

# Laois-Kilkenny Reinforcement Project

## EIA Screening Considerations Report

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## Table of Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>2</b>
1.1	NEED FOR THE PROJECT .....	2
<b>2</b>	<b>PURPOSE OF REPORT .....</b>	<b>3</b>
2.1	STATUTORY REQUIREMENT FOR ENVIRONMENTAL IMPACT ASSESSMENT .....	3
2.2	ASSESSMENT OF SUB-THRESHOLD DEVELOPMENT .....	5
<b>3</b>	<b>CHARACTERISTICS OF THE PROPOSED DEVELOPMENT .....</b>	<b>5</b>
3.1	CONSTRUCTION OF A NEW 400/110kV SUBSTATION .....	6
3.2	NEW 400kV OVERHEAD LINE CONNECTION TO EXISTING DUNSTOWN – MONEYPPOINT 400kV LINE .....	7
3.3	NEW CONNECTION TO COOLNABACKY FROM THE EXISTING ATHY-PORTLAOISE 110kV LINE .....	8
3.4	NEW 110kV/38kV/MV SUBSTATION AT BALLYRAGGET .....	8
3.5	NEW 110kV OVERHEAD LINE BETWEEN BALLYRAGGET AND COOLNABACKY SUBSTATIONS .....	8
3.6	BALLYRAGGET – KILKENNY 110kV OVERHEAD LINE UPRATE .....	10
3.7	MODIFICATIONS TO KILKENNY SUBSTATION .....	10
3.8	MODIFICATIONS TO EXISTING ATHY-PORTLAOISE 110kV LINE .....	10
3.9	OVERALL ASSESSMENT OF CHARACTERISTICS OF PROPOSED DEVELOPMENT .....	11
3.9.1	<i>Overhead line works</i> .....	11
3.9.2	<i>New 400kV/110kV substation at Coolnabacky and new Ballyragget 110kV/38kV/MV substation</i> .....	12
3.9.3	<i>Modifications to the existing Kilkenny substation</i> .....	12
3.9.4	<i>Conclusion</i> .....	12
<b>4</b>	<b>LOCATION OF THE PROPOSED DEVELOPMENT .....</b>	<b>13</b>
4.1	PROJECT STUDY AREA .....	13
4.2	CONSTRAINTS IDENTIFIED IN STUDY AREA .....	16
4.3	IDENTIFICATION OF SUITABLE SUBSTATION LOCATION .....	16
4.4	LOCATION OF PREFERRED ROUTE CORRIDOR AND PROPOSED LINE ROUTE .....	17
4.5	LEAD CONSULTANT REPORT .....	17
4.6	OVERALL ASSESSMENT OF THE LOCATION OF THE PROPOSED DEVELOPMENT .....	19
4.6.1	<i>Construction of Overhead Lines between New Substations</i> .....	19
4.6.2	<i>Construction of New 400/110kV Substation and the new 110kV Substation at Ballyragget</i> .....	19
4.6.3	<i>Modifications to Existing Substation at Kilkenny</i> .....	20
4.6.4	<i>Location of the Laois – Kilkenny Reinforcement Project as a whole</i> .....	20
<b>5</b>	<b>CHARACTERISTICS OF POTENTIAL IMPACTS .....</b>	<b>20</b>
5.1	SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS OF PROPOSED DEVELOPMENT .....	20
5.1.1	<i>Human Beings</i> .....	20
5.1.2	<i>Landscape and Visual</i> .....	20
5.1.3	<i>Ecology</i> .....	21
5.1.4	<i>Soils and Geology</i> .....	21
5.1.5	<i>Hydrology and Hydrogeology</i> .....	22
5.1.6	<i>Cultural Heritage</i> .....	22
5.2	OVERALL ASSESSMENT OF CHARACTERISTICS OF POTENTIAL IMPACTS .....	22
5.2.1	<i>Construction of Overhead Lines between Substations</i> .....	22
5.2.2	<i>Construction of New 400/110kV Substation and the new 110kV Ballyragget Substation</i> .....	23
5.2.3	<i>Modifications to Existing Kilkenny Substation</i> .....	23
5.2.4	<i>Potential Impact of the Laois – Kilkenny Reinforcement Project as a whole</i> .....	23
<b>6</b>	<b>CHECKLIST OF CRITERIA IN RELATION TO SUB-THRESHOLD DEVELOPMENT .....</b>	<b>24</b>
<b>APPENDIX 1</b>	<b>OVERALL DEVELOPMENT POTENTIAL RATING MAP</b>	

# 1 INTRODUCTION

The purpose of this report is to identify the considerations that may influence the decision of the competent Authority [An Bord Pleanála] in respect of its statutory obligation to make a 'screening' decision as to whether or not an Environmental Impact Assessment (EIA) should be required for the Laois-Kilkenny Reinforcement Project.

For the assistance of the Board in this determination this report describes the relevant considerations – as understood by the applicant.

The developer of the proposed project is EirGrid plc (EirGrid), an independent, state-owned company, which has responsibility for the development and operation of Ireland's national electricity grid.

EirGrid's statutory responsibility is as follows:

- To operate a safe, reliable, economical and efficient national electricity grid;
- To plan and develop the grid infrastructure needed to support Ireland's economy;
- To supervise the security of the national grid;
- To schedule electricity generation with power generators and stations; and
- To facilitate the market for renewable electricity in Ireland.

It is in this capacity that EirGrid is proposing to reinforce the electricity network in the general Midlands and South East regions. In brief, the main elements of the proposed new transmission infrastructure include:

- A new 400/110kV substation near Portlaoise, Co. Laois. The existing Athy – Portlaoise 110kV and Dunstown – Moneypoint 400kV overhead lines will connect to this new substation. The 110kV connection will be made adjacent to the station, whilst the 400kV connection will be made by way of 1.4km of double circuit overhead line.
- A new 110kV/38kV /MV substation adjacent to the existing 38kV/MV substation (which will ultimately be decommissioned) in Ballyragget, Co. Kilkenny
- A new 110kV overhead line between the new 400/110kV substation near Portlaoise and the new 110kV/38kV/MV substation in Ballyragget, Co. Kilkenny
- An uprate to the existing Ballyragget-Kilkenny 110kV overhead line, associated works in Kilkenny substation and associated modifications to part of the Athy-Portlaoise overhead line (earthwire retrofit).

## 1.1 NEED FOR THE PROJECT

Ireland faces the challenge of providing continued reliable, secure and affordable electricity services in the coming decades. EirGrid is the independent electricity transmission system operator (TSO) in Ireland and it is EirGrid's role to 'deliver quality connection, transmission and market services to electricity generators, suppliers and customers utilising the high voltage electricity system'.

EirGrid's 'Grid 25 Strategy' is critical to facilitate a reliable, secure and sustainable power supply in Ireland. The Strategy outlines how the transmission network will be developed in anticipation of Ireland's long-term needs and how it is going to meet the country's current and future

demand for electricity. This position is endorsed in the recent 'Government Policy Statement on the Strategic Importance of Transmission and Other Energy Infrastructure' (July 2012). The Strategy will involve upgrading the high voltage system in Ireland over the period up to 2025.

The transmission network in Ireland consists of a meshed network of high voltage lines and cables for the transmission of bulk electricity supplies around Ireland. The transmission system comprises 400kV, 220kV and 110kV circuits linked through transmission stations or nodes.

The Laois – Kilkenny Reinforcement Project is required in order to reinforce the transmission network in the South East and Midlands regions. The project will improve the quality and security of the electricity supply to the region thereby ensuring continued compliance with the Transmission Planning Criteria (the technical standards to which the grid must comply).

This project is identified in the Grid 25 Implementation Programme 2011-2016, which addresses the early stages of the Grid 25 Strategy, and which has been subject to Strategic Environmental Assessment (SEA).

EirGrid proposes to apply to An Bord Pleanála, pursuant to the provisions of Section 182A of the Planning and Development Act, as amended, for planning approval in respect of the Laois-Kilkenny Reinforcement Project.

## **2 PURPOSE OF REPORT**

The purpose of this report is to identify the considerations that may influence the decision of the Competent Authority [An Bord Pleanála] about whether or not an Environmental Impact Assessment (EIA) would be required for the proposed Laois – Kilkenny Reinforcement Project.

Article 2(1) of Directive 85/337/EEC, as amended and now codified as Directive 2011/92/EU [the EIA Directive], requires measures to be taken to ensure that, before development consent is given, projects likely to have significant effects on the environment by virtue of their nature, size or location are made subject to a requirement for development consent and an assessment with regard to their effects.

