Galetech Energy Services
Cavan: Clondargan, Stradone, Co. Cavan, Ireland, H12 NV06
Cork: Unit 2 Airport East Business Park, Farmers Cross,
Kinsale Road, Cork, Ireland

t: +353 49 555 5050
e: info@galetechenergy.com
w: www.galetechenergy.com

[insert name]
[insert address]
[insert address]
[insert address]
[insert address]

20 February 2020

Re: Pre-Application Scoping Request: Proposed 110kV substation in County Laois

To whom it may concern,

Pinewood Wind Ltd. is proposing to develop a 110kV electricity substation and all associated ancillary infrastructure on lands in the townland of Knockardagur, approximately 4km north east of Ballinakill and approximately 8km south east of Abbeyleix, Co. Laois. The proposed development will form part of the Pinewoods Wind Farm which was granted planning permission by An Bord Pleanála in 2019.

The proposed development will also include electrical infrastructure to facilitate connection to the Laois-Kilkenny Grid Reinforcement Project. A Site Location Map is provided at **Annex 1**.

Galetech Energy Services (GES) is currently carrying out a detailed Environmental Impact Assessment (EIA) scoping assessment on behalf of Pinewood Wind Limited, in order to assess and confirm the suitability of the site for this development. An Outline Scoping Report is enclosed in **Annex 2**.

As part of this scoping assessment, and in accordance with the Environmental Impact Assessment (EIA) Directive, GES endeavours to engage all stakeholders at an early stage of project design in order to allow for a more focused consideration of any likely significant environmental impacts. Should you have any comments on the proposed development in respect of your specific area of competence, we would be grateful if you could send them to us by 20 March 2020. Feedback can be sent by post to Simon Carleton at the above address (Cavan Office) or by email to: simon@galetechenergy.com.

We wish to highlight that the current project design may be subject to further change resulting from ongoing consultation and assessment throughout the EIA process.

Should you have any queries relating to the proposed development, please do not hesitate to contact this office.

