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1 Introduction and Background

1.1 Introduction

Ove Arup & Partners Ireland Ltd (Arup) has been appointed by Greenlink Interconnector Limited (GIL) to prepare this Environmental Impact Assessment Report (EIAR). This EIAR will support applications to enable the construction, operation, maintenance and decommissioning of a new electricity interconnector, known as 'Greenlink'. This EIAR has been prepared in compliance with the Environmental Impact Assessment Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU). The purpose of the EIAR is to provide a statement of significant effects which the proposed development, if carried out, would have on the environment.

GIL is proposing to develop Greenlink, linking the existing electricity grids in Ireland and Great Britain. Greenlink will consist of two converter stations, one close to the existing substation at Great Island in County Wexford, in Ireland, and one close to the existing substation at Pembroke in Pembrokeshire, in Wales. The converter stations will be connected by underground cables (onshore) and subsea cables (offshore).

1.1.1 The Project so far

Greenlink is designated as a European Union Project of Common Interest (PCI), under the provisions of European Union Regulation No. 347/2013 on guidelines for Trans-European Network for Energy ('TEN-E Regulation'). It has been given project reference number 1.9.1. GIL has received funding for Greenlink under the Connecting Europe Facility (CEF). GIL was granted an Interconnector Licence for Greenlink in Great Britain, by Ofgem (the United Kingdom's Government regulator for gas and electricity markets), on 10th February 2015. Greenlink was awarded Initial Project Assessment (IPA) Status under Ofgem's Cap and Floor Regime on 30th September 2015. Ofgem's Cap and Floor Regime is a scheme to encourage the development of interconnectors to Great Britain by reducing the financial risks.

In Wales, a connection agreement has been signed with National Grid Electricity Transmission plc for a grid connection at the existing Pembroke substation. National Grid Electricity Transmission plc owns and manages the high voltage electricity transmission network in England and Wales.

In Ireland, a connection agreement has been signed with EirGrid, the high voltage electricity transmission network operator in Ireland, for a grid connection at the existing Great Island substation.

This chapter has been prepared by Simon Grennan and Dan Garvey of Arup. A description of the authors' qualifications and experience is presented in **Appendix 1.1**.

1.2 The Project

The project comprises subsea and underground cables and associated converter stations to connect EirGrid’s Great Island 220kV substation in County Wexford (Ireland) and National Grid’s Pembroke transmission substation in Pembrokeshire (Wales). These components are illustrated in Figures 1.1 and 1.2.