EIA screening can be defined as the process of assessing the requirement for a project to be subject to Environmental Impact Assessment (EIA) based on project type, location and scale and on the significance or environmental sensitivity of the receiving environment<sup>1</sup>.

### **2.1 STATUTORY REQUIREMENT FOR ENVIRONMENTAL IMPACT ASSESSMENT**

For projects listed in Annex II to the EIA Directive, there is a requirement to determine through (a) case-by-case examination, or (b) thresholds or criteria, whether a project should be subject to EIA.

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<sup>1</sup> Environmental Protection Agency (EPA) (2002) 'Guidelines on Information to be contained in Environmental Impact Statements'.

The principal Irish legislation pertaining to the requirement for the Environmental Impact Assessment of various types of developments are the Planning and Development Acts 2000 – 2011 and the Planning and Development Regulations 2001 – 2012.

Ireland has implemented its obligations by requiring the preparation and submission of an Environmental Impact Statement (EIS) for projects falling within classes of development prescribed by article 93 of, and Schedule 5 to, the Planning and Development Regulations 2001 – 2012. These regulations are made pursuant to section 176 of the Planning and Development Act 2000. In essence, every project listed in Part 1 of Schedule 5 must be subject to an Environmental Impact Assessment and, accordingly, an EIS must be submitted to the competent authority with an application for development consent in this regard.

Accordingly, pursuant to paragraph 20 of Part 1 of Schedule 5, all projects consisting of construction of overhead electrical power lines with a voltage of 200 kilovolts or more and length of more than 15 kilometres must be the subject of an EIA, and an EIS must be submitted to the relevant competent authority with an application for development consent. Having regard to the characteristics of the proposed development outlined in Section 1 and, in particular, the contents of Section 3 of this report, it is clear that the proposed development does not fall within paragraph 20 of Part 1 of Schedule 5 to the 2001 Regulations.

However, notwithstanding the provisions of paragraph 20 of Part 1, there is a requirement to consider whether, pursuant to paragraph 3 of Part 2 of Schedule 5, the proposed development is development of a type which comprises ‘Industrial installations for carrying gas, steam and hot water with a potential heat output of 300 megawatts or more, or transmission of electrical energy by overhead cables not included in Part 1 of this Schedule, where the voltage would be 200 kilovolts or more’. Moreover, in deciding whether proposed development is required to be the subject of EIA, the provisions of Schedule 7 to the 2001 Regulations prescribe the criteria for determining whether a development would or would not be likely to have significant effects on the environment.

It is also significant that section 172 of the Planning and Development Act 2000, which contains the primary obligation in respect of EIA in Irish national law, was amended by section 54 of the Planning and Development (Amendment) Act 2010. Significantly, however, further amendments have been made in respect of section 172 pursuant to article 6 of S.I. No. 473 of 2011. Thus, the combined effect of the section 172, as amended, is as follows:

(i) an EIA shall be carried out by the Board in respect of an application for consent for proposed development of a class specified in Schedule 5 to the 2001 regulations which exceeds threshold, and proposed development of a class specified in Schedule 5 which does not exceed a threshold *“but which ... the Board determines would be likely to have significant effects on the environment”*;

(ii) in this context, the definition of “proposed development” has been recently amended to specifically include “proposed development that may be carried out under Part XI”. A similar amendment is made to the definition of “consent for proposed development” to include consent for proposed development including development carried out under Part XI. In other words, an application for approval pursuant to section 182A falls under the rubric of section 172.

(iii) a specific requirement for a screening decision is now contained in section 172(1)(b). Thus, the Board must make a determination as to whether sub-threshold development would be likely to have significant effects on the environment. Pursuant to section 172(1)(b) where

the Board determines that sub-threshold development would be likely to have significant effects on the environment, an applicant for consent must furnish an EIS to the Board<sup>2</sup>.

## 2.2 ASSESSMENT OF SUB-THRESHOLD DEVELOPMENT

The decision of An Bord Pleanála as to whether the proposed development is likely to have ‘significant effects’ on the environment must be taken with reference to the criteria set out in Schedule 7 of the Planning and Development Regulations 2001–2012.

Schedule 7 sets out the principal criteria for determining whether a development would or would not be likely to have significant effects on the environment under the following three headings:

- Characteristics of the Proposed Development
- Location of the Proposed Development
- Characteristics of Potential Impacts.

For the purpose of assessing whether the Laois – Kilkenny Reinforcement Project as sub-threshold development can be considered to be likely to have significant effects on the environment, the following sections of this report will address the Project under each of the three headings set out above.

The final section of the report will then present a summary consideration of the Project using a 17 question format taken from the Department of the Environment, Heritage and Local Government (now DECLG) 2003 “Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding Sub-threshold Development”.

## 3 CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

The main elements of the proposed new transmission infrastructure to be provided as part of the Laois – Kilkenny Reinforcement Project comprises the following eight distinct items:

No.	Description	Detail	Comment
1	New 400/110kV GIS substation, ‘Coolnabacky’ near Portlaoise Co. Laois.		
2	New connection to Coolnabacky from the existing Moneypoint-Dunstown 400kV line.	This connection will be made by approximately 1.4km of 400kV overhead line which will be supported by 5 double circuit structures, with two single circuit structures required under the existing line.	150 m of the existing 400kV overhead line will also be removed to facilitate this connection
3	New connection to Coolnabacky from the existing Athy-Portlaoise 110kV line	This connection will be made by very short lengths (100-200m) of underground cable	Approximately 140 m of the existing 110kV overhead line will be removed to

<sup>2</sup> As advised by EirGrid

No.	Description	Detail	Comment
		adjacent to the substation. Outside the fence is 50m for the Athy link and 170m for the Portlaoise link. Two new line cable interface masts will be required to facilitate this connection.	facilitate this connection.
4	A new 110kV / 38kV / MV substation in Ballyragget, Kilkenny adjacent to the existing 38kV /MV substation.	The existing 38kV /MV substation will be ultimately decommissioned following completion of the replacement substation.	
5	A new 110kV overhead line between Ballyragget and Coolnabacky	This line will be approximately 26km long with the connections at each station end being made by short lengths (<200m) of underground cable. Outside the fence at Coolnabacky the cable is 170 m. At the Ballyragget end it is 110 m. A new line cable interface mast will be required at either end to facilitate these connections.	
6	An uprate to the existing Ballyragget-Kilkenny 110kV overhead line	This existing line is approximately 22km long and the existing structures all need to be replaced. The connections at either end will be made by short lengths of underground cables. At Ballyragget the distance to the compound fence is approximately 100m, 30m of which will be public road and private field.	Earthwire structures will be installed on this line for the first c.1.7km from Ballyragget station
7	A new bay in Kilkenny 110kV station	A new line bay within the existing substation	
8	Modifications to existing Athy-Portlaoise 110kV line	Earthwire structures will be installed on this line for a minimum of 3.61km	

Each element of the project is described in further detail in the following sections before a brief assessment of the overall characteristics of the proposed development in accordance with the requirements of Schedule 7 of the Planning and Development Regulations 2001 – 2012.

### 3.1 CONSTRUCTION OF A NEW 400/110KV SUBSTATION

The project will entail the construction of a new 400/110kV electricity substation in the townland of Coolnabacky near Portlaoise, Co. Laois. This area was chosen following a Site Selection Study as detailed in the Report prepared by ESBI reference PE687-F0261-R261-006-

001 and titled "400/110kV Emerging Substation Site" (Appendix G of Stage 1 Report, available on project website)<sup>3</sup>.

The preferred substation technology is GIS (Gas Insulated Switchgear). Typically housed indoors, these stations are the smallest and most compact station type. The selection of this technology is based on both cost and technical considerations as well as taking into account the overall reduced size and the associated reduced environmental impact that the building form would allow, relative to a larger open air AIS (Air Insulated Switchgear) option.

The 400/110kV GIS substation compound consists of a 400kV building, [building dimensions approximately 64m x 15.3m x 12m] and a 110kV building, [building dimensions approximately 50m x 11.5m x 12m]. These buildings contain the switchgear. The power transformers are located next to the 400kV building and are separated by a fire wall. It is estimated that the GIS compound would be of the order of 1.08Ha in size. An illustration of a typical 400/110kV substation development is provided in Figure 3.1 below.