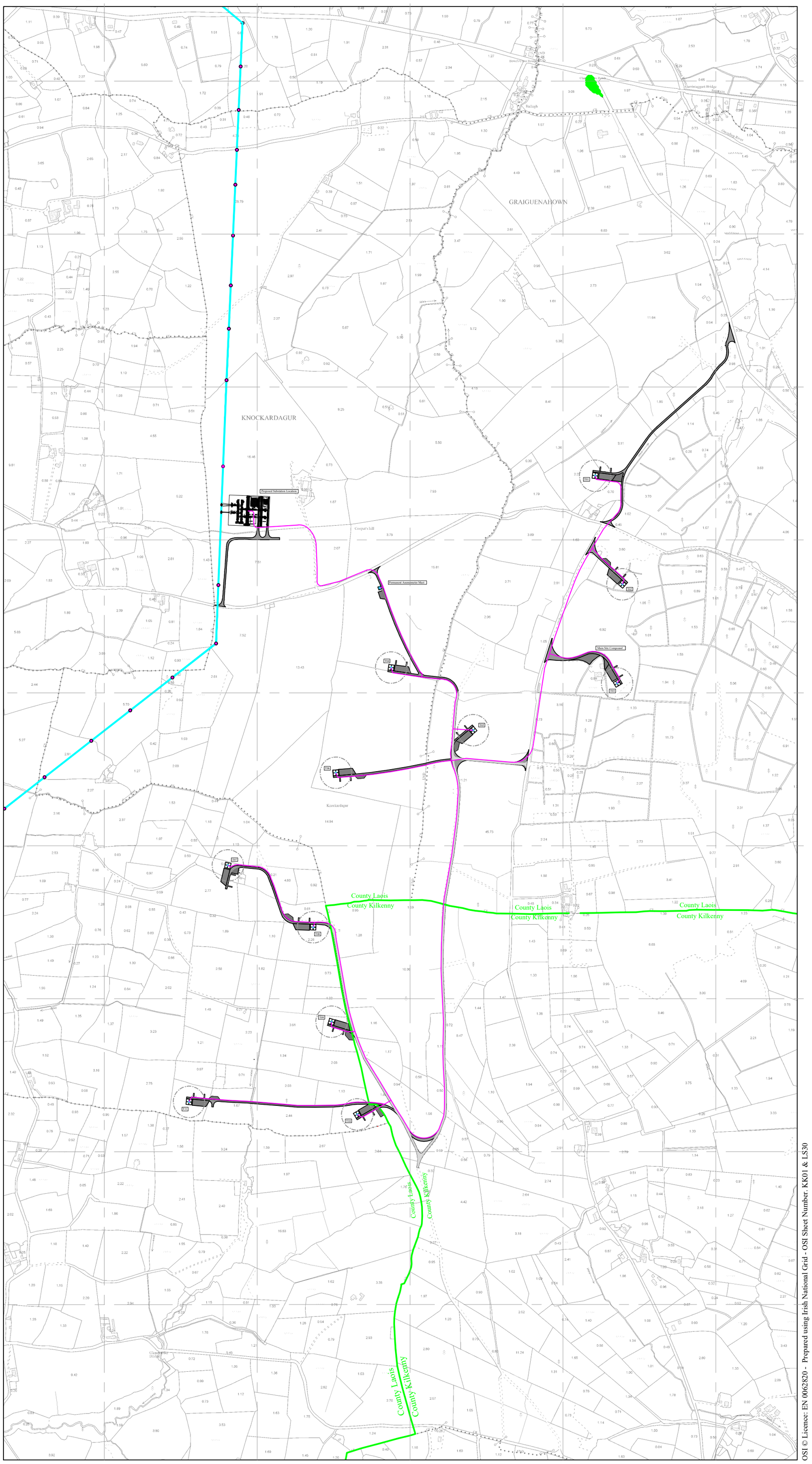
Galetech Energy Services

Galetech Energy Services

Annex 1 –
Site Location Map

250000 250500 251000 251500 252000

183750 183250 182750 182250 181750 181250 180750 180250 179750



Legend:

- Indicative Cable Route
- Wind Farm Tracks
- Existing Tracks (requiring upgrade)
- Proposed Wind Turbines
- Co-ordinates Gridlines
- County Boundary

Galetech Energy Services
Clondargan, Stradone
Co. Cavan, H12 NV06

info@galetechenergy.com
www.galetechenergy.com

Client:

Pinewoods Wind Ltd

Job Title:

Pinewoods Wind Farm

Drawing Title:

Site Location

Date:	Rev:	Description:	Drawn By:

Drawing No.:	Revision No.:
PIN001SUBSTN-PP-LOC-0.01	0
Scale:	**Date:**
(A2) 1:10,000	13/02/2020
Drawn By:	**Checked By:**	**Confirmed By:**
C.M.P	S.D	D.S

Annex 2 –
Outline Scoping Report

Pinewoods Wind Farm 110kV Substation

Outline Scoping Report

Pinewood Wind Ltd

Galetech Energy Services

Clondargan, Stradone, Co. Cavan Ireland

Telephone +353 49 555 5050

www.galetechenergy.com

DOCUMENT CONTROL

	Function	Name
Content	Senior Planner	Simon Carleton
Approval	Planning Team Manager	Gavin Daly

RECORD OF CHANGES

Revision Number	Issue Date	Summary of change	Approved
0	17/02/2020	Content	Simon Carleton
1			
2			
3			

DISTRIBUTION LIST

#	Function Title	Company	Name (optional)
1	For Scoping	Various	Various
2			
3			
Notes:			

Contents

1.0 Introduction 1
1.1 The Applicant 1
1.2 Purpose of this Report 2
2.0 Environmental Impact Assessment (EIA) 2
2.1 EIA Screening 2
2.1 Environmental Impact Assessment Report (EIAR) 2
2.2 Content of the EIAR 3
3.0 Proposed Development 4
3.1 Site Entrance & Access Track 4
3.2 Construction Phase Haul Route 6
4.0 Scope of the EIAR 7
4.1 Project Alternatives 7
4.2 Population & Human Health 8
4.3 Biodiversity 9
4.4 Land & Soil 10
4.5 Water 10
4.6 Air & Climate 10
4.7 Landscape 11
4.8 Cultural Heritage 12
4.9 Noise & Vibration 12
4.10 Shadow Flicker 13
4.11 Material Assets 13
5.0 Consultation 13
4.12 Statutory Consultation 13
4.13 Public Consultation 13

1.0 Introduction

Pinewood Wind Limited (PWL) intends to apply for planning permission to construct and operate a 110kV electricity substation to facilitate the connection of the Pinewoods Wind Farm to the national electricity grid. The proposed development site is located in the south of Co. Laois, approximately 4km north east of the village of Ballinakill and 8km south east of Abbeyleix in Co. Laois. The location of the proposed development and the permitted Pinewood Wind Farm[1] is provided at **Figure 1** below.