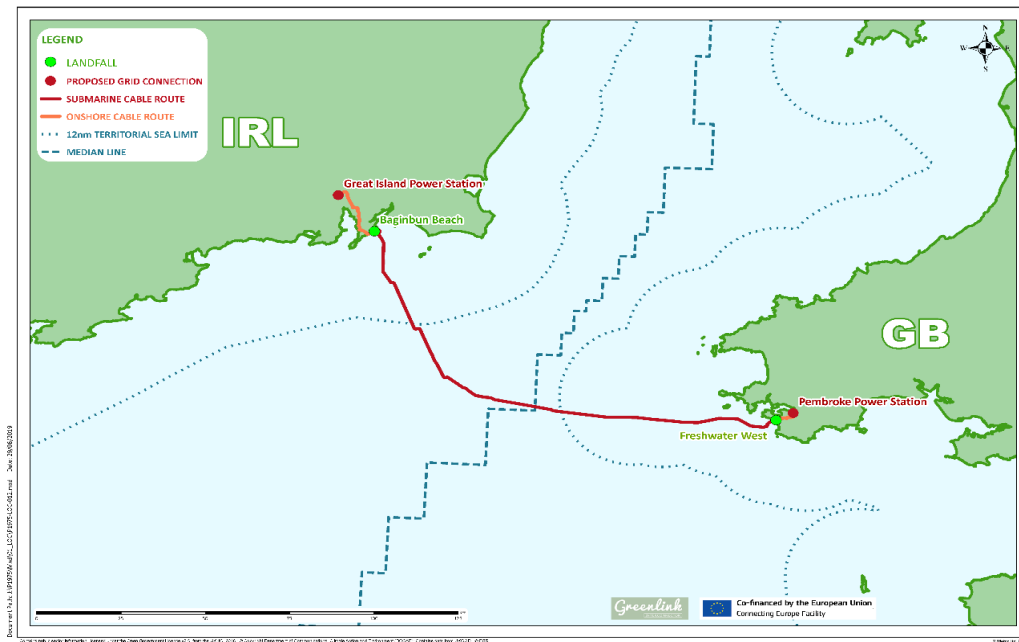


Figure 1.1 Greenlink Overview | not to scale

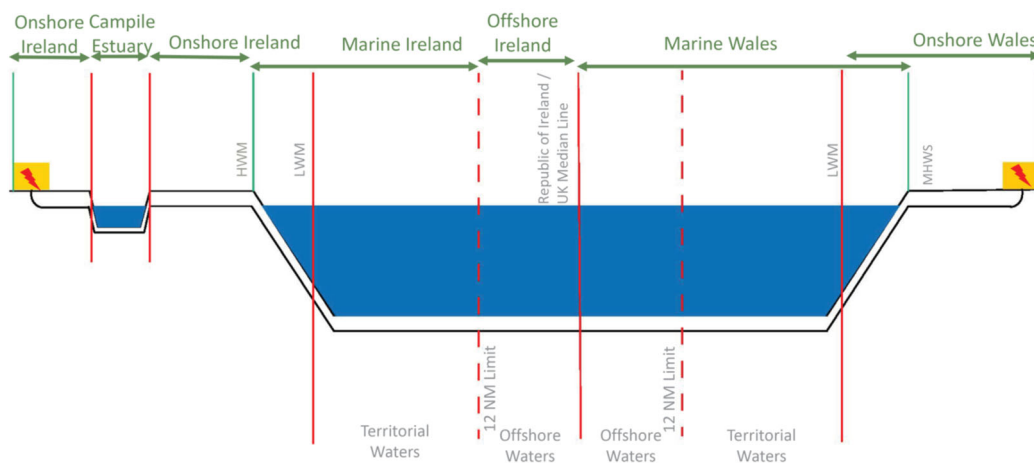


Figure 1.2 Greenlink Components | not to scale

Arup has been appointed by Greenlink Interconnector Limited to prepare this EIAR to ensure that likely significant environmental effects associated with the proposed electricity interconnector development are identified and adverse effects are minimised. This report focuses specifically on the onshore elements in Ireland. Cumulative, transboundary and interactive effects with the onshore elements in Wales and the offshore elements in both Ireland and Wales are also fully addressed and described in **Chapter 18 Cumulative, Transboundary and Interactive Effects**.

Key Definitions for this EIAR

The Project: all elements in Ireland, offshore and in Wales

The Proposed Development: the elements of the project onshore in Ireland

‘Onshore’ Ireland: is the land above the foreshore, i.e. the land above the high water mark of ordinary or medium tides, indicated as HWM on Ordnance Survey Maps.

1.3 The Proposed Development

This EIAR addresses the Onshore Ireland components of Greenlink, hereafter referred to as the ‘Proposed Development’, which consists of the following permanent and temporary elements:

The proposed development (encompassing the onshore elements in Ireland only) will comprise:

Landfall Compound - a temporary landfall compound at Baginbun, where the high voltage direct current (HVDC) cable will be installed underground, below the beach and cliff at Baginbun Beach, by horizontal directional drilling (HDD);

HVDC Cables - two HVDC electricity cables with a nominal capacity of 500 megawatts (MW), installed underground from the landfall at Baginbun to the converter station, including jointing bays and ground level marker posts at intervals along the route;

Converter Station - a converter station situated close to the existing Eirgrid 220kV Great Island substation in Wexford;