Figure 3.1: Illustration of a typical 400 / 110kV GIS Substation

### **3.2 NEW 400KV OVERHEAD LINE CONNECTION TO EXISTING DUNSTOWN – MONEYPPOINT 400KV LINE**

A new connection from the existing Dunstown – Moneypoint 400kV line will be required to connect to the new 400kV/110kV substation. This line will be approximately 1.4km in length and will primarily consist of double circuit pylons. Typical double circuit pylons, ranging in

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<sup>3</sup> Available at <http://www.eirgridprojects.com/projects/laoiskilkenny/phaseone-reports/>

height from 55m to 58m, are as illustrated in Figure 3.2 below. It is expected that there will be 5 double circuit structures, with two single circuit structures (expected heights of 32.25m and 37.25m) required under the existing line.



**Figure 3.2: Existing 400kV Double Circuit Line (near Moneypoint Generating Station, Co. Clare)**

### **3.3 NEW CONNECTION TO COOLNABACKY FROM THE EXISTING ATHY-PORTLAOISE 110KV LINE**

The existing Athy-Portlaoise 110kV overhead line is required to connect into Coolnabacky substation. This line passes within metres of the substation and the connection will be made by a very short length of underground cable.

### **3.4 NEW 110KV/38KV/MV SUBSTATION AT BALLYRAGGET**

To facilitate the requirements of this reinforcement project a new 110kV/38kV/MV substation will be constructed adjacent to the existing 38kV/MV Ballyragget substation (70m x 60m footprint). The existing 38kV/MV substation will ultimately be decommissioned.

### **3.5 NEW 110KV OVERHEAD LINE BETWEEN BALLYRAGGET AND COOLNABACKY SUBSTATIONS**

The proposed line will be approximately 26km in length and will be constructed of double wood polesets at intermediate locations with galvanised steel lattice towers (single circuit angle structure) at angle positions where the line changes direction.

Each intermediate poleset comprises two wood poles, 5 metres apart, connected near the top with a rolled steel channel. The full length of the wood poles varies from 16 – 23m with a minimum 2.3m of this buried underground. The polesets carry three conductors (also known as phases) which carry the electrical current and are suspended from electrical insulators. Two earthwires are supported on top of the poles on earthwire brackets which extend 0.45m above the top of the pole in order to protect the overhead line from lightning strikes. Figure 3.3 below shows an example of an existing 110kV line and poleset. It is noted that the 110kV network of poles and angle towers is the most extensive form of transmission infrastructure across all parts of the country; there is currently some 4,100km of 110kV overhead line transmission infrastructure across the country and some 5,340km of 110kV overhead line on the island of Ireland.



**Figure 3.3: An Existing 110kV Single Circuit Line**

Lattice steel angle towers are used where the line changes direction. They typically range in height from circa 17 – 24m depending on the ground profile. The angle structure holds three conductors connected to electrical insulators in a horizontal formation along the lower cross arm. Two earthwires are supported on the upper cross arm. An example of a 110kV lattice steel angle tower is shown in Figure 3.4 below.



**Figure 3.4: A 110kV Line Lattice Steel Angle Tower**

### **3.6 BALLYRAGGET – KILKENNY 110KV OVERHEAD LINE UPRATE**

The existing Ballyragget-Kilkenny overhead line is currently permitted to operate at 110kV, however it currently operates at 38kV. It is now required to operate at 110kV and the line is therefore required to be uprated. This will entail the replacement of existing structures with newer structures as well as re-stringing with a new conductor. Some earthwire structures are also required to be installed for the first c.2km extending from the new Ballyragget station. The length of this existing line is 22km and consists of 104 structures.

### **3.7 MODIFICATIONS TO KILKENNY SUBSTATION**

A new 110kV bay and associated works will be constructed within the existing Kilkenny 110kV substation to accommodate the uprated Ballyragget connection.

### **3.8 MODIFICATIONS TO EXISTING ATHY-PORTLAOISE 110KV LINE**

It is a technical requirement to provide lightning protection to all overhead lines connected to new transmission substations. This lightning protection is provided in the form of earthwire and will see approximately 3.61km in total of earthwire retrofitted to the existing line. This will require the replacement of all of the existing structures along this section of line (approximately 21 structures). There is however no alteration to the character or alignment of the existing line.

### **3.9 OVERALL ASSESSMENT OF CHARACTERISTICS OF PROPOSED DEVELOPMENT**

The first of the three criteria set out in Schedule 7 of the Planning and Development Regulations 2001 – 2012 for determining whether a development would or would not be likely to have significant effects on the environment relates to the characteristics of the proposed development, and in particular:

- the size of the proposed development
- the cumulation with other proposed development
- the nature of any associated demolition works
- the use of natural resources
- the production of waste
- pollution and nuisances
- the risk of accidents, having regard to substances or technologies used.

Having regard to these detailed criteria, a brief assessment of the various elements of the Laois – Kilkenny Reinforcement project is presented in the following paragraphs.

#### **3.9.1 Overhead line works**

This element of the project is mainly linear in nature and consists of approximately 53km of new and replacement cables and structures.

- 26 km of new 110kV line between Ballyragget and Coolnaback
- 22 km of replacement 110kV line along existing route of Ballyragget - Kilkenny line
- 1.4 km of new double circuit line from Coolnaback to the 400kV Dunstown-Moneypoint line
- 3.61 km of new earthwire line along the existing Athy-Portlaoise line.

While the length of the overhead line elements of the Laois – Kilkenny project means that it could be considered a large scale development, its linear configuration, the use of wooden polesets and steel angle mast structures and the use of the existing route alignment between Ballyragget and Kilkenny, reduces the actual impact of this element of the project. There are a number of polesets for the more extensive 110kV sections that will marginally increase in height (along the Ballyragget – Kilkenny section) including one poleset which will be replaced within the boundary of a cSAC. There will be an increase in the number of steel angle masts in the area of the existing intersection of the 400kV and the 110kV lines. The proposal also includes 2 new 400kV double circuit angle masts both 55.5m in height and three new 400kV intermediate masts all 57.75m in height.

The construction of the 22km of the Ballyragget – Kilkenny overhead line and the 3.6km of the Athy – Portlaoise line will entail works to replace the existing 125 structures - there will be no alteration to the existing alignments of those lines, except minor local realignments at station ends. Any used woodpoles are generally removed from site, brought back to the ESB depot and recycled. Similarly removed angle towers will be brought to a scrap yard with any waste concrete being sent to a licensed facility for recycling.

The lines will not make use of natural resources after the construction phase, and will not lead to the production of additional levels of waste as any excavated material is generally spread

around the site. The route of the new overhead line (Ballyragget to Coolnaback) has been chosen to avoid sensitive receptors which will reduce the potential impact of noise during construction and reduce the potential for nuisances arising. No deviation from the existing linear alignment is proposed for the Ballyragget - Kilkenny and the Athy – Portlaoise section of line.

### **3.9.2 New 400kV/110kV substation at Coolnaback and new Ballyragget 110kV/38kV/MV substation**

There will be a new substation at Coolnaback near Portlaoise (400kV/110kV substation) and a new 110kV/38kV/MV substation adjacent to the existing 38kV Ballyragget substation. Approximately 1.2km of access road will be upgraded including a small section that is to be realigned.

With respect to the Coolnaback substation there is no other development of a similar nature present in the surrounding area and no demolition is required for the construction of this substation. Aside from the construction phase, the new substation will not make direct use of natural resources or produce significant volumes of waste. The compound area required will be in the order of 1.08Ha.

The siting of the proposed substation away from sensitive environmental receptors such as residential areas, single dwellings, or environmentally vulnerable sites will result in little or no impacts in terms of noise, pollution or any other potential nuisances.

The new substation at Ballyragget will be located closer to the River Nore cSAC in comparison with the existing substation (being in the neighbouring field) – however it is outside of the area identified as the cSAC boundary. The eventual decommissioning of the Ballyragget substation will involve demolition of the building, and its internal equipment (transformers and steelwork) will be recycled.

Finally, there is a low risk of accident associated with technologies and substances used, as evidenced by the safe construction and operations of many such substations across the county by EirGrid, ESB and their contractors.

### **3.9.3 Modifications to the existing Kilkenny substation**

The proposed modifications to the existing substation in Kilkenny are of a relatively minor nature and will not result in any significant use of natural resources, production of waste, pollution or nuisances and as is the case with the proposed new substation will not pose a serious risk of accidents.

### **3.9.4 Conclusion**

When considered together, the various elements of the proposed Laois – Kilkenny Reinforcement Project could be viewed as a large scale project crossing over two counties. There is 53km of new or replacement overhead lines and there is the construction of two new substations – the Ballyragget substation being located closer to the River Nore cSAC.