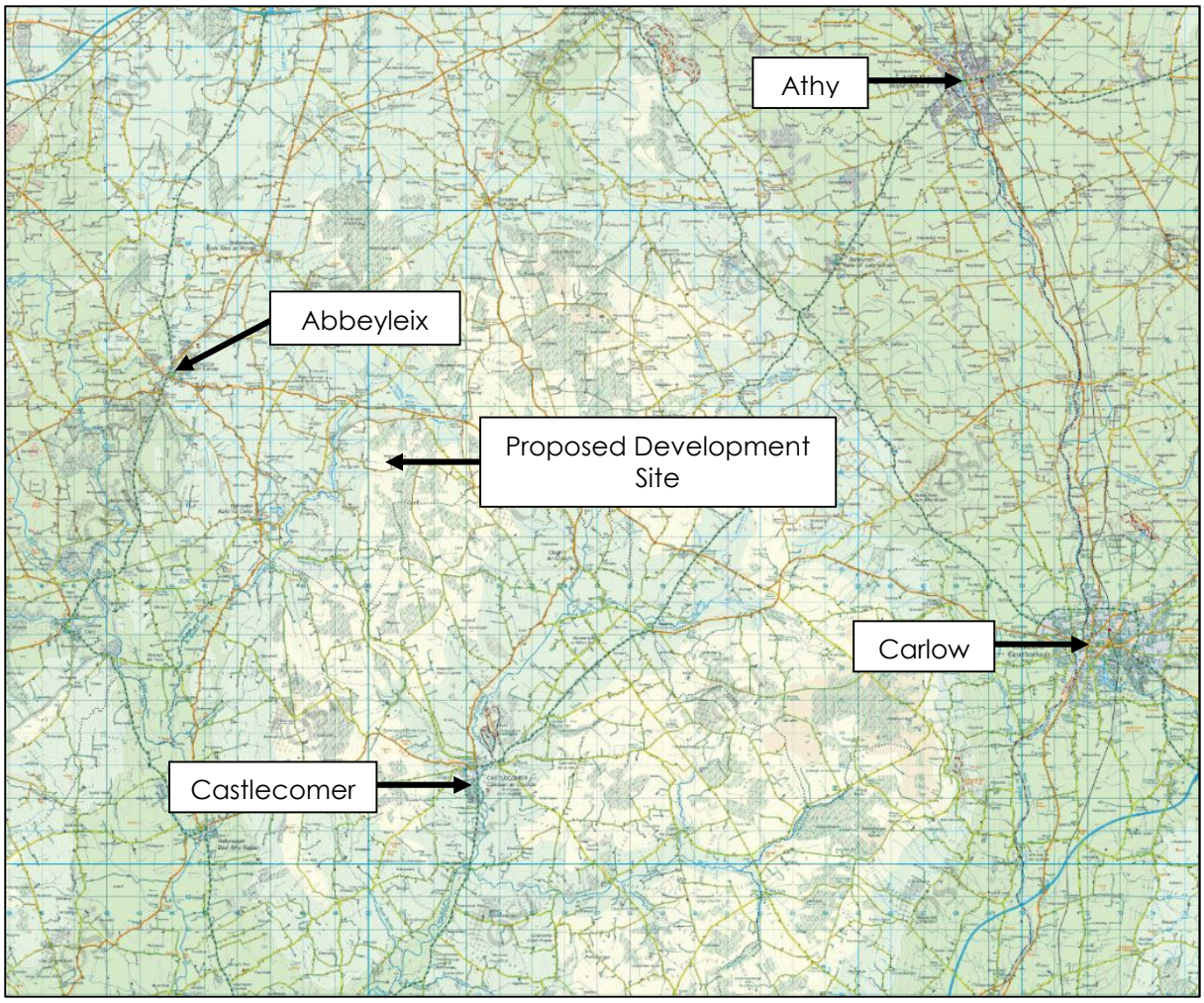


Figure 1: Site Location

1.1 The Applicant

PWL is a renewable energy development company with substantial experience in the renewable industry; the company principals owning and operating a number of permitted and operational wind farms both within Ireland and internationally.

1.1.1 The Agent

Galetech Energy Services (GES) has been commissioned by PWL to coordinate the preparation of an Environmental Impact Assessment Report (EIAR) including the scoping process. GES is an Irish multi-disciplinary renewable energy consultancy that specialises in the delivery of advisory, project management and technical

[1] An Bord Pleanála References PL11.248518 and PL10.248392

engineering services from project feasibility through to delivery and operation.

1.2 Purpose of this Report

This Outline Scoping Report has been prepared to provide a high level overview of the proposed development, to allow consultees inform themselves of the scope of the project and provide comments on information which should be included in the EIAR. The Report also sets out to provide an overview of the EIAR scoping process undertaken by the applicant to date.

A supplementary Scoping Report, detailing the entire scoping process including environmental scoping by appointed consultants, consultation with local communities and the general public and consultation with statutory consultees, will accompany a planning application for the project in an annex to the EIAR.

2.0 Environmental Impact Assessment (EIA)

2.1 EIA Screening

In accordance with the provisions of the Planning & Development Act 2000 (as amended), EIA is mandatory when certain classes of projects exceed specific sizes and thresholds. Planning applications for such projects must be accompanied by an Environmental Impact Assessment Report (EIAR). Schedule 5 of the Planning and Development Regulations 2001 (as amended) provides the classes of development proposals which shall be subject to EIA. The proposed development is not, of itself, a category of development listed as requiring EIA. Therefore, there is no statutory requirement for the proposed development to be accompanied by an EIAR/EIS.

Notwithstanding the above, a judgement of the High Court in respect of *O'Grianna & Ors. v. An Bord Pleanála ([2014] IEHC 632)* determined that a wind farm and its connection to the national grid are considered a single indivisible project for the purpose of the EIA Directive. Accordingly, an EIAR/EIS is required to be submitted with this planning application.

2.1 Environmental Impact Assessment Report (EIAR)

The EIAR will be prepared in accordance with the provisions contained within Schedule 6 of the Planning and Development Regulations 2001, as amended, which sets out the information to be contained in an EIAR. In addition, the EIAR will take account of the contents of Directive 2014/52/EU ('the 2014 EIA Directive'), which was adopted in the EU on 16th April 2014, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. The 2014 EIA Directive was transposed into Irish planning law from the 1 September 2018 via the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

2.1.1 Purpose of the EIAR

The purpose of the EIAR is to protect the environment and informs decision making. The EIAR provides for a system of sharing information about the environment, within which a proposed development sits, and enables effects to be foreseen and prevented during the design and consent stages. The purpose of the EIAR is to:-

- Anticipate, avoid and reduce significant effects;
- Assess and mitigate effects;
- Maintain objectivity;
- Ensure clarity and quality;
- Provide relevant information to decision makers; and
- Facilitate better consultation.

