

Grid Implementation Plan
2017-2022
Non Technical Summary of
Strategic Environmental
Assessment -
Environmental Report



**Non-Technical Summary: Strategic Environmental
Assessment Environmental Report**

GRID Implementation Plan 2017-2022

Project No: 32106700
Document Title: Strategic Environmental Assessment - Environmental Report (Updated)
Document No.: 32106700_SEA_05
Revision: Updated following public consultation
Date: December 2018
Client Name: EirGrid
Client No: EirGrid
Project Manager: RMcD
Author: SMG/GQ/RV

Jacobs Engineering Ireland Limited

*Merrion House
Merrion Road
Dublin D04 R2C5
Ireland
T +353 1 269 5666
F +353 1 269 5497
www.jacobs.com*

© Copyright 2018 Jacobs Engineering Ireland Limited. The concepts and information contained in this document are the property of Jacobs. Use or copying of this document in whole or in part without the written permission of Jacobs constitutes an infringement of copyright.

Limitation: This report has been prepared on behalf of, and for the exclusive use of Jacobs' Client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the Client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

Consultation on the SEA

Consultation has been undertaken on the draft Grid Implementation Plan (Grid IP) and Strategic Environmental Assessment (SEA) and Appropriate Assessment (AA) documents to ensure that the knowledge, experience and views of stakeholders and the general public was considered at all stages of the development of the Grid IP and SEA.

The draft Grid IP has been amended along with the SEA and AA documents in response to comments received during the consultation period and the influence of the SEA and consultation process is set out in the SEA statement. A copy of the final Grid IP and the associated environmental reports, and Natura Impact Statement (NIS) are available via the EirGrid website as indicated below.

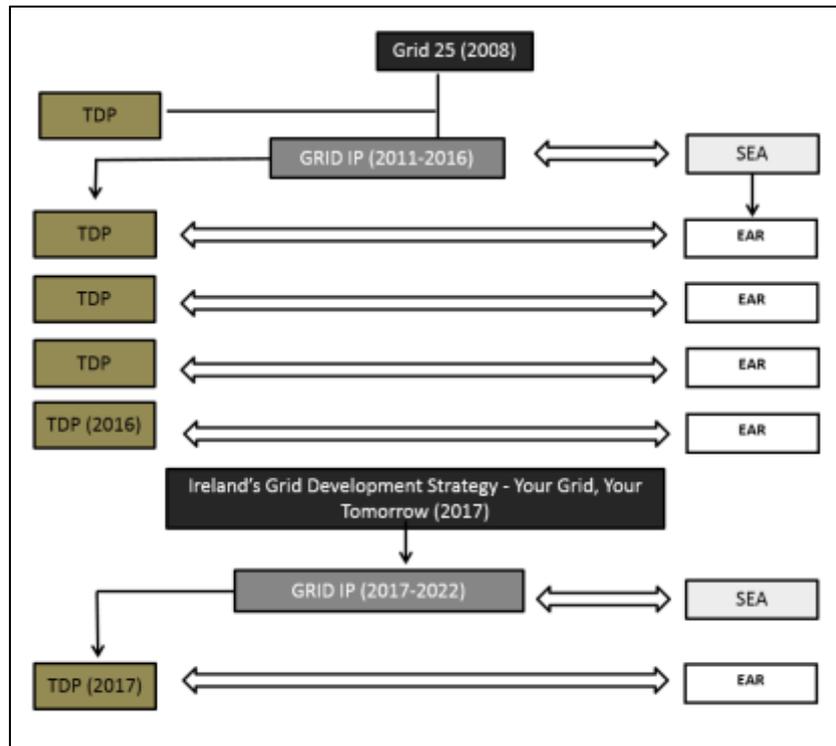
www.eirgridgroup.com

Non-Technical Summary

Introduction

Strategic Environmental Assessment (SEA) is a process that aims to provide a high level of protection to the environment, integrating environmental consideration into the preparation and adoption of plans. It promotes sustainable development for plans. This Environmental Report sets out the high-level assessment that has been undertaken for the Grid Implementation Plan 2017-2022 (Grid IP). The findings of the assessments are published with the Grid IP and a Natura Impact Statement (NIS) for public comment.