The project could also be viewed as ‘cumulating’ with the ongoing development of the electricity transmission system as part of the Grid 25 Strategy. It is important to note that this type of cumulative impact has already been addressed in the Strategic Environmental Assessment produced for the Grid 25 Implementation Programme 2011-2016.

## 4 LOCATION OF THE PROPOSED DEVELOPMENT

The Laois – Kilkenny Reinforcement Project is required in order to reinforce the electricity transmission network in the South East and Midlands regions. A comprehensive site selection process for the location of the new substation and the proposed line route (new Ballyragget to Coolnabacky 110kV line) through the area was undertaken as part of the project development programme in accordance with EirGrid's Project Development and Consultation Roadmap.

Importantly, the Ballyragget - Kilkenny line and the Athy - Portlaoise lines already exist.

The following section of this report describes how the Ballyragget to Coolnabacky line was identified as well as the Coolnabacky Substation site itself, starting with the identification of a project study area, before providing a brief assessment of the overall location of the proposed development in accordance with detailed criteria set out in Schedule 7 of the Planning and Development Regulations 2001 – 2012.

### 4.1 PROJECT STUDY AREA

The initial task of the project development process entailed the selection of the study area for Laois – Kilkenny Reinforcement Project. The 'project study area' is the broad geographical region within which a practical feasible site and route can expect to be found having regard to the technical rationale for the project. In this case the project study area covers an area of approximately 29 x 30km (870 sq km).

This study area was established taking into consideration the connection requirements for the project. These requirements include connection to the existing Dunstown – Moneypoint 400kV overhead line, connection to the existing Athy – Portlaoise 110kV overhead line and a new 110kV substation adjacent to the existing Ballyragget 38kV substation<sup>4</sup>.

The project study area, shown in Figure 4.1 extends from its southern boundary about 6km south of Ballyragget, Co. Kilkenny to its northern boundary at Stradbally, Co. Laois, and from its eastern boundary about 2km from Athy, Kildare to its western boundary 4km from Durrow, Co. Laois. The project study area does not extend to Kilkenny substation as it is considered reasonable and feasible to use the existing Ballyragget-Kilkenny overhead line alignment.

The project study area is rural by nature and is characterised by farmland interspersed with towns, villages and settlements connected by a road network. The landscape of the project study area is mainly characterised by lowlands through which the River Nore flows with higher ground underlain by the Castlecomer Plateau. The lowlands in the western section are underlain by limestone and are generally flat and have fertile soils. The area is dominated by farmland, with a network of fields containing improved grasslands and tillage connected by hedgerows.

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<sup>4</sup> It was originally intended to add a 110kV extension to the existing Ballyragget 38kV /MV substation. In developing this design and following consultations with ESB it is considered more appropriate to develop a new 110kV / 38kV / MV substation to replace the existing 38kV / MV station at Ballyragget. The new station will be built adjacent to the existing station, on ESB lands.

The Castlecomer Plateau area contains higher ground extending up to 330m and is underlain by shales and sandstone. This area has an undulating hilly landscape with low peaks and some low-lying valleys that are drained by tributaries of the River Nore. This type of environment and geology means that soil is less fertile with impeded drainage and as a result wet grasslands are a prominent feature of these hillsides. Conifer plantations are also regularly found in this area. Elevation in the study area ranges from 60m along the River Nore channel to 326m near Fossy Mountain.

The majority of this project study area is found within the River Nore catchment and the proposed site of the 110kV substation at Ballyragget is positioned near the river. A section on the eastern side of the study area lies within the Barrow catchment. The study area of the proposed site for the new 400/110kV substation also lies within this catchment.

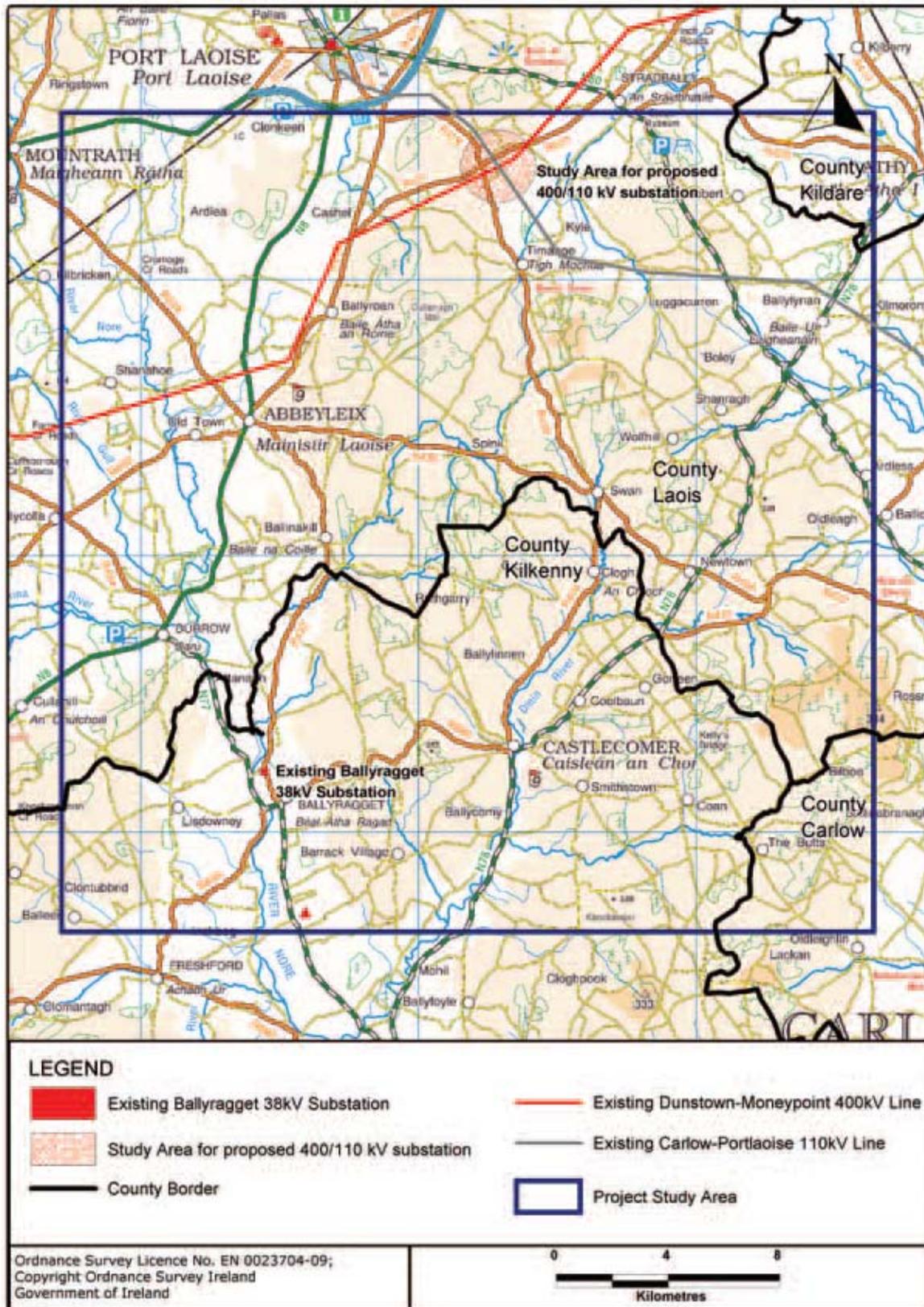


Figure 4.1: Laois – Kilkenny Reinforcement Project Study Area

## 4.2 CONSTRAINTS IDENTIFIED IN STUDY AREA

A key element of the site location and line route selection process included a number of preliminary desktop studies detailing the major physical and environmental constraints within the study area. These studies were carried out by qualified members of the project team to identify potential constraints and issues associated with the following topics:

- Human Beings
- Landscape and Visual Impact
- Ecology (Flora and Fauna)
- Soils and Geology
- Hydrology and Hydrogeology
- Cultural Heritage and Archaeology

All of the findings were compiled into a 'Constraints Map' and detailed in a written report to enable the next stage of the project progress i.e. to identify potential route corridors and a substation location.

## 4.3 IDENTIFICATION OF SUITABLE SUBSTATION LOCATION

The next task of the project development process involved using the environmental and other constraints identified during the desktop studies to identify the location for the new 400/110kV substation, as well as possible route corridor options between the two substations.

After further study, it was deemed appropriate to proceed with a GIS substation. The preferred location is found in the townland of Coolnabacky, near Portlaoise, Co Laois.

