overhead line between the Ballyragget and Coolnabacky substations which is located immediately adjacent to the proposed development site. The proposed substation will be connected to this overhead line and electricity being transmitted

along the line will pass through the proposed substation (see **Chapter 3** for further details). **Figure 13.3**, below (reproduced at **Annex 13.3**), illustrates the existing electricity transmission network in the wider region of the proposed development site and denotes the route of the Ballyragget-Coolnabacky 110kV overhead line.

In addition, there is an extensive telecommunications network in the wider environs of the proposed development site.

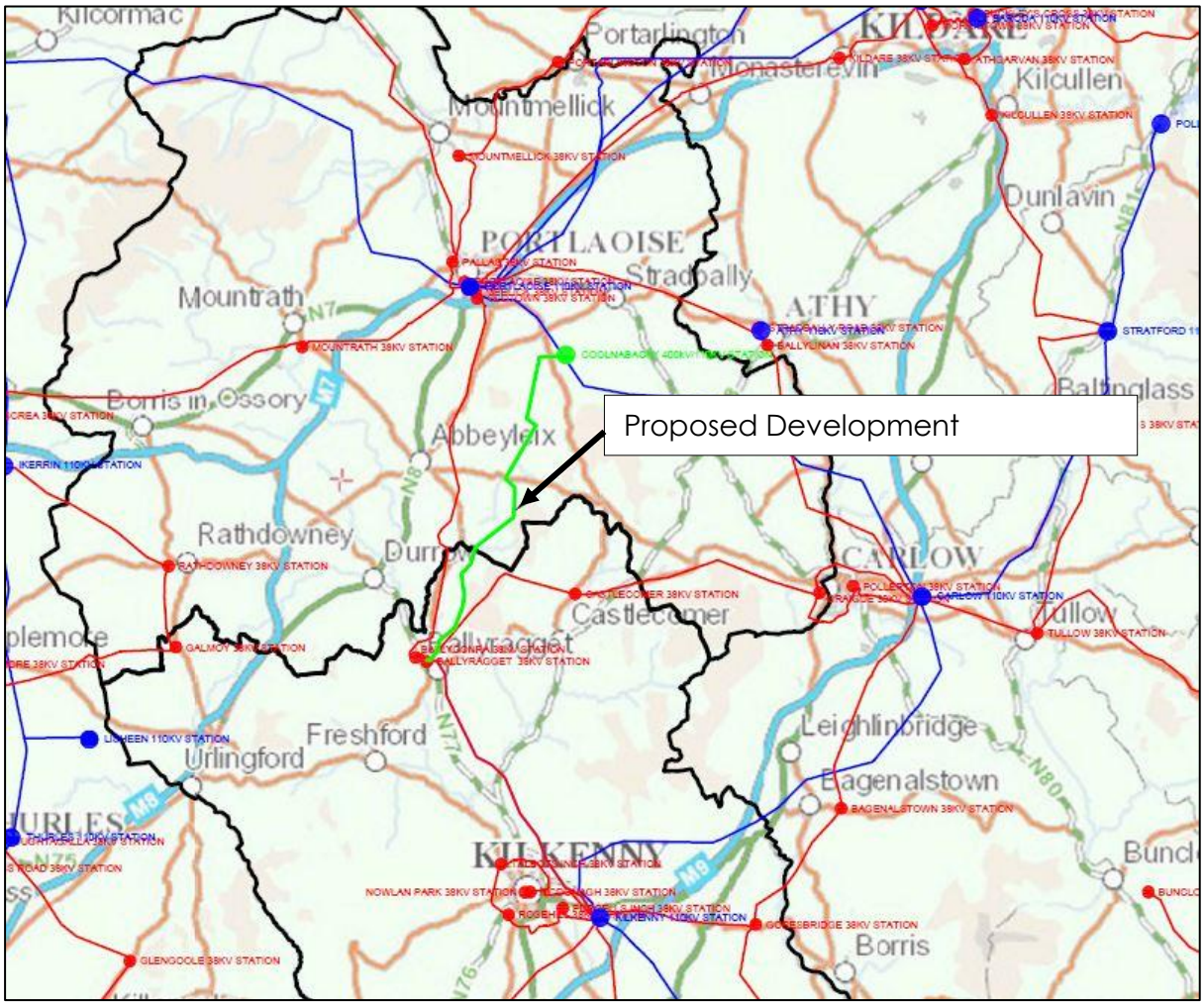

Figure 13.3: Electricity network in County Laois and surrounding counties

Note: 38kV network indicated in red; 110kV network indicated in blue

13.4.3 Description of Likely Effects

13.4.3.1 Construction Phase

The construction phase of the proposed development is not likely to have any significant effects on existing renewable resources, non-renewable resources, or utilities infrastructure. The construction phase will not inhibit the export of renewable energy generated from other sources nor will it impact upon existing utility services. While there is a possibility of interaction with utility services (e.g. accidental collision with overhead wires during the construction phase), this can be mitigated through good construction practices.

During the process of connecting the proposed development to the national grid; assuming the Laois-Kilkenny Grid Reinforcement Project is fully operational, some

minor, temporary disruption to electricity supply, at a local level, may occur. However, during this process, Eirgrid will balance the loading on the network to ensure that no significant disruption occurs and significant effects do not arise.

The construction phase will result in the extraction of non-renewable resources in the form of aggregates for the construction of access tracks, substation footing and concrete for substation construction. However, aggregates will only be sourced from quarries with have full planning permission and have been subject to EIA; and, therefore, the effects of this extraction have already been fully assessed. As a result, it is assessed that significant effects on the environment are unlikely to occur as a result of the proposed development, either individually or in combination with other existing, permitted or proposed developments.

13.4.3.2 Operational Phase

The operational phase of the proposed development will not result in any likely effect on existing utility infrastructure or renewable or non non-renewable resources. The connection of the proposed development 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 proposed development will have no likely operational phase effects on existing renewable resources. It is assessed that the proposed development will, by facilitating the export of electricity generated by the Pinewoods 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 proposed development, either individually or in combination with other existing, permitted or proposed developments.

13.4.3.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, decommissioning phase effects will not occur.

13.4.4 Cumulative Effects

The proposed development is not assessed as likely to result in any significant cumulative effects on resources or utility infrastructure, either individually or in combination with other existing, permitted or proposed developments, including the Pinewoods Wind Farm.

13.4.5 Mitigation & Monitoring Measures

13.4.5.1 Construction Phase

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

13.4.5.2 Operational Phase

No specific mitigation measures are proposed or required during the operational

phase.

13.4.5.3 Decommissioning Phase

As set out at **Chapter 3** (**Sections 3.2** and **3.8**), the proposed development will form part of the national electricity network and decommissioning of the substation is not proposed. Therefore, no decommissioning phase mitigation measures are required.

13.4.6 Residual Effects

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

13.4.7 Summary

This assessment concludes that the proposed development is unlikely to result in any significant adverse effect on renewable and non-renewable resources or on utilities infrastructure. The operation of the proposed development 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 proposed development site. This assessment similarly concludes that the proposed development is unlikely to result in any significant adverse cumulative effects in combination with existing, permitted or proposed developments.