The transmission system in Ireland, also known as 'the grid', refers to the high voltage electricity network and is made up of a network of electrical substations, power lines and underground cables. EirGrid is responsible for operating and maintaining a safe, secure, reliable, economical and efficient transmission system. EirGrid develops projects which are fundamental to continued social and economic development in the Republic of Ireland. ESB Networks are responsible for the construction of the grid as identified by EirGrid.



Grid Implementation Plan

The Grid IP identifies, at a strategic level, parts of the transmission system that are likely to be developed over the next six years. It identifies the issues, policies and objectives that will guide in developing the grid. It also provides a list of projects envisaged to be developed over the cycle of the plan. The Grid IP covers the five-year period from 2017 up to 2022. The Environmental Report was published alongside the draft Grid IP for public consultation and has now been amended in light of the comments received.

The Grid IP covers the Republic of Ireland, however the Grid IP and the SEA documents have carefully considered grid development, and likely significant environmental effects of a transboundary nature, including the various existing and planned electricity interconnectors between Ireland, Northern Ireland, Great Britain and France.

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

EirGrid Strategy Statements (2017):

We will optimise the existing grid to minimise the need for new infrastructure.

We will consider all practical technology options.

Inclusive consultation with local communities and stakeholders will be central to our approach.

Grid IP Objectives

The overall objectives of the Grid IP are to:

- Support the continued development of a safe secure and reliable transmission system in Ireland. This is largely based on *Ireland's Grid Development Strategy; Your Grid, Your Tomorrow*.
- Review the first Grid IP (Grid25 Implementation Plan 2011-2016) published in 2012 and to update it in the context of the Strategy, policies and processes that have been developed in the interim.
- Examine the successes and challenges encountered in delivering the previous IP and to integrate the lessons learned into the new IP.
- Identify and examine the high level environmental, social, technical, project development, planning and consenting matters for grid development. To draft policies and objectives that will ensure these issues are considered in grid development undertaken during the Grid IP period.
- Examine the transmission infrastructure projects that are likely to be developed during the Grid IP period. These projects are taken from the adopted Transmission Development Plan 2016-2026 (TDP 2016-2026). This was the active Transmission Development Plan at the time of drafting this Environmental Report.

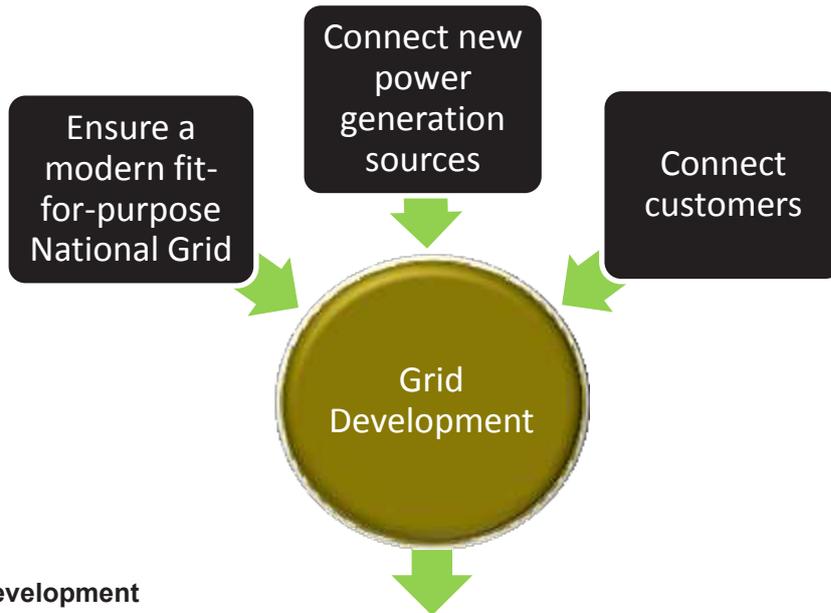
Grid IP Content

EirGrid have included a series of plan policies and objectives within the Grid IP to ensure that the environmental issues are considered in the process of Grid development and that Natura 2000 sites are protected. These policies and objectives are based on six categories as follows:

- Environment;
- Technology;
- Project Development;
- Planning and Consenting of Projects;
- Consultation and Engagement; and
- Human Beings and Society.