The site of the proposed substation is approximately 1.4km southeast of the existing 400kV overhead line and is located in an isolated area close to a disused quarry. The landholding has good topographical enclosure and good screening vegetation. There are a low number of dwellings in the immediate vicinity and the site is accessed from an existing quarry road, with good screening from the R426 and R427 roads.

To facilitate the requirements of the reinforcement project a 110kV/38kV/MV substation is to be constructed adjacent to the existing 38kV substation in Ballyragget, Co. Kilkenny. The land is owned by ESB and is of sufficient size to accommodate the proposed new substation.

As part of the project, a new 110kV bay and associated works to accommodate the Ballyragget connection will be constructed at the existing Kilkenny 110kV substation. This work will primarily be carried out within the existing substation compound.

#### **4.4 LOCATION OF PREFERRED ROUTE CORRIDOR AND PROPOSED LINE ROUTE**

Once the location of the preferred site of the new 400/110kV substation at Coolnabacky had been identified, it was possible to begin the process of identifying possible route corridor options between this identified site in Co. Laois and the site of the existing Ballyragget substation in Co. Kilkenny.

Using the results of the desktop studies on environmental and other constraints within the project study area, a number of potentially feasible corridors were identified within which a transmission line could be accommodated.

The expert consultants responsible for each of the environmental topics identified in Section 4.2 above were requested to report on all of the potential route corridors, to identify any potential constraints and to identify their most preferred, less preferred and least preferred corridor.

#### **4.5 LEAD CONSULTANT REPORT**

After reviewing the findings of these reports, the lead consultant recommended the emerging preferred 110kV route corridor for the Coolnabacky-Ballyragget element of the project. The lead consultant also recommended the corridor from the Coolnabacky substation to the Dunstown–Moneypoint 400kV line which was considered to be the optimum route due to the fact that it follows the route of the existing Athy – Portlaoise 110kV line. This was presented in the Stage 1 Lead Consultant's Report<sup>5</sup>.

Once identified, this emerging preferred route as well as the location of the proposed new 400/110kV substation were subject to further public consultation as part of the project development process. Following feedback from key stakeholders, agencies and the general public and from an on-site review by the Lead Consultant, a slightly modified route corridor was selected.

This in turn enabled the project team to design a proposed line route for the project as illustrated in Figure 4.2. This was presented in the Stage 2 Lead Consultant's Report<sup>6</sup>.

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<sup>5</sup> Available at <http://www.eirgridprojects.com/projects/laoiskilkenny/phaseonereports/>

<sup>6</sup> Available at <http://www.eirgridprojects.com/projects/laoiskilkenny/stagetworeports/>

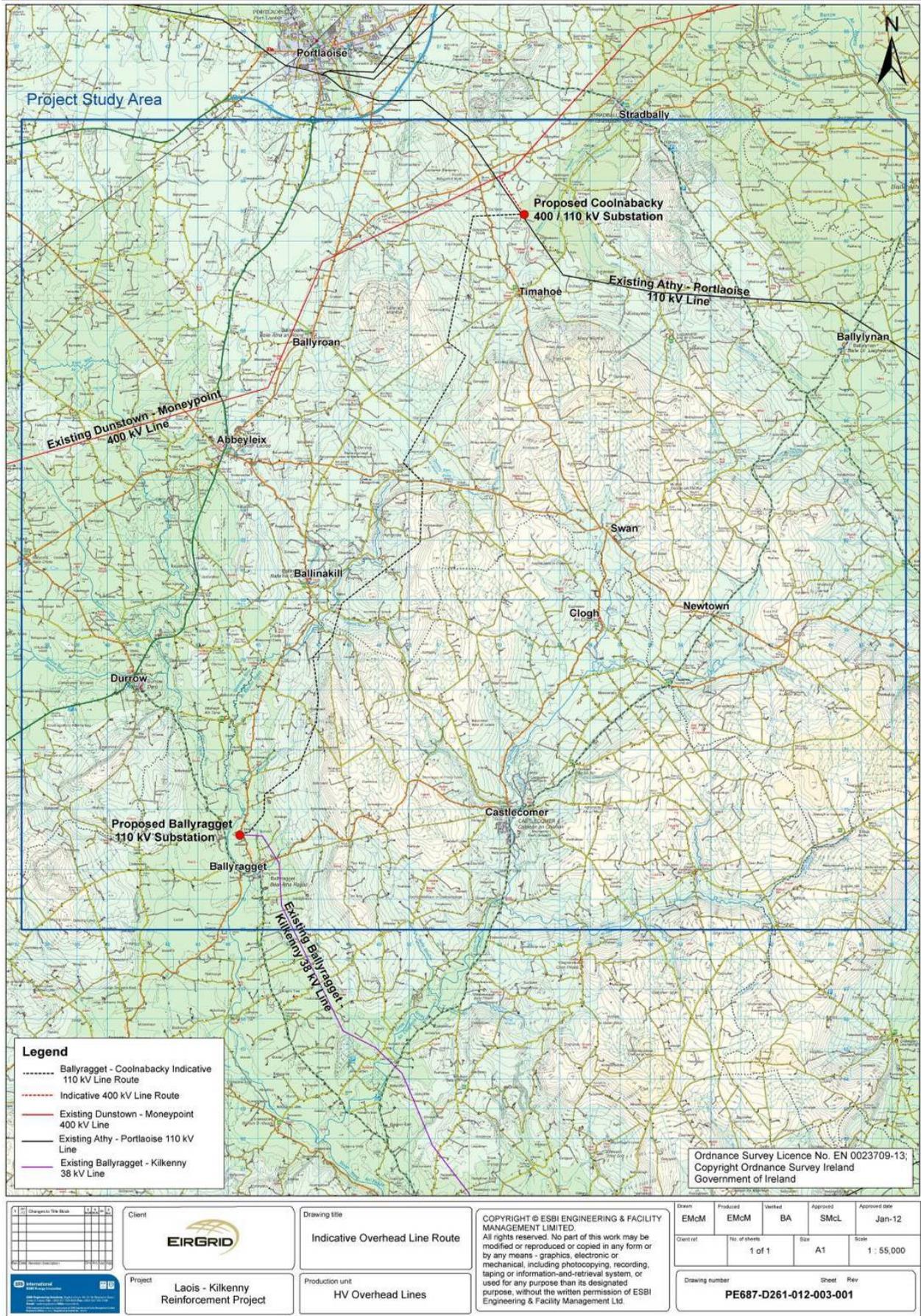


Figure 4.2: Proposed 400 and 110kV Line Route and substations

## **4.6 OVERALL ASSESSMENT OF THE LOCATION OF THE PROPOSED DEVELOPMENT**

After describing the location of each main element of the Laois – Kilkenny Reinforcement Project as well as how each location was arrived at, this section presents a brief assessment of the overall 'location of the proposed development' as required by Schedule 7 of the Planning and Development Regulations 2001–2011.

The second criterion included in this Schedule relates to the environmental sensitivity of geographical areas likely to be affected by proposed development, having particular regard to:

- the existing land use
- the relative abundance, quality and regenerative capacity of natural resources in the area
- the absorption capacity of the natural environment.

The following paragraphs present a brief assessment of the various elements of the Laois – Kilkenny Reinforcement project as they related to the above points.

### **4.6.1 Construction of Overhead Lines between New Substations**

The existing land use along the route of the overhead line elements of the Ballyragget - Coolnaback (both the 110kV and the 400kV line) is primarily rural / agricultural in nature. Due to the careful route selection process the proposed line largely avoids major settlements as well as rural dwellings and sensitive environmental and heritage sites.

Furthermore, the careful siting of the poleset and steel angle mast structures used to carry the overhead line means that they are unlikely to have any significant impact on the quality of natural resources in the area or on the absorption capacity of the natural environment as a whole.

As noted above it is not intended to deviate from the routes of the existing Ballyragget to Kilkenny and the Athy to Portlaoise line – the routes have been established and the proposed project will not result in any changes to the existing land use, natural resources or absorption capacity of the environment.

### **4.6.2 Construction of New 400/110kV Substation and the new 110kV Substation at Ballyragget**

As was outlined earlier in this chapter, the existing land use in the 400kV substation study area is rural by nature and is characterised by farmland interspersed with towns, villages and settlements connected by a road network. The existing land use for the site of the proposed new substation is rural / agricultural.

Careful site selection has ensured that the new substation is not located close to, and is unlikely to impact significantly on the relative abundance, quality and regenerative capacity of natural resources in the areas such as flora and fauna and soils and water.