Tail Station - a 220kV Loughtown substation located beside the converter station. The Loughtown tail station connects the HVAC 220kV cable into the 220kV grid via the existing Eirgrid Great Island substation;

MV Substation - an ESB MV substation building located outside the converter station and tail station perimeter fences but within the land holding. This substation will provide the MV and LV connections required for the development;

Converter Station Construction Compound: temporary compound for the construction of the converter station and tail station at Great Island;

Cable Contractor Compounds - three temporary cable contractor compounds will be required (i) at the landfall site close to Baginbun Beach (ii) at the

proposed converter station and (iii) one along the onshore route in the townland of Lewistown;

HDD Compounds - temporary HDD contractor compounds are required. One will be located close to the cable contractor compound at Baginbun Beach with another HDD compound located at either side of the Campile River Estuary crossing;

High Voltage Alternating Current (HVAC) Cables - one 220 kV HVAC electricity cable circuit consisting of three cables, installed underground connecting the converter station via the Loughtown tail station to the existing EirGrid substation;

Fibre Optic Cables - fibre optic cables for operation and control purposes, laid underground with the HVDC and HVAC cables;

Community Gain Roadside Car Parking near Baginbun Beach - in consultation with Wexford County Council, circa 54 roadside car parking spaces will be constructed; and

Community Gain in Ramsgrange Village - in consultation with Wexford County Council, extension to existing footpaths, four new street lights and a speed activated sign at Ramsgrange.

An overview of the proposed development is presented in **Figure 1.3**.

1.4 Greenlink Interconnector Limited

Greenlink is being developed by Greenlink Interconnector Limited, which is owned jointly by Element Power Holdings, part of Hudson Sustainable Investment, and Partners Group on behalf of its clients. Hudson Sustainable Investment is an independent investment management firm with a strong track record and expertise in investing in and developing sustainable energy infrastructure projects in Ireland, the UK and internationally. Partners Group is a global private markets investment management firm with €73 billion in investment programmes under management in private equity, private real estate, private infrastructure and private debt.



Figure 1.3: Overview of the proposed development | not to scale [background mapping Bing © Microsoft 2020]

1.5 Need for the Proposed Development

1.5.1 Overview

The Greenlink interconnector will link the high voltage electricity transmission networks in Ireland and Great Britain and the markets which they serve. The project is independent from the power generation sources that will generate the power to be transmitted through the interconnector; the interconnector will utilise whatever sources of power are supplied to those networks from time to time. The interconnector will facilitate power transfer in both directions.

Greenlink will have key strategic importance providing significant additional interconnection between Ireland and Great Britain, and onwards to mainland Europe via existing interconnectors between Great Britain and continental Europe. It will provide additional transmission network capacities, reinforcing the existing electricity grids in south-east Ireland and south Wales and contributing to each country’s strategic interconnection objectives. Greenlink will deliver increased security of supply, facilitate fuel diversity and greater competition, and will ultimately provide significant benefits to consumers in Ireland and Great Britain. It is recognised that there are significant benefits to be accrued in Ireland, Great Britain as a whole and mainland Europe from the provision of additional interconnection of the two national electricity grids.

Chapter 5 *Planning and Policy* provides more information on the European Union’s and Irish Government’s plans and policies in relation to the requirement for and benefits of greater interconnection between energy grids.

The advantages likely to result from Greenlink are summarised in **Figure 1.4** and explained below.



Figure 1.4: Potential benefits of the proposed development

* Figure for number of homes is based on typical annual household use of 4,200 kWh (CER, Review of Typical Consumption Figures - Decision Paper 12 March 2017 (CER17042) and estimated total flows from

UK to SEM of 1,600,000 MWh/yr.) Note: SEM - the single electricity market - is the electricity market in Ireland which operates on an all-Ireland basis.

1.5.2 Additional Interconnector Capacity

Currently, the capacity of the interconnection between the transmission networks on the island of Ireland and Great Britain is 1000MW. Greenlink will increase this by a nominal capacity of 500MW. While Eirgrid and the French transmission system operator have commenced a series of studies for a 700MW interconnector to France, there is no interconnector capacity from Ireland to continental Europe currently.