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

The Grid IP outlines several future grid development projects. The key drivers behind grid development is shown below, along with the various project types that support this development. Many of the projects outlined within the Grid IP are in line with the EirGrid strategy related to optimising the existing grid.



Drivers for Grid Development

New Build (NB) Construction of new infrastructure	Uprate (U) Upgrading existing infrastructure to higher specifications	Modify (M) A modification of existing assets	Refurbish/ Replace (R/R) Maintenance of existing assets	Redevelopment (RD) Redevelopment of assets due to the condition and age
---	---	--	---	---

Alternatives

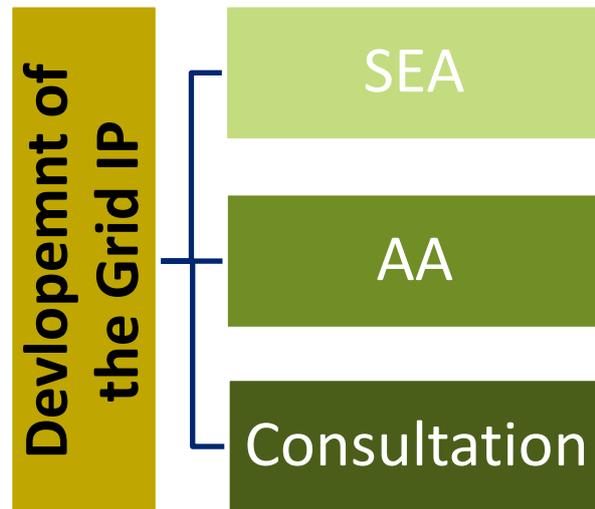
As required by the SEA Directive, alternatives were considered, taking account of the objectives and geographical scope of the Grid IP, and with a view to identifying potential ways that EirGrid could achieve an appropriate and sustainable approach to the planning and consenting of transmission projects. In this regard alternatives were considered across three areas; namely plan level, scenario planning and project level alternatives.

In terms of the plan assessment, a No Plan / no development alternative was initially considered. However, this was not deemed a reasonable alternative, which would allow EirGrid to meet their legal obligations as a Transmission System Operator and on this basis, was not considered further. Three plan alternatives were then considered and it was determined that the Grid Implementation Plan 2017-2022 as proposed was the preferred alternative. Whilst the implementation of the Grid IP could result in some negative environmental impacts, in general the implementation of Grid IP in compliance with its specified policies and objectives would likely result in overall stronger positive effects.

Strategic Environmental Assessment

SEA is required under EU Legislation (known as the SEA Directive) and is a process of predicting and evaluating the likely significant environmental effects of certain plans and programmes “subject to preparation and/or adoption by a national, regional or local authority OR prepared by an authority for adoption through a legislative procedure by Parliament or Government”.

The Grid IP ‘screened in’ for SEA considering that EirGrid is a semi-state company that reports to the Commission for Regulation of Utilities (CRU) who perform their functions on behalf of the Department of Communications, Energy and Natural Resources (DCENR). EirGrid can be considered to act as the “competent authority” under the SEA Directive and Regulations 2004 (S.I. No. 435 of 2004) for the purpose of this Plan. The plan however is not formally adopted through a legislative procedure by the Government, rather through an internal adoption process by EirGrid.



The process of SEA and Appropriate Assessment (AA) and associated consultation have been ongoing throughout the development of the Grid IP.

This SEA process aims to:

- Ensure that likely significant environmental effects are identified and evaluated during the plan development.
- Ensure that any significant environmental effects identified are considered in the plan development process so that the Plan can be developed with regard to these, and/or mitigation measures put in place to avoid or reduce any potential environmental effects of development from the Grid IP.
- The process ensures that the effectiveness of mitigation measures is monitored during the Plan’s lifetime.
- It also ensures that decisions are made in conjunction with stakeholder and public involvement.