The isolated nature and location of the development site, allied with a high quality design and best practice construction methods will help to ensure that the new substation will not significantly impact on the absorption capacity of the natural environment in the area.

The new 110kV substation at Ballyragget will be within the existing land ownership of ESB. The new substation will be located closer to the River Nore cSAC however remains outside the cSAC boundary.

#### **4.6.3 Modifications to Existing Substation at Kilkenny**

As the proposed modifications to the existing Kilkenny substation will entail development within the boundaries of previously developed sites, no changes will take place to existing land use, and there will be little or no impact on the current status of natural resources or the environment.

#### **4.6.4 Location of the Laois – Kilkenny Reinforcement Project as a whole**

When considered as a whole, the location and careful siting of the various elements of the proposed Laois – Kilkenny Reinforcement Project means that the project will not result in the loss of any significant areas of economically or environmentally valuable land uses.

In addition, the nature and location of the various elements of the project as far from sensitive environmental receptors as possible ensure that the various elements are unlikely to have a significant impact on the relative abundance, quality, and absorption capacity of the natural environment as can be seen from the attached environmental constraints map extracted from the Grid25 Implementation Programme 2011-2016 SEA document (see Appendix 1).

## **5 CHARACTERISTICS OF POTENTIAL IMPACTS**

Following on from the description of the characteristics and the location of the proposed development presented in the preceding pages, this section of the report will address the characteristics of the potential environmental impacts of the Laois – Kilkenny Reinforcement Project.

### **5.1 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS OF PROPOSED DEVELOPMENT**

Before assessing the potential impact of the proposed development as a whole it is first necessary to present a brief overview of potential impacts of the project on each of the environmental topics addressed in the previous chapter.

#### **5.1.1 Human Beings**

Due to the avoidance of larger settlements and residential properties, the potential impacts of the proposed development on human beings are not likely to be significant. The implementation of appropriate mitigation measures will ensure there will be no significant residual impact on the environment from the proposed development in respect of human beings.

#### **5.1.2 Landscape and Visual**

The character and appearance of unscreened lands within 50 – 150m of the new Ballyragget to Coolnabacky and the 1.4km Coolnabacky to the Dunstown – Moneypoint line and uses thereon will be significantly altered. Route selection is the most important mitigation measure for minimising landscape and visual impacts from overhead lines. A route has been developed to minimise, but not remove all visual and landscape effects. Those that remain are the 'residual effects' that will occur if this project is permitted to proceed.

It is not planned to deviate from the existing route of the Ballyragget - Kilkenny line or the Athy – Portlaoise line. Whilst a number of the polesets will be changed in appearance (increased in height) this will be in the context of an environment where existing electricity infrastructure already exists.

It is considered that the residual impact cannot be avoided given the technical need for the proposed development to connect into the existing lines, however the use of double circuit towers will limit the numbers of towers required to facilitate such a connection.

The new substation at Coolnabacky has been chosen to minimise the impact on the Landscape and the Ballyragget substation is to be located adjacent to the existing 38kV substation within ESB owned lands.

### **5.1.3 Ecology**

The potential impacts (direct, indirect and cumulative) of the proposed development on the flora and fauna of the study area are qualitatively assessed.

A number of ecological reports and surveys have been carried out during the constraints identification and route evaluation stages of the proposed development that have enabled an assessment of the potential ecological impacts of the proposed scheme. These reports and surveys include:

- Ecological constraints report
- Winter bird surveys undertaken over two seasons (January 2010 – April 2010 and October 2010 - April 2011)
- Ecological assessment of potential route corridors and route selection
- Assessment of preferred route corridor which included multidisciplinary walkover surveys of line routes and substation sites associated with the development

A description of the existing ecological environment surrounding the proposed development is presented paying particular attention to features of ecological interest. Those features of particular interest in the surrounding area are associated with the designated River Barrow and River Nore cSAC. The potential impacts of the proposed development on Natura 2000 sites in the surroundings will be assessed in the form of an Appropriate Assessment Screening Statement.

Most of the lands that are present along the line route are of low ecological interest with few areas of semi-natural habitat recorded.

Following suggested mitigation, the potential ecological impacts of the proposed development are reduced to give at most an imperceptible negative impact at the local scale. It is concluded that the impacts of the construction and operation of the reinforced electrical infrastructure on the ecology of the study area are likely to be imperceptible and will only be significant at a local level provided construction, management and restoration on decommissioning follow best practice procedures, and the proposed mitigation measures are adopted.

### **5.1.4 Soils and Geology**

The potential impacts relating to soils and geology are generally likely to be related to the construction phase and the management of machinery on site. Such activities are likely to include activities associated with the movement, excavation and disposal of soils, subsoils, peat, bedrock and contaminated materials (if present), temporary paving or compaction of soils, temporary construction of tracks and traffic management procedures.

The application of mitigation measures will help ensure that the residual impacts for all substation options are imperceptible during both the construction phase and the operational phase.

### **5.1.5 Hydrology and Hydrogeology**

The potential impacts relating to the water environment are generally related to the construction phase and the management of machinery on site. The application of the mitigation measures will ensure that the potential impacts for each route option are imperceptible during both the construction phase and the operational phase.

### **5.1.6 Cultural Heritage**

Potential impacts associated with the construction of an overhead line consist of visual impacts and direct physical impacts of support structures such as angle mast and polesets on National Monuments, Recorded Monuments, Protected structures and items of architectural heritage significance.

A visual impact may occur if polesets or angle masts are placed in the same field as a monument or demesne landscape of visual significance. Such impact may occur in particular where monuments are upstanding prominent structures in the landscape for example, tower houses, round towers, churches, standing stones and megalithic tombs. Such impact may be minimised by placing polesets and angle masts in adjacent fields or at field boundaries.

## **5.2 OVERALL ASSESSMENT OF CHARACTERISTICS OF POTENTIAL IMPACTS**

The third and final criterion set out in Schedule 7 of the Planning and Development Regulations 2001–2012 for determining whether a development would or would not be likely to have significant effects on the environment relate to the potential significant effects of the proposed development having particular regard to:

- the extent of the impact (geographical area and size of the affected population),
- the trans-boundary nature of the impact,
- the magnitude and complexity of the impact,
- the probability of the impact,
- the duration, frequency and reversibility of the impact;
- and the interactions between the above factors.

The following paragraphs present a brief assessment of the various elements of the Laois – Kilkenny Reinforcement project with regard to the above points.

### **5.2.1 Construction of Overhead Lines between Substations**

The linear nature of the overhead line elements of the Laois – Kilkenny Project means that it will impact on land stretching over approximately 53km across the boundary of Counties Laois and Kilkenny (notwithstanding the fact that a significant portion of this relates to the existing alignment of the Ballyragget – Kilkenny overhead line). In this sense, it will have a cross county impact but in the context of the provision of new overhead power lines could be considered as not significant or unusual given the extensive nature of the existing electricity transmission network. The 400kV element of the line will be located within Co. Laois (being 1.4km in length).

The potential impact of the overhead line elements of the project are not particularly complex due to the relatively straightforward nature of the proposed tower structures and polesets required to carry the line. In addition, many of the potential impacts arising from the construction and operation of these structures can be mitigated through careful siting and the use of best practice construction practices.

As was outlined in previous sections of this report, the pole and angle mast structures as well as the conductors/wires will have a permanent visual impact on the landscape along the route of the line. However, careful line route selection and structure siting combined with the use of existing alignments of transmission infrastructure will help to considerably reduce the overall impact of this element of the overhead line elements of the proposed development.

The Ballyragget - Kilkenny and the Athy - Portlaoise lines will be replaced and it is not intended to deviate from the route of the existing lines. The Ballyragget - Kilkenny line will entail relatively routine, localised and temporary works in the Nore cSAC which will also be addressed in a separate Natura Impact Statement.

### **5.2.2 Construction of New 400/110kV Substation and the new 110kV Ballyragget Substation**

At just over 1 hectare, the extent of the area taken up by the proposed Coolnabacky substation is relatively small and due to its careful siting away from settlements and dwellings the proposed substation is unlikely to have a direct negative impact on people living in the substation study areas.

The new substation will not have a transboundary impact and any potential impacts will largely occur due to construction on site. Such impacts are unlikely to be large in scale or long lasting given the use of best practice construction methods.

Once the substation has been constructed there remains the potential for environmental impacts in terms of visual impact and noise; however the careful siting of the substation away from sensitive receptors such as housing as well as sensitive landscaping and design will minimise the significance of these impacts.