1.5.3 Security and Diversity of Supply

Greater interconnection will allow Ireland and Great Britain to pool reserve capacity, reducing the future peaking plant requirement. The impact of supply shocks or unplanned power station outage or fault at peak demand in either system, which could result in voltage reductions and emergency demand controls or even partial blackouts, will be mitigated by the transmission system operators using Greenlink. It will also enable system balancing arrangements to respond to different weather conditions in Ireland and Great Britain and, via Great Britain, to continental Europe, against the background of high intermittent renewable energy generation.

Greenlink will rely on generators and suppliers contracting capacity (applying European network codes) to transmit power across borders to link pools of supply and demand. Maintaining a diverse supply of electricity sources will protect consumers from overreliance on one source of generation and the resulting risk of price volatility or a risk of interruption to the supply of that source. Additional interconnection to Great Britain will provide an alternative means of electricity supply to Ireland, thereby increasing diversity of supply, and encouraging future diversity of indigenous supply.

1.5.4 Support for Low Carbon Energy

There has been significant development of low carbon power generation in Ireland in recent years, which is expected to continue, to meet the country's carbon reduction targets. However, when renewable generation exceeds the demand for electricity, the surplus cannot be used or stored and the renewable generators must be shut down. This is referred to as curtailment. Greenlink will play an important role in reducing the fiscal cost of renewable support schemes and will contribute to diversity of supply by:

- Reducing the need for curtailment
- Providing access to higher priced markets
- Increasing the addressable market size.

By providing additional interconnection, Greenlink is expected to provide stimulus to Ireland's offshore wind industry. Offshore wind had the potential to materially increase the renewable generation base and further diversify Ireland's supply.

1.5.5 Competitiveness

Greenlink, by providing additional interconnection to Great Britain's relatively much larger energy market, will promote competition between suppliers and offer new trade opportunities to efficient generators. This should result in lower prices to Irish consumers. Potentially lower energy prices will benefit Irish businesses and enhance Ireland's attractiveness to foreign direct investment.

1.5.6 Direct Economic Benefit

Greenlink will result in an investment of €400 million of private capital in Ireland and Wales. Approximately 250 jobs will be generated in Ireland in the construction phase on Greenlink. Further employment and direct benefits to the Irish economy will arise when Greenlink is operational. The economic benefits of Greenlink are addressed in **Chapter 15 Population and Human Health**.

1.5.7 Greenlink and Brexit

The UK's exit from the European Union in January 2020 has not altered the case for the Greenlink. Increasing levels of interconnection remains of key national strategic importance to both the UK and Ireland, and throughout Europe there are many examples of interconnectors, both existing and planned, between EU Member and non-Member States.

Switzerland, for example, is not part of the EU's Internal Energy Market and does not participate in EU market coupling initiatives. However, the volume of electricity exchange between Switzerland and neighbouring markets is very high.

The UK Government has stated in Section 1.7.5 of its Brexit White Paper that it aims to preserve existing efficient trading practices over interconnectors and to "*explore what would be needed to ensure trade over interconnectors would continue without automatic capacity allocation via the IEM system*". Greenlink will emulate the relevant regulatory and policy arrangements as defined by the future UK - EU energy relationship.

In 2018, GIL and the Commission for Regulation of utilities (CRU) modelled Brexit sensitivities to assess the impact on the benefits of the Project, which suggest that the social benefits of the Project would remain broadly unaffected in a Brexit scenario and would still be driven by key market fundamental factors such as improved integration of renewable energy sources, improved security of supply, and lower long-term costs of electricity through improving the efficiency of system dispatch. In fact, the modelling carried out by GIL's advisors and the CRU suggests that in a Brexit scenario, Greenlink could provide even more benefits to consumers than under a no Brexit scenario. In Chapter 5, Section 5.2.2 addresses the CRU's conclusions in relation to Greenlink and Brexit.