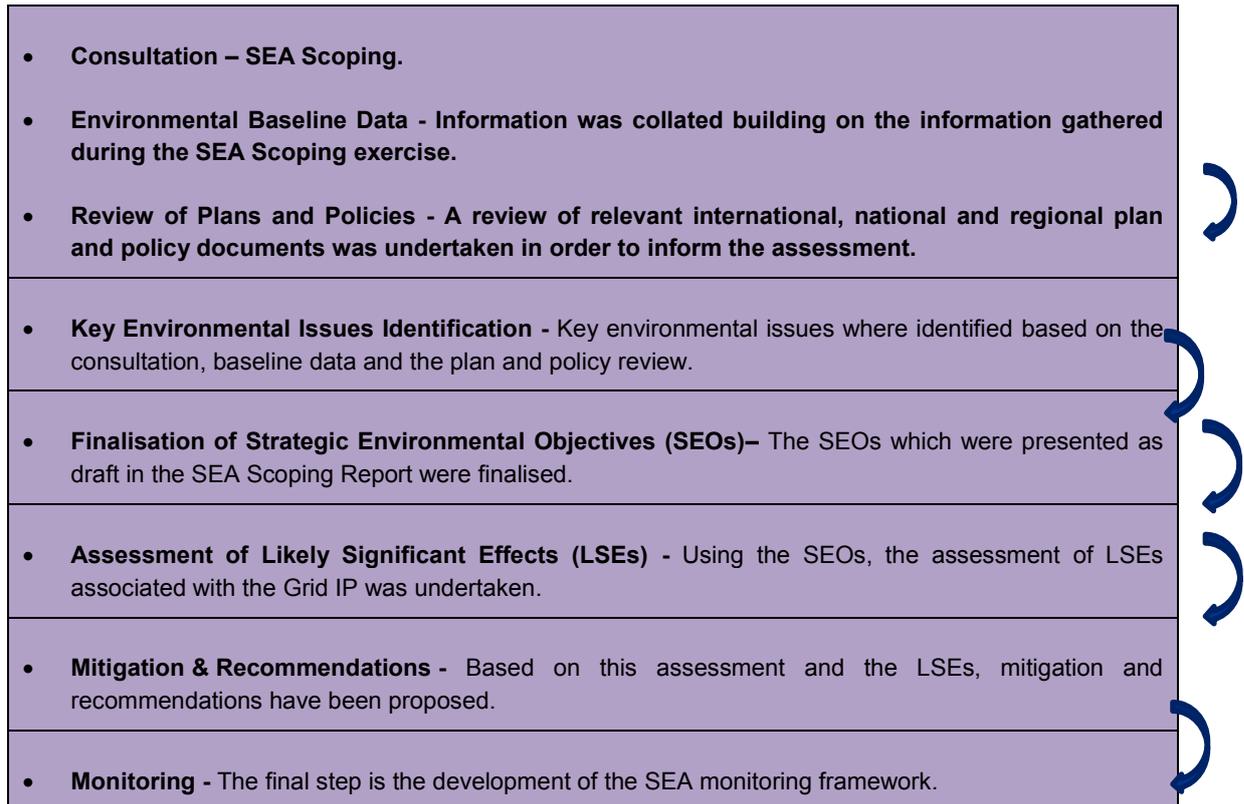
The stages of the SEA process include:

- **Stage 1 – Screening** (deciding whether SEA is required).
- **Stage 2 – Scoping** (establishing the scope of the assessment).
- **Stage 3 – Identification, Prediction, Evaluation and Mitigation of likely significant effects;** and

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

- **Stage 4 – Consultation, Revision and Post-Adoption.**

This SEA Environmental Report has been completed as part of Stage 3 of the SEA process as outlined below:



The Grid IP was published in 2018. An SEA Statement has been published alongside the final Grid IP, setting out how the SEA and any consultation responses has influenced the SEA and the Grid IP.

Appropriate Assessment (AA)

There is also a requirement for the Grid IP to meet the requirements of the EU Habitats Directive. Full detail of that assessment is included in an NIS for the Grid IP. AA examines the direct and indirect effects of the draft (and final) Grid IP or project, either individually or in-combination with other plans and projects on European protected sites, part of the Natura 2000 Network of Special Areas of Conservation (SAC) and Special Protection Areas (SPAs). The process is to ensure that the Grid IP will not result in adverse effects on the integrity of the Natura 2000 Network of sites.

Consultation

The public consultation on the Grid IP and accompanying SEA Environmental Report and NIS is the key process for stakeholders and the general public to influence the environmental context of the final Grid IP and SEA documents. Following completion of the consultation period, all responses received have been considered, and amendments made to the Final Grid IP. An SEA Statement, which documents how

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

feedback from the public consultation has been addressed in the final Grid IP and SEA documents, has been published by Eirgrid.