The Ballyragget substation is located within Co. Kilkenny adjacent to the location of an existing substation. It is closer to, but outside the River Nore cSAC boundary.

### **5.2.3 Modifications to Existing Kilkenny Substation**

Due to the relatively minor and confined nature of the modifications required, this element of the Laois – Kilkenny Reinforcement Project is highly unlikely to have any additional significant impacts on the environment in the project study area.

### **5.2.4 Potential Impact of the Laois – Kilkenny Reinforcement Project as a whole**

The combined impact of the various elements of the project is not likely to result in any impacts above and beyond those described for each element of the project. Again, it should be noted that the Laois – Kilkenny Reinforcement Project is part of the Grid 25 Strategy which has been subject to a process of Strategic Environmental Assessment.

For completeness, this report will now assess the overall likely significant impact of the proposed development in accordance with a checklist provided in the Department of the Environment, Community and Local Government's EIA Guidance for Consent Authorities regarding sub-threshold development.

## 6 CHECKLIST OF CRITERIA IN RELATION TO SUB-THRESHOLD DEVELOPMENT

In order to assist the planning authority and other consent authorities in deciding if significant effects on the environment are likely to arise in the case of development below the mandatory EIA thresholds; the Minister of the Environment, Heritage and Local Government published a guidance document in August 2003 – ‘Environmental Impact Assessment (EIA) Guidance for Consent Authorities regarding Sub-threshold Development’.

This guidance document contains a checklist which has been designed to help competent/consenting authorities decide whether EIA is required based on the characteristics of the likely impacts of a project i.e. to decide whether the effects of a project are likely to be significant. The questions to be considered as part of this checklist include the following:

1. Will there be a large change in environmental conditions?
2. Will new features be out-of-scale with the existing environment?
3. Will the effect be particularly complex?
4. Will the effect extend over a large area?
5. Will there be any potential for transfrontier impact?
6. Will many people be affected?
7. Will many receptors of other types (fauna and flora, businesses, facilities) be affected?
8. Will valuable or scarce features or resources be affected?
9. Is there a risk that environmental standards will be breached?
10. Is there a risk that protected sites, areas, features will be affected?
11. Is there a high probability of the effect occurring?
12. Will the effect continue for a long time?
13. Will the effect be permanent rather than temporary?
14. Will the impact be continuous rather than intermittent?
15. If it is intermittent will it be frequent rather than rare?
16. Will the impact be irreversible?
17. Will it be difficult to avoid, or reduce or repair or compensate for the effect?

As a final review of the likely significant impact of the proposed Laois – Kilkenny Reinforcement Project, each of the questions listed above will be addressed in turn in the table which follows.

However, it is important to note that a number of these questions are more suitable for a ‘single site’ type of project and not necessarily for a linear project such as the project proposed. Hence some of the questions are not easily responded to with a clear ‘yes’ or ‘no’ and the detailed explanation should therefore be considered.

**1. Will there be a large change in environmental conditions?**

It is unlikely there will be any large change to baseline environmental conditions as a result of the proposed development. Due to the site and route selection approach of the new elements of the project, in accordance with EirGrid's 'Project Development and Consultation Roadmap', particularly sensitive environments have been avoided in favour of locations which are more environmentally robust.

Despite the care taken to avoid environmentally sensitive areas, there may be slight impacts to the baseline environment in areas of ecological significance and in relation to species of ecological significance. Following suggested mitigation, the potential ecological impacts of the proposed development are reduced to give at most an imperceptible negative impact at the local scale - this equally applies to the existing Ballyragget-Kilkenny 110kV overhead line.

In visual and cultural heritage terms the new overhead line (Ballyragget to Coolnabacky and also Coolnabacky to the existing 400kV overhead line) will represent a new visual feature in the environment; however it will not significantly change the character of the overall landscape where it is sited. The same is true for the development of the new Coolnabacky 400kV Substation which has been carefully sited to minimise adverse impacts on sensitive environmental receptors.

**2. Will new features be out-of-scale with the existing environment?**

The proposed overhead line element of the project will entail the construction of structures which are long established as part of Ireland's extensive 110kV and 400kV overhead line network.

The new features consist of overhead line structures consisting primarily of wooden polesets, with some steel angle masts, supporting three electrical conductors and two earthwires. The 1.4km of 400kV line on double circuit masts are located in an area where such structures already exist. There are existing structures along the proposed new line and the scale of these within the existing environment can be seen.

The proposed new substation at Coolnabacky will be sited and designed to minimise any potential visual and other environmental impacts that could arise.

The Ballyragget - Kilkenny and the Athy - Portlaoise lines will not deviate from the existing routes in terms of scale, character and sensitivity.

**3. Will the effect be particularly complex?**

The effects are reasonably predictable as there are many such overhead lines and substations throughout the country. In general terms, the effects of such lines on the environment, in particular in the areas of ecology and visual impact are known.

**4. Will the effect extend over a large area?**

The elements of the overall development are approximately 53km in length, however, approximately 22km of this comprises the uprating of an existing overhead line.

The linear nature of the overhead lines over a distance of 53km means that the potential effects which occur extend over a large linear area.

However, the potential visual effects reduce with distance from the line. Typically an area of only 50 – 150m either side of the overhead line is visually affected and these impacts can be minimised by careful route selection and siting of polesets and angle masts.

**5. Will there be any potential for transfrontier impact?**

The project will be confined to an area in the neighbouring administrative areas of Laois and Kilkenny County Council, both of which were consulted as part of the project development process. There is no potential for transfrontier impact.

**6. Will many people be affected?**

The siting of the new substations and the design and routing of the line will ensure that clusters of dwellings and towns will be avoided. However in the region of 164 landowners will be directly affected by having the project in the form of woodpoles or pylons directly on their lands. However 78 of these landowners already have structures on their land.

The substation at Ballyragget has been located on land that is owned by the ESB. The substation at Coolnabacky is located adjacent to a disused quarry which is sparsely populated. As such, not many people will be affected.

With regard to the overhead line elements of the project, the likely effects for people relate primarily to visual effects. The significance of effect will vary depending on the location of the receptor in relation to the overhead line.

**7. Will many receptors of other types (fauna and flora, businesses, facilities) be affected?**

As noted above the design has avoided clusters of dwellings and towns. Potential significant impacts on agriculture will be short term during construction.

Potential impacts on flora and fauna could occur if unmitigated. Potential impacts include those detailed below:

The Coolnabacky to Ballyragget 110kV line traverses the River Barrow and Nore cSAC at Boleybeg. However all structures are located in improved agricultural grassland habitat (outside of the designated site). There are two existing structures on the Ballyragget to Kilkenny 110kV line due for replacement that are located within or adjacent to the River Barrow and Nore cSAC. Both these structures are located within improved grassland habitat that is of low ecological importance. All other structures associated with the proposed development are located outside

of and removed from designated Natura 2000 sites.

There is potential risk to water quality during the construction phase should concrete or other harmful substances become entrained in surface water run-off and enter watercourses. Deteriorating water quality resulting from contamination events could have negative impacts on the qualifying aquatic Annex II species of the River Barrow and Nore cSAC.

The release of sediment may result in a buildup of silt in the river system leading to reduction in available, suitable freshwater pearl mussel habitat, crayfish habitat and spawning habitat for lamprey and salmon (a species that is intrinsically linked to the complex lifecycle of the Freshwater Pearl-mussel).

During construction works there is potential for direct short term disturbance to birds and mammals in the vicinity of the proposed works.

New overhead lines may adversely impact on sensitive bird species; however, Bird Surveys that were carried out over two seasons influenced the design of the line to avoid known crossings.

Careful route selection and siting of polesets and angle masts and normal mitigation measures arising from the Environmental and Appropriate Assessment processes will be implemented to minimise all potential impacts identified.

#### **8. Will valuable or scarce features or resources be affected?**

The careful siting of the new substations and the selection of the most suitable route corridor for the new overhead line element of the project has meant that areas of environmental significance and heritage features which are considered to comprise valuable or scarce features or resources in the area have been largely avoided.

A Natura Impact Statement (NIS) will be prepared for this project as the cSAC has been identified as vulnerable to significant impacts - mitigation will then reduce the potential of significant impacts.

Following suggested mitigation, the potential ecological impacts of the proposed development are reduced to give at most an imperceptible negative impact at the local scale.

#### **9. Is there a risk that environmental standards will be breached?**

The types of environmental standards which are considered relevant to this project relate to elements which can be measured such as Electro Magnetic Fields (EMF), noise emissions, water emissions, etc.