It is a statutory requirement that the EIAR pays particular regard to the:-

- Key alternatives;
- Proposed project;
- Receiving environment;
- Likely significant effects;
- Mitigation and monitoring measures; and
- Residual effects.

A non-technical summary must also be provided.

2.1.2 EIAR Methodology

The EPA has published a set of revised '*Guidelines on the Information to be contained within an EIAR*' and these guidelines have been updated to reflect the 2014 EIA Directive and the provisions contained therein. The guidelines have been published in draft form (August 2017) and provide an update on the previous guidelines which were initially published in 2002. The guidelines are a statutory document and provide guidance on the role of the EIAR in the EIA process, the key activities involved in the EIAR process, and guidance on the presentation of the information contained in the EIAR. The EIAR team will have regard to these guidelines in the preparation of the EIAR documents; additionally the team will also have regard to best practice guidance for each individual environmental topic covered by the EIAR.

2.2 Content of the EIAR

The EPA Guidelines include a 7 no. stage approach (sequence) in the production of the EIAR. This includes Screening, Scoping, Consideration of Alternatives, Project Description, Baseline Description, Assessment of likely significant Impacts and Mitigation/Monitoring. The guidelines outline that adherence to this sequence ensures an objective and systematic approach is achieved. Using this sequence, the environment is described using a number of specific headings and this provides for a separate section for each topic. The description of the existing environment, the likely significant impacts (Positive, Negative, & Cumulative), mitigation and monitoring measures, and residual impacts are then grouped together in each section, covering each topic. This format allows for ease of investigation into each topic and for specialist studies/input to be integrated seamlessly. The structure of this EIAR is set out below.

- Introduction;
- Description of the Proposed Development;
- Project Alternatives;
- Population and Human Health;
- Biodiversity;
- Land & Soil;
- Water;
- Air & Climate;
- Landscape;
- Cultural Heritage;
- Noise & Vibration;
- Radiation;
- Shadow Flicker;
- Material Assets; and
- Interaction of the Foregoing.

Each chapter of the EIAR will be structured using the following format:

- Introduction;
- Description of the Existing Environment;
- Description of Likely Significant Impacts;
- Mitigation & Monitoring Measures;
- Residual Impacts; and
- Conclusion.

3.0 Proposed Development

The proposed development will consist of a 110kV 'loop in-loop out' Air Insulated Substation (AIS). The electrical substation will comprise 1 no. switchroom building, 1 no. control building located within a compound area extending to approximately 13,000m^2. The proposed switchroom building will have a footprint of c. 95m^2 with an overall height of 5m; while the control building will extend to c. 450m^2 and an overall height of 5m. Electrical equipment and apparatus will be located, on concrete plinths, within the substation compound.

The substation will contain connection points and associated equipment such as incoming and outgoing circuit breakers, earth fault, protection devices, the grid transformer, metering equipment, computer and server. The switchroom and control buildings will be constructed of blockwork and finished in sand and cement render, blue/black slate roof covering and galvanised steel doors. For safety and security reasons and in accordance with Eirgrid specifications, the substation compound will be enclosed by a steel palisade fence with an overall height of up to 2.95m.

The substation will be connected to the adjacent, permitted, Laois-Kilkenny Grid Reinforcement Project via 110kV electrical cables placed overhead on 2 no. single circuit strain towers of approximately 26.5m in height.

The project will also include a range of off-site or secondary developments including construction material haul routes and the importation of materials. It should also be noted that connecting infrastructure to the Pinewoods Wind Farm, including electrical and communications cabling, has been permitted separately by An Bord Pleanála.

The proposed substation is centred at the coordinates provided at **Table 1** below.

ID	Easting	Northing	Altitude (mAOD)
Substation	650405	682385	237

Table 1: Proposed Substation Location

Coordinates provided in Irish Transverse Mercator (ITM)

3.1 Site Entrance & Access Track

The proposed substation will be accessed, from the south, via a new site entrance and access track from the L77951. The site entrance has been designed to accommodate standard heavy goods vehicles (HGVs) and construction traffic and will be retained throughout the operational phase of the proposed development. The proposed site entrance has also been carefully to ensure that visibility splays[2] can be provided to ensure road safety.

A total of approximately 500m of site access track will be required for construction

[2] Visibility Splays designed in accordance with *Laois County Council Roads & Parking Standards* (2007).

purposes and for site access during the operational phase. The access track shall be similar to normal agricultural tracks but with a slightly wider typical running width of approximately 5m. Access tracks will be unsealed and constructed of crushed stone material to allow for permeability.

The proposed access track will be located adjacent to, but will not cross, a small lower order watercourse, identified as the Knockardagur Stream, which rises immediately south of the proposed substation. The crossing will be designed to avoid any effects on the hydraulic capacity of the stream and any in-stream works will be minimised.

An indicative site layout drawing is provided at **Figure 2**, below, and replicated at **Annex 1**.