Baseline Information - Current State of the Environment & Future Trends

Full details of the current state the environment (as relevant to the Grid IP) and future trends (that is, how the baseline may be expected to change), is provided in the main SEA Environmental Report and presented in summary below.

Theme	Current condition	Future Trends (Evolution of the Baseline)
Population, Human Health & the Economy	<ul style="list-style-type: none"> The population is on the increase (currently 4.7 million) a trend within most counties in Ireland. Overall, the health of the population is generally 'Good' to 'Very Good' based on a recent national health survey. The Irish economy is undergoing recovery since the "crash" of 2008. 	<ul style="list-style-type: none"> The population of Ireland is projected to increase to over five million by 2031. Life expectancy in Ireland has increased and with an ageing population, the health of Ireland will continue to place pressure on the health care systems. Investment in infrastructure will continue through the governments Capital Investment Plan. The government has targeted 200,000 additional jobs by 2020.
Biodiversity, Flora & Fauna	<ul style="list-style-type: none"> There are several international and national protected sites in Ireland. Almost 80% of the protected habitat are inadequate or bad status. Over 50% of the protected species are at favourable status. Invasive species can have a significant negative effect on wildlife and habitats. 	<ul style="list-style-type: none"> Land-use change such as urbanisation, are likely to continue to pose risks to habitats and species. Continued conservation initiatives and legislation will help protect biodiversity resource going forward. Invasive species are likely to remain threat to biodiversity.
Landscape & Visual Amenity	<ul style="list-style-type: none"> There is no national level landscape mapping for Ireland. There are several county level protected landscape feature in Ireland. 	<ul style="list-style-type: none"> The existing landscape is not expected to change significantly in the immediate future. As part of the National Landscape Strategy a National Landscape Character Assessment will be developed.
Cultural Heritage - Archaeology & Architectural	<ul style="list-style-type: none"> There are a number of national level protected cultural heritage feature in Ireland. These are afforded strict protection under national legislation. 	<ul style="list-style-type: none"> The existing cultural heritage environment is not expected to change significantly in the immediate future.
Geology and Soils	<ul style="list-style-type: none"> Ireland consists of a central limestone plain that is surrounded by coastal mountains. 	<ul style="list-style-type: none"> Soil loss and degradation is recognised as a major challenge across Europe.

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

Theme	Current condition	Future Trends (Evolution of the Baseline)
	<ul style="list-style-type: none"> Soil quality in Ireland is regarded as generally good. There is no legislation solely directed to soil protection in Ireland. 	
Land use	<ul style="list-style-type: none"> The total land area of Ireland is almost 7 million hectares and agriculture accounts for two-thirds of this landmass cover. The main changes to land use in Ireland have seen a decrease in agricultural land and peatland areas and an increase to forested land and artificial areas. Forested areas cover about one-tenth (9.2%), much of which consists of commercial plantation of conifers, owned by Coillte. 	<ul style="list-style-type: none"> Initiatives such as Food Harvest 2020 (which aims to increase Irish agri-food export by 2020). The Irish Government has made a commitment to increase the forest area to 17% of the total land area by 2030.
Water	<ul style="list-style-type: none"> The current quality of water in Ireland is considered among the best in Europe but there is still improvement needed. Flooding, particularly from fluvial and coastal sources, is an increasing problem in Ireland. 	<ul style="list-style-type: none"> Ireland will continue to seek improvements in water quality. Several flood management projects rolled out across the country as outlined under the recent Flood Risk Management Plan.
Material Assets & Infrastructure	<ul style="list-style-type: none"> There are numerous national Assets such as roads, rail, port and airport in Ireland. Electricity generation includes, gas, coal, hydro, thermal, pumped storage generation and wind generation. 	<ul style="list-style-type: none"> Investment in infrastructure will continue through the governments Capital Investment Plan.
Tourism & Recreation	<ul style="list-style-type: none"> International tourism has increased in recent years with approximately 25 million passengers passed through Dublin airport in 2015. 	<ul style="list-style-type: none"> Tourism number are expected to increase into the future.
Climate Change	<ul style="list-style-type: none"> Ireland's Green House Gas (GHG) emissions, per capita were the tenth highest in Europe in 2014. 	<ul style="list-style-type: none"> The report outlines that to achieve the 2020 emissions targets (20% below 2005 levels), continuous reductions are required.