1.6 Statutory Consent Process for the Proposed Development

1.6.1 Projects of Common Interest

Projects of Common Interest (PCI) are cross border infrastructure projects that link the energy systems of European Union (EU) Member States. They are intended to help the EU achieve its energy policy and climate objectives: affordable, secure and sustainable energy for all citizens, and the long-term decarbonisation of the economy in accordance with the Paris Agreement. PCIs are projects that have a significant impact on energy markets and market integration in at least two EU countries, they boost competition on energy markets and foster the EU's energy security by diversifying sources, finally, they contribute to the EU's climate and energy goals by integrating renewables.

Under the Trans-European Network-Energy (TEN-E) Regulation No. 347/2013 on guidelines for Trans-European Network for Energy, adopted in 2013, the Commission identifies the most important PCIs across the EU, so that these projects can benefit from simplified permitting and the right to apply for EU funding from the Connecting Europe Facility.

There are 151 energy infrastructure projects on the October 2019 European Union list of PCIs, of which 102 are electricity transmission projects. These PCIs encompassed a range of network development, smart grids, energy storage and interconnector projects involving two or more EU Member states. Greenlink is a PCI under the provisions of the EN-E Regulation.

The TEN-E Regulation aims to implement a streamlined permitting procedure for PCIs by requiring each Member State to appoint a National Competent Authority responsible for collating and co-ordinating the issuing of all the consents and decisions required from all relevant authorities in that state. The National Competent Authority must also co-ordinate with the other relevant National Competent Authorities on a PCI project.

An Bord Pleanála was designated the National Competent Authority in Ireland for PCI. An Bord Pleanála has issued a document entitled 'Projects of Common Interest Manual of Permit Granting Process Procedures' which outlines the process to be followed for all PCI projects in Ireland.

The PCI Regulation requires that PCI projects are given 'priority status' at a national level to ensure rapid administrative treatment. To address this An Bord Pleanála issued a Schedule of Permit Granting Process for Greenlink which outlines the 'in principle' timeline for the permit granting process. An Bord Pleanála is responsible for ensuring that this schedule is complied with.

Article 10(4)(a) of the PCI Regulations requires the National Competent Authority to identify the scope of material and level of detail of information to be submitted by the project proponent, as part of the application for the comprehensive decision (i.e. the "*decision or set of decisions taken by a Member State authority or authorities that determines whether or not a project promoter is to be granted authorisation to build the energy infrastructure to realise a project*").

Article 10(4)(c) of the PCI Regulations requires the project proponent to submit a “*draft application file*” to the National Competent Authority. The project proponent is also required to make the “*draft application file*” available to consultees. Following receipt of the file, the National Competent Authority is required to identify whether information is missing and inform the project proponent of omissions.

The Schedule of Permit Granting Process provides that the National Competent Authority (in this case, An Bord Pleanála) will confirm that the “*final application file*” can be submitted within 3 months of receipt of the “*draft application file*” or the submission of missing information.

This Environmental Impact Assessment Report (EIAR) has been prepared to accompany the planning application which will form part of the ‘*draft application file*’ and ‘*final application file*’.

Specific requirements of the PCI Regulations include guidelines for public participation. Annex IV(5) specifies that at the least the following should be undertaken:

- Publish an information leaflet, giving, in a clear and concise manner, an overview of the purpose and preliminary timetable of the project, the national grid development plan, alternative routes considered, expected impacts, including of cross-border nature, and possible mitigation measures, which shall be published prior to the start of the consultation;
- Establish a project website;
- Inform all stakeholders affected about the project through the project website;
- Invite in written form relevant affected stakeholders to dedicated meetings, during which concerns shall be addressed; and
- Undertake at least one public consultation before submission of the “*draft application file*”.

GIL has complied with these requirements, details of which can be found on the project website: www.greenlink.ie.