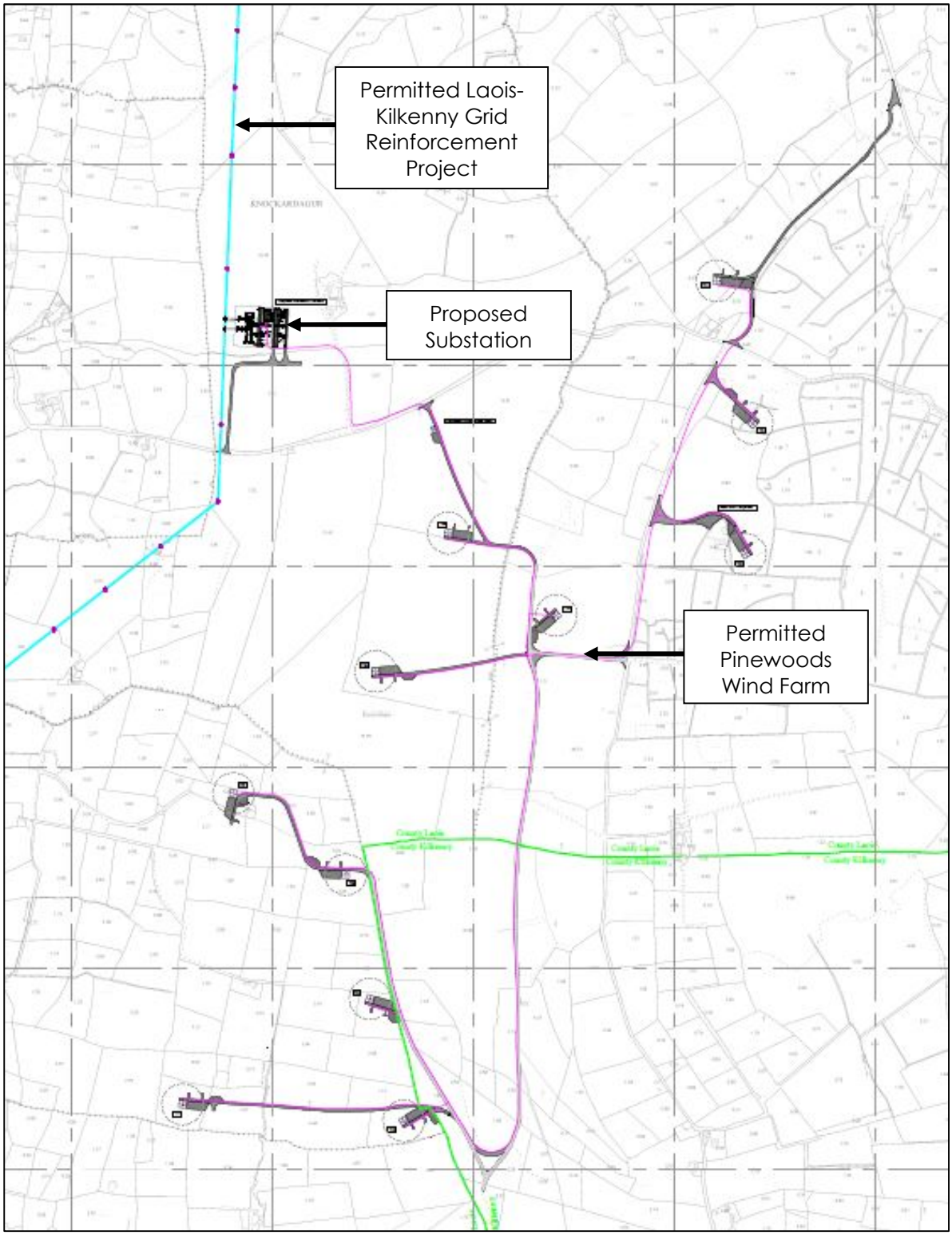


Figure 2: Proposed Site Layout

3.2 Construction Phase Haul Route

The proposed development site is served by the public road network and specific upgrade works to the road network are not envisaged. Construction materials, including aggregates and concrete, and electrical equipment will be transported to site by standard HGVs. Aggregates and concrete will be sourced from local suppliers, where possible, and will follow the regional road network insofar as possible.

It is envisaged that materials will be transported to the site via the R430, L7800, access tracks associated with the permitted Pinewoods Wind Farm, L78001 and L77951 before accessing the proposed substation via the abovementioned access track.

4.0 Scope of the EIAR

The EIAR will provide an assessment of effects during the construction, operation and decommissioning of the proposed development for each the environmental topics described in this section.

This section provides a brief overview of the level of scoping which has taken place to date, as well as the potential effects which have been identified and the proposed methodology for further assessment going forward into the EIAR document.