These can be measured and controlled to ensure the project is constructed and operated within standards.

Adverse impacts on water quality during the operational phase of the project are not foreseen due to standard best practice measures being employed during any maintenance operations. Potential adverse impacts on water quality during construction will be mitigated by implementation of normal mitigation measures arising out of the Environmental and Appropriate Assessment processes.

**10. Is there a risk that protected sites, areas, features will be affected?**

The siting of the new Coolnabacky substation and the selection and design of the new overhead line route has been cognisant of risks with regard to potential effects upon protected sites, areas and features and has been selected and designed to avoid sensitive environmental receptors (including sites, areas and features).

There is potential for small scale direct habitat disturbance where the proposed Coolnabacky to Ballyragget 110kV line crosses the River Barrow and River Nore cSAC at Boleybeg. The design of the project has avoided placing structures within the cSAC. Some tree topping may be required at the river crossing. Improved Agricultural Grassland (GA1) surrounds the narrow riparian zone at this location. The river banks are defined by non-continuous lines of trees and shrubs that include Alder (*Alnus glutinosa*) and Ash (*Fraxinus excelsior*). The terrestrial habitats present at this location do not correspond with qualifying habitats for which the cSAC is designated. Based on the habitats recorded in the vicinity of the cSAC, it is concluded that this potential impact will not adversely affect the conservation interest of the cSAC.

The River Nore SPA is located approximately 350 m West of Ballyragget Substation at its nearest point.

The existing Ballyragget to Kilkenny line crosses the River Barrow and River Nore cSAC at two locations at Jenkinstown, just upstream of New Dinin Bridge. A single poleset (Structure BK49) that requires replacement is located within the cSAC at this location, while a second poleset (Structure BK48) is located adjacent to the cSAC. The design of the project has allowed for the replacement polesets to be constructed further South (Structure BK49) and North (Structure BK48) respectively and therefore increases the distance between the structures and the semi-natural habitats of the cSAC. Works in this area may cause local disturbance and loss of improved grassland habitat. Based on the terrestrial habitats recorded in the vicinity of the cSAC, it is concluded that this potential impact will not adversely affect the conservation interest of the cSAC.

This will be addressed in a Natura Impact Statement.

**11. Is there a high probability of the effect occurring?**

There is a high probability of visual effects occurring within an area of 50 – 150 metres either side of the overhead lines and in close proximity to the new Coolnabacky substation. These visual effects are a residual effect, following a route selection process which has identified, and has sought to avoid, the more sensitive visual receptors.

There is a lesser probability of other effects (such as ecology) occurring as there are works in or close to the cSAC and a Natura Impact Statement will be prepared. Following suggested mitigation, the potential ecological impacts of the proposed development are reduced to give at most an imperceptible negative impact at the local scale.

**12. Will the effect continue for a long time?**

The residual visual effects of the overhead line will be permanent. Other effects associated with the development will be absorbed by the environment and will not be discernible over time. The potential impacts associated with the construction phase of the proposed development are likely to be short lived in nature.

**13. Will the effect be permanent rather than temporary?**

Permanent as stated above relating to the local visual impact.

**14. Will the impact be continuous rather than intermittent?**

Any residual construction impacts will be temporary and will cease on completion of construction.

Potential operational impacts will be continuous in relation to local visual impact although this by definition will be localised for the extent of the line and around the substation. Potential operational impacts in relation to ecology (for example bird collision) will be intermittent and again has been minimised by appropriate siting and routing of the infrastructure, following a series of Winter Bird surveys in the area.

**15. If it is intermittent will it be frequent rather than rare?**

Intermittent impacts are likely to be rare as the design of the line has avoided known flight paths and mitigation measures - including route selection and bird deflectors - are designed to reduce bird collisions.

**16. Will the impact be irreversible?**

There will be instances where some impacts will be irreversible if they occur (i.e. bird deaths due to collision – however bird deaths are not common and have been assessed). All other impacts are reversible with the decommissioning of the line.

**17. Will it be difficult to avoid, or reduce or repair or compensate for the effect?**

The project design has already sought to avoid potential effects through careful siting of the new overhead line and substations, and to reduce potential effects by incorporating mitigation measures into the design.

The NIS will address suitability of mitigation measures to ensure no likely significant impact on ecological receptors.

# APPENDIX 1: OVERALL DEVELOPMENT POTENTIAL RATING MAP

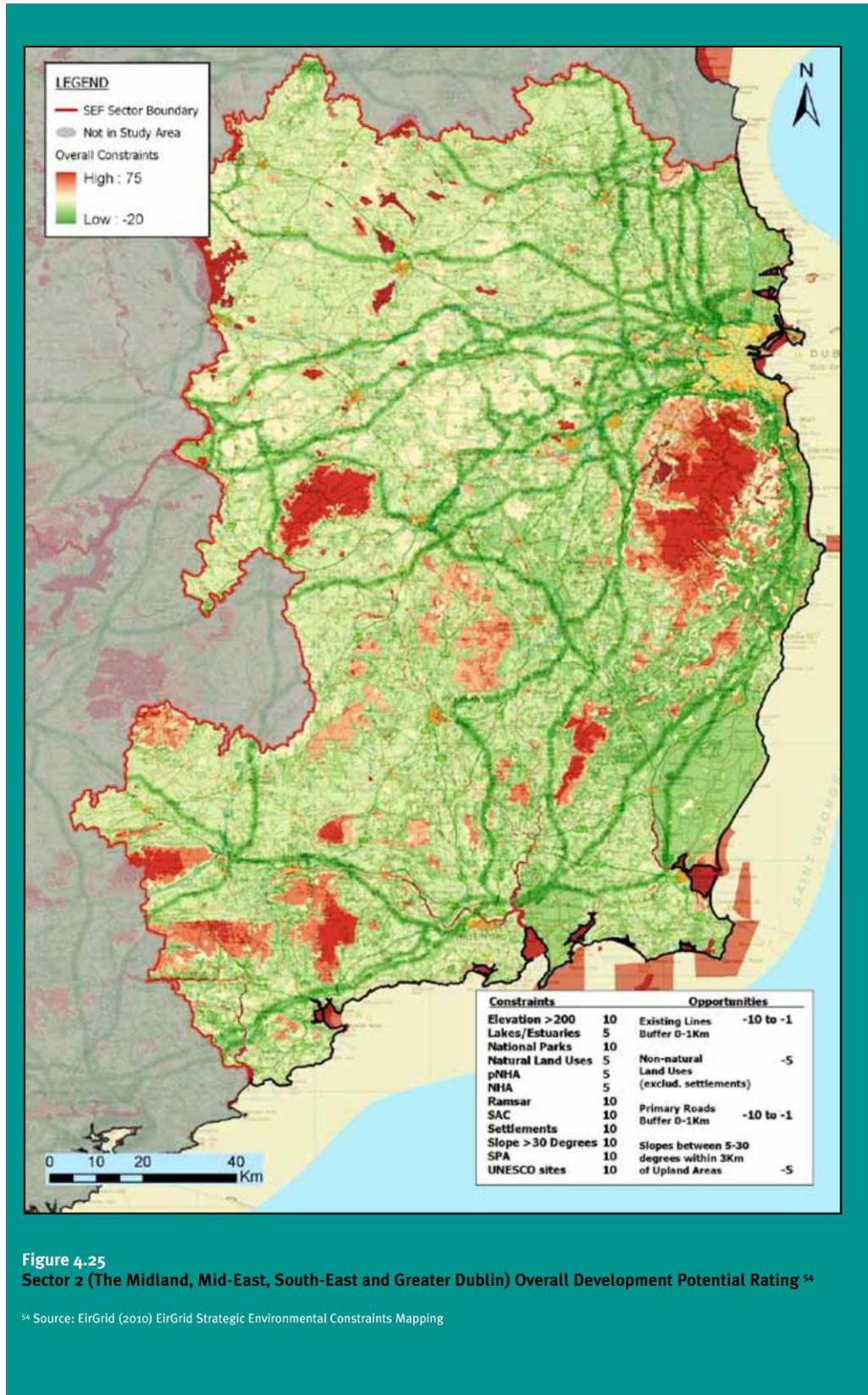


Figure 4.25 Sector 2 (The Midland, Mid-East, South-East and Greater Dublin) Overall Development Potential Rating <sup>54</sup>

<sup>54</sup> Source: EirGrid (2010) EirGrid Strategic Environmental Constraints Mapping