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

Other Plans and Policies

The SEA requires a review of other plans and policies (PP) to identify potential relationship¹ between the Grid IP objectives and these other PPs. Some key PP are:

- Ireland's Grid Development Strategy, Your Grid, Your Tomorrow: 2017
- A National Landscape Strategy for Ireland (NLS).
- The Habitats Directive (92/43/EEC).
- The Birds Directive (2009/147/EC).
- Environmental Impact Assessment Directive (2014/52/EU) and associated Irish legislation.
- Ireland 2040 Our Plan - National Planning Framework.
- Transmission Development Plan (TDP).
- Strategic Environmental Directive (2001/42/EC) and associated Irish legislation.

A review of relevant national and regional plan and policy documents was undertaken to inform the key environmental issues, and to ensure that the requirements of these plan and policy documents are fully addressed by the policies and objectives set out in the Grid IP.

SEA Objectives

Strategic Environmental Objectives (SEOs) are measures developed from policies which are used to guide environmental protection. The SEOs are used as standards against which the Grid IP can be assessed in order to identify any likely significant environmental effects.

Theme	Objective
Population, Human Health & the Economy	PHH1: To minimise the proximity of development to concentrations of population and to mitigate potential effect of development in order to reduce actual and perceived environmental effects.
Biodiversity, Flora & Fauna	B1: Ensure compliance with the Habitats Directive with regard to protection of designated European Sites including Article 10.
	B2: Avoid significant impacts on protected habitats, species, environmental features or other sustaining resources in and outside designated Wildlife Sites (including but not limited to NHAs and pNHAs).
Landscape & Visual Amenity	L1: Avoid significant adverse impacts on landscape character and designations.
	L2: Avoid or minimise adverse visual effects on residential receptors.
Cultural Heritage - Archaeology & Architectural	CH1: Avoid impacts upon archaeological heritage (including entries to the RMP) and architectural heritage (including entries to the RPS and NIAHs).
Geology and Soils	GSL1: To avoid or minimise effects on mineral resources or soils.
Land use	LU1: To avoid or minimise effects on existing land use.

¹ SEA Directive – “an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;”

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

Theme	Objective
Water	W1: Prevent impact upon the status of surface and groundwater in line with the objectives of the WFD as outlined in the River Basin Management Plan.
Material Assets & Infrastructure	MAI1: Minimise effects upon the sustainable use of the land, mineral resources or soils.
	MAI2: Minimise effects upon the existing and planned infrastructure.
Tourism & Recreation	TR1: Minimise effects upon the tourism and recreation amenities.
Climate Change	CC1: Help to facilitate the achievement of higher level targets contained in the Government's Energy White Paper, 'Ireland's Transition to a Low Carbon Energy Future 2015-2030' and targets relating to the Kyoto Protocol.

Assessment of the Grid IP

Inherent Mitigation

Projects outlined within the Grid IP will be subject to a range of statutory, and non-statutory mitigation measures (namely, EirGrid in-house processes and procedures) that will work to avoid or mitigate any potential environmental effects of development from the Grid IP. While the applicability of particular processes and measures will be dependent on the nature and scale of each project, examples of typical inherent mitigation that will be implemented at the different stages of project implementation include:

- **Statutory Requirements** - These are related to the various planning routes that a potential grid development project is subject to and the associated assessments such as Environmental Impact Assessment (EIA).
- **EirGrid in-house processes and procedures** – EirGrid internal processes such as the project guidelines and the six-step framework for Grid development.
- **Best Practice construction requirements** – Industry guidance on undertaking construction projects.

The assessment of LSEs has been undertaken with the assumption that these inherent mitigation measure are, and will be, in place for development proposed in the Grid IP.

Policies and Objectives

Over 50 policies and objectives outlined in the Grid IP have all been assessed against the SEOs, and overall the policies and objectives within the Grid IP are positive in nature, seeking to:

- Serve the **electricity needs** of the county in a sustainable manner;
- **Avoid and mitigate** environmental effects;
- Promote the **use of existing grid infrastructure**;
- **Implement and improve** existing internal guidance, processes and procedure for development;
- Incorporate **social impact assessment** into the grid development process;
- Promote **new technologies** in transmission infrastructure development;
- Increase transparency and **public participation** in the grid development process;

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

- Contribute to Irelands achievement of its **renewable energy targets**;
- Contribute to **combating climate change**; and
- Support the **EPA key actions** outlined in their 2016 State of the Environment Report.