4.1 Project Alternatives

An extensive evaluation of alternatives to the proposed method of connecting to the national grid was completed as part of the scoping assessment and Environmental Impact Statement (EIS)[3] preparation completed regarding the Pinewoods Wind Farm. The options assessed included the following:-

4.1.1 Option A - Underground line (UGL) along the public road to the existing substation at Ballyragget

This grid connection option would involve the digging of a trench and the laying of grid cables along public road, backfilling and reinstatement which will be carried out in accordance with the ESBI guidance '*HV Cables – General Construction Methodology*' (PE424-F7001-R00-001-001). One of the advantages of laying cables under a roadway is that there is typically no permanent impact on the environment additional to that caused by the presence of the roadway. When an underground cable is laid under an existing roadway there is a short-term temporary impact during the construction phase only. The underground cables would be of a solid polymeric construction with either aluminium or copper conductors. Cable installation trenching will be by a mechanical digger, with full reinstatement of the top layer to its original wearing course. Cables are laid in a granular bed and backfilled with surround material. This material offers protection to the cables and the contrasting material helps identify location should the need arise later. The proposed depth of the cable trench is approximately 1 metre and the width of the cable trench is 50 centimetres. The proposed cable duct is a very standard design and capable of accommodating a 38kV or 110kV cable. The duct would be constructed in agreement with the local authorities, including a bond for reinstatement works. It is estimated that the total construction phase will be 9 – 12 months in duration.

4.1.2 Option B - Connection to the permitted 110kV Overhead Line (OHL) Laois-Kilkenny Grid Reinforcement Project

One of the distinct advantages of the subject site from an environmental impact perspective is that the permitted 110kV Laois-Kilkenny Grid Reinforcement Project (An Bord Pleanála Reference PL11.VA0015) passes directly through the site1. The permitted OHL, which has been subject to full EIA and AA, now has capital approval and is moving to detailed design stage with ESB Networks. Following detailed

[3] The Pinewoods Wind Farm EIS was prepared prior to the coming into force of EIA Directive 2014/52/EU and hence the term 'EIS' is used in this instance.

discussions with Eirgrid it has been agreed that the proposed development can loop directly into this 110kV line via a substation/switchroom at the subject site. This will include the erection of two single circuit strain towers of up to 26.5 metres in height to connect into this 110kV transmission line. From there, the proposed development will have a fully consented transmission path to either the proposed 400/110kV substation at Coolnabacky or the proposed 110kV upgraded substation at Ballyragget which are both equidistant from the subject site.

The evaluation concluded that Option B represented the optimum method of connecting to the national grid given the significant advantages afforded by the presence of adjacent grid infrastructure. In addition, the EIS identified that a further option, comprising the installation of an overhead line (OHL), also provided a viable option and could be explored further if required.

A further, and more recent, evaluation of alternatives has also been completed by the applicant. In addition to the environmental benefits of connecting to the adjacent permitted Laois-Kilkenny Grid Reinforcement Project; following consultations with Eirgrid, the applicant has been advised that connection via Option B, above, remains the preferred means of connecting the permitted Pinewoods Wind Farm to the national grid.

4.2 Population & Human Health

As part the scoping process, a desk based review of existing conditions in the area has been undertaken. It is anticipated that, during the construction phase, effects on community, recreation and tourism receptors will primarily be associated with traffic, noise, air quality and water impacts arising from the proposed development. Once the proposed development becomes operational, likely effects will primarily be associated with visual impact.

In terms of human health, it is noted that impacts here will be closely linked with other environmental aspects associated with the proposed development which are relevant to human health, namely soils, water, air quality, noise, shadow flicker, and radiation. Other potential effects include employment effects and impacts on local economy.

The likely effects identified above, along with potential cumulative effects with other developments and infrastructure projects, including the Pinewoods Wind Farm, will be considered within the 'Population and Human Health' chapter.

The proposed development includes the construction and operation of grid connection infrastructure including electricity lines and substation development. The provision of electricity lines, both overhead and underground, of 110kV capacity, is common practice on similar projects across the Ireland. The type of radiation emitted from this type of electrical infrastructure is commonly known as electromagnetic fields (EMF) which has the potential to impact on human health where high levels are experienced.

Potential operational effects are limited to EMF radiation impacts on properties (residential or other uses) within close proximity to the electricity lines or substation compound. The assessment of EMF in the EIAR will focus on the predicted level of the EMF and an evaluation of the predicted level against health protection standards.

The EIAR chapter will also take into consideration the results of other assessments in the EIAR which have relevance to health. Recognised health evaluation criteria will be used and accurate baseline data provided. The findings of these assessments will be cross referenced in order to avoid duplication of findings.

Employment effects and direct expenditure will be quantified using data provided by PWL and, where necessary using standard industry data. Opportunities for local business and the local labour market to be involved in supply chain activities will be identified and, where possible, quantified.

4.3 Biodiversity

Early stage Biodiversity scoping has been undertaken on the site in order to inform this pre-planning scoping report. Desk based research has included a review of available data sources, including the EIS prepared in respect of the permitted Pinewoods Wind Farm.

The proposed development is not located within any designated nature conservation areas; however it is noted that the proposal is located immediately adjacent to the Knockardagur Stream which discharges to the River Nore and River Barrow Special Area of Conservation (SAC) approximately 2km downstream. The River Nore SPA is also located within 15km of the proposed development.

This early stage scoping work has identified a number of potential significant effects, including:

- Direct loss of habitat from the construction of the proposed development;
- Direct/Indirect damage to adjacent habitats during construction;
- Impacts during construction on the hydrology of water dependant habitats;
- Impacts on water quality both at a local level and regional level due to pollution run-off during both the construction and operation phases;
- Impacts on aquatic species during construction or due to pollution events;
- Disturbance to local wildlife, including loss of habitat, disturbance and displacement;
- Damage to or habitat loss of important wildlife corridors during construction;
- Displacement of bird species from limited breeding areas;
- Impacts on the conservation status or constituent parts of designated sites.

The planning application will also be accompanied by a separate Natura Impact Statement (NIS) which will provide an assessment of the potential for significant adverse effects on the Natura 2000 network, in accordance with the Habitats Directive.

The EIAR chapter will address the nationally designated sites, terrestrial and freshwater (aquatic) habits and species, including those of conservation concern on and in close proximity to the proposed development site. The ecological evaluation of the site and its biodiversity will be assessed according to NRA (2009)[4]. Once a value has been assigned to identified ecological receptors, the potential impact and proposed effect of the proposed development will be fully assessed. This will be done using the criteria outlined in various/up to date guidelines including NRA (2009) and CIEEM (2016)[5] (and as may be revised). The impacts will be assessed under a number of parameters such as magnitude, extent, timing, frequency, duration, and reversibility.

The EIAR chapter will also focus on the likelihood for significant effects with other developments and infrastructure projects, including the permitted Pinewoods Wind Farm.

[4] NRA (2009) – Environmental Assessment and Construction Guidelines. National Roads Authority.
[5] CIEEM, Guidelines for Ecological Impact Assessment in the UK and Ireland, January 2016.

4.4 Land & Soil

As part of the initial scoping process, a desk based review of existing conditions in the area has been undertaken. This has been completed using a series of available desktop resources including mapping and guidance. It is anticipated that, during the construction phase, effects on Land and Soil will primarily be associated with impacts on soil and subsoil associated with excavation activities, contamination of soil associated with any leakages or spillages, erosion of exposed subsoils and potential for peat instability and failure. It is anticipated that any effects associated with decommissioning may be similar but of a reduced magnitude.

In terms of operational phase effects, leaks and spillages from both vehicular traffic and from oils and hydrocarbons have been identified as potential effects. Cumulative effects with nearby developments and infrastructure projects, including the Pinewoods Wind Farm, will also be considered during the EIAR process.

4.5 Water

As part of the initial scoping process, a desk based review of existing conditions in the area has been undertaken. This has been completed using a series of available desktop resources including mapping and guidance. It is anticipated that, during the construction phase, effects on the water environment could include impacts on:-

- ground water levels during excavation;
- surface water quality;
- accidental spillage which could result in the release of hydrocarbons during construction and storage;
- groundwater and surface water contamination;
- release of cement based products and the associated impact of alkaline in the water supply;
- morphological changes to surface watercourses and drainage patterns; and
- potential impact on hydrologically connected sites.

The potential impacts associated with decommissioning of the proposed development will be similar to those associated with construction but of reduced magnitude

In terms of operational phase effects, it is likely that progressive replacement of the vegetated surface with impermeable surfaces could potentially result in an increase in the proportion of surface water runoff reaching the surface water drainage network. During rainfall events, additional runoff coupled with increased velocity of flow could increase hydraulic loading, resulting in erosion of watercourses and impact on aquatic ecosystems.

It is noted that some of the potential significant likely effects associated with the Water environment may be assessed in other chapters of the EIAR e.g. 'Land and Soil'. The EIAR will consider such interactions to ensure that effects are cross-referenced between topics but that duplication of assessment does not take place.

Cumulative effects with nearby developments and infrastructure projects, including the Pinewoods Wind Farm, will also be considered during the EIAR process.

4.6 Air & Climate

A desktop review of available baseline air quality data within the study area has been undertaken using the following data sources:

- Environmental Protection Agency – National Ambient Air Quality Monitoring Data Archive;
- Environmental Protection Agency – Air Quality in Ireland 2016 Report and previous reports (1997 – 2015); and
- Environmental Protection Agency – Integrated Pollution Control Licences.

Potential significant effects during the construction and operational phases of the proposed development have been established. Potential construction phase effects include:-

- Potential for construction dust emissions and nuisance dust;
- Emissions from Heavy Goods Vehicles (HGVs) and on site construction plant and equipment which may give rise to emissions; and
- GHG emissions from construction traffic and embodied energy from construction materials will increase Ireland's GHG emissions potentially causing climate change.

Operational phase effects on air quality and climate are likely to be limited to impacts created by emissions from maintenance related vehicular traffic. It is also noted that the transmission of electricity generated at the Pinewoods Wind Farm by the proposed development will lead to a net saving in terms of emissions.

Overall the impact assessment process will involve assigning the receptor sensitivity, identifying and characterising the magnitude of impact, and assessing the significance of any residual effects (after mitigation). A series of mitigation measures to minimise any foreseen impacts for the construction, operational and decommissioning phases of the project will be proposed, as required, in the EIAR.

4.7 Landscape

Landscape and visual impact assessment has two separate but closely linked aspects. The first is landscape character impact or landscape impact i.e. the effects of the proposed development on the fabric or structure of the landscape as perceived by people. The second is visual impact i.e. the extent to which the wind turbines can be seen in the context of the surrounding landscape within which they sit.