Transmission Development Projects

Over 40 transmission development projects contained within the Grid IP were assessed against the SEOs. With the application of inherent mitigation, the likelihood of significant effects from Grid projects are reduced however the possibility of limited significant effects cannot be ruled out completely.

The SEA Directive requires that where the Grid IP has potential for transboundary environmental effects these must be addressed within the SEA. The Grid IP relates to grid development in Northern Ireland as the transmission system is being developed as an all-island system and deals with electricity interconnectors between Great Britain and France. As such, the Grid IP (and SEA/AA) has considered potential transboundary effects in these regions.

Consultation was undertaken via the SEA Scoping Report with the Northern Ireland Environment Agency (NIEA), the Ministry of the Environment (Ministère de l'Environnement, de l'Énergie et de la Mer) in France and the Welsh government. A copy of the draft Grid IP, this Environmental Report and NIS have also been made available to these transboundary consultees.

Cumulative and in-combination effects between projects within the Grid IP and other projects was considered. The assessment determined that in general, there were no anticipated significant cumulative or in-combination effects. Where significant effects were considered likely, it was concluded that with the implementation of the recommendations from this Environmental Report and the measures from the NIS, these effects would be reduced or avoided.

Data Gaps and Limitations

This SEA is being undertaken using best available data and methodologies at the time of assessment. However, there remain some data gaps and limitations which limit the scope and content of the assessment, including:

- This baseline description is not intended to be an exhaustive description of all baseline environmental data.
- The lack baseline data to cover all SEA aspects/issues, such as landscape character assessment designations across some development areas.
- The Grid IP has reference to the adopted Transmission Development Plan (TDP) of 2016-2026 and the SEA has not influenced the list of projects. Mitigation measures and monitoring measures have been developed however and integrated into the Grid IP.
- As the projects referenced in the Grid IP are based on the adopted TDP 2016-2026 new projects may arise over the lifetime of the IP. The system of environmental appraisal for each annual TDP ensures that a high level of environmental assessment is undertaken annually in line with provisions set out in the SEA and NIS.

Non-Technical Summary: Strategic Environmental Assessment Environmental Report

- The nature of the process of Grid development is that for several projects, the details are relatively undeveloped. The need for projects is identified but specific elements are not known such as the location or technology to be used.

SEA Mitigation and Recommendations

Recommendations have been provided to strengthen the Grid IP policies and objectives, and all recommendations have been accepted by EirGrid and have been integrated into the final Grid IP document. The 2018 SEA framework will also provide the basis for the assessment in Environmental Appraisal Report of the next TDP (2018-2028).

SEA Monitoring

The SEA Monitoring Framework has been proposed to monitor and manage the potential significant negative effects and any unforeseen effects of the Grid IP. Monitoring will be undertaken for all aspects including:

- Population, Human Health & the Economy;
- Biodiversity, Flora & Fauna;
- Landscape & Visual Amenity;
- Cultural Heritage (Archaeology & Architectural);
- Water;
- Material Assets & Infrastructure (including soil and landuse);
- Tourism & Recreation; and
- Climate Change.

Conclusion

The Grid IP identifies the best current understanding of those parts of the transmission system that are likely to be developed over the next six years and identifies the issues, policies and objectives that will be addressed in developing the Grid. All projects within the Grid IP will be subject to the appropriate planning requirements. In addition, consideration of the potential environmental effects will also be undertaken during the selection of the preferred technology, and locational solutions for each project, and these will be subject to the policies and objectives set out in the Grid IP.

It is considered that the Grid IP, the objectives and policies within the Plan, and the mitigation proposed as part of the SEA will contribute to the sustainable development of the transmission system in Ireland over the next six years and beyond. There is a focus on using the existing network as far as is reasonably practical, thus reducing potential negative effects on the environment, and contributing to sustainable development.



The Oval, 160 Shelbourne Road, Ballsbridge, Dublin D04 FW28 • Telephone: 01 677 1700 • www.eirgrid.com



Printed on recycled paper