While the proposed development is an ancillary element of a wind energy development, the infrastructure now proposed is of a significantly lesser scale than the permitted wind turbines. Notwithstanding this, potential effects have been identified and include:-

- Direct effects on landscape features, views, routes, and areas described in the Laois County Development Plan;
- Potential changes to landscape character;
- Effects on designated landscape, views/prospects, conservation sites, and other special areas of interest; and
- Effects during construction and decommissioning.

In order to assess the magnitude of impact associated with the proposed development, a Landscape and Visual Impact Assessment (LVIA) will be carried out, in accordance with:-

- Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Statements (2002) and the accompanying Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (2003);

- Landscape Institute and the Institute of Environmental Management and Assessment publication entitled Guidelines for Landscape and Visual Impact Assessment (2013);
- Scottish Natural Heritage (SHN) Environmental Assessment Handbook – Guidance on the Environmental Impact Assessment Process Appendix 1: Landscape and Visual Impact Assessment (2011);
- Department of Environment, Heritage and Local Government (DoEHLG) 'Wind Energy Development Guidelines' (2006); and
- Irish Wind Energy Association (IWEA) Best Practice Guidelines for the Irish Wind Energy Industry (2012)

The significance of landscape and visual impact will be assessed in accordance with a significance matrix which is based on the sensitivity of the landscape or visual resource versus the magnitude of impact.

Zone of Theoretical Visibility Mapping (ZTVs) will be prepared and will illustrate the proposed study area and highlight the areas where the proposed development will theoretically be seen as well as highlighting the cumulative visual impact arising from any surrounding developments including the Pinewoods Wind Farm. Photo-realistic images will also be prepared from selected viewshed locations which are deemed to present a critical view of the proposed development.

4.8 Cultural Heritage

The proposed development has the potential to have both construction and operational significant likely effects on Cultural Heritage. Potential construction effects include impacts on recorded monuments (1 no. within 500m of the proposed development), impacts on previously unrecorded archaeological remains which may exist within the area of land take, and visual or noise impacts during construction.

Potential operational phase effects include visual impact on recorded monuments located in proximity to the proposed development. It is also noted that potential operational cumulative effects on archaeological, architectural or cultural heritage remains could occur between the proposed development and proposed, existing or permitted developments, including the Pinewoods Wind Farm.

4.9 Noise & Vibration

The proposed development includes the construction and operation of a 110kV electricity substation and associated access. The construction of the development has the potential to result in noise and vibration effects. The operation of the substation also has the potential to cause noise and, as such, this early stage scoping has been produced to determine the potential effects and the methodology for further assessment of these effects within/during the EIAR process.

The proposed development is likely to have both construction and operational noise/vibration effects on nearby receptors. Potential construction effects include general construction noise from plant/machinery operating on the site and vibration from construction activities. Potential operational phase effects include noise impacts on noise sensitive locations (e.g. dwellings) emanating from the operational substation.

The EIAR will be accompanied by a Noise Impact Assessment which identifies representative baseline noise levels, includes predictive modelling of noise exposure, clearly outlines the predicted changes to the noise environment at Noise Sensitive Receptors (NSRs), evaluates the exposure level against the most recent noise

guidelines, and identifies any mitigation measures which are applicable/necessary.

Cumulative effects with nearby developments and infrastructure projects, including the Pinewoods Wind Farm, will also be considered during the EIAR process.

4.10 Shadow Flicker

Due to the nature of the proposed development, it does not have the potential to generate shadow flicker. However, given that the proposed development is ancillary to the Pinewoods Wind Farm, the shadow flicker assessment of this permitted development will be reviewed to ensure that there have been no alterations to the baseline environment which could conflict with the conclusions reached in the EIS.

4.11 Material Assets

4.11.1 Transport & Access

The assessment of traffic and roads will include an examination of the existing road network surrounding the site, as well as reviewing the likely haul route for the delivery of the wind turbine components and construction materials to the proposed development site.

The proposal has the potential to have both construction and operational effects in terms of transport and access. Potential construction effects include increased traffic flows, changes to the traffic composition, traffic disruption, reduction in safety and degradation of road surfaces. Operational stage impacts on traffic are likely to be much less than that associated with the construction stage, however the level of impact will be examined in line with the operational life span of the proposed development.

The 'Transport & Access' section will undertake a range of assessments including the capacity of the haul route to accommodate construction traffic, an appraisal of any damage to road structures or surfaces, and a traffic impact assessment to determine the effects of construction and operational phase traffic movements. Given that he proposed development will be constructed concurrently with the permitted Pinewoods Wind Farm, the cumulative effects of both developments will be assessed.

4.11.2 Telecommunications

The Telecommunications section will undertake an assessment to determine if the proposed development will result in any impacts on existing telecommunication links. This assessment will be based on a desktop appraisal of existing telecommunication masts in the wider area and consultation with service providers in the Laois and Kilkenny region.

5.0 Consultation

4.12 Statutory Consultation

A variety of statutory and non-statutory organisations have been and will continue to be consulted during the scoping process to gather their views on the likelihood of significant environmental impacts arising from the construction and operation of the proposed development.

4.13 Public Consultation

An extensive public consultation process was carried out from an early stage of the development of the Pinewoods Wind Farm. All issues raised in this public consultation

process will be addressed, as relevant, within the EIAR