1.6.2 Strategic Infrastructure Act 2006

Strategic Infrastructure Act Planning Procedure

The Planning and Development Act 2000 was amended in 2006 to require applications for planning permission for major infrastructure, including electricity transmission and gas infrastructure projects to be made directly to An Bord Pleanála rather than to the local planning authority, as would have previously been the case.

Section 182A of the Planning and Development Act 2000 (as amended) states:

“Section 182A.—(1) Where a person (hereafter referred to in this section as the ‘undertaker’) intends to carry out development comprising or for the purposes of electricity transmission, (hereafter referred to in this section and section 182B as ‘proposed development’), the undertaker shall prepare, or cause to be prepared, an application for approval of the development under section 182B and shall apply to the Board for such approval accordingly.”

Paragraph 182A (9), includes the following as meaning ‘transmission’, in relation to electricity:

“...meaning the transport of electricity by means of -

...

(b) an interconnector, whether ownership of the interconnector will be vested in the undertaker or not.

...”

Pre-Application Stage

As required under the amended Act, Greenlink commenced pre-application consultations with An Bord Pleanála in November 2016 under section 182E of the Planning and Development Act, 2000, as amended.

Application Stage

The planning application and the EIAR will be sent to An Bord Pleanála and to the prescribed bodies identified by the Board.

Any person may make submissions to An Bord Pleanála in relation to the application, within a specified period, being not less than 6 weeks from the date that the application is made. Wexford County Council’s officials are required to issue a report to An Bord Pleanála within 10 weeks of the application being made (or a longer period if specified by An Bord Pleanála). Wexford County Council’s elected members may append recommendations to the officials’ report.

An Bord Pleanála may, at any stage, hold a meeting with Greenlink or any other person and may request further information from Greenlink including a revised EIAR. In addition, An Bord Pleanála must notify prescribed bodies in certain circumstances of the application and such bodies may make submissions.

An Bord Pleanála may hold an oral hearing.

In accordance with Section 182B of the amended Act, before making a decision on the application, An Bord Pleanála must consider:

- the EIAR and Natura Impact Statement submitted,
- any submissions or observations made in accordance with the relevant sections of the amended Act,
- the likely consequence for the proper planning and sustainable development of the area in which the proposed developed will be situated,
- the likely effects on the environment or adverse effects on the integrity of a European site as the case may be,
- and the report and any recommendations of the person conducting any oral hearing relating to the proposed development.

An Bord Pleanála must make its determination of the application ‘*as expeditiously as is consistent with proper planning and sustainable development*’. It has an objective,

but not an obligation, to make a determination within 18 weeks of the latest date for the receipt of submissions from the public.

An Bord Pleanála may grant permission, refuse permission, grant permission for part of the proposed development, or modify the development and grant permission for the development in its modified form. An Bord Pleanála may also attach conditions to any permission granted.

1.7 Other Consents within the Jurisdiction of the Irish State: Foreshore Licensing

1.7.1 Foreshore Licensing

Under the Foreshore Act, 1933 (as amended), foreshore is defined as:

“the bed and shore, below the line of high water of ordinary or medium tides, of the sea and every tidal river and tidal estuary and of every channel, creek and bay of the sea or of any such river or estuary [and the outer limit of the foreshore shall be determined in accordance with Section 1A of this Act]”.

The foreshore extends to the outer limit of the territorial seas, the ‘12 nautical mile limit’, which extends 22.224km to seaward of a defined baseline. The Campile estuary and the offshore cable route as far as the 12 nautical mile limit are parts of the foreshore. A foreshore licence is required for the parts of Greenlink in the foreshore. Greenlink Interconnector Limited has applied to the Department of Housing, Planning and Local Government for this foreshore licence.

Section 225 of the Planning and Development Act, as amended, specifies which developments on the foreshore require planning permission. Section 225(3)(b)(i) states) *‘this section shall not apply to development consisting of underwater cables, wires, pipelines or other similar apparatus used for the purpose of transmitting electricity or telecommunications signals’*. Consequently, planning permission is not required for the part of the Greenlink project, the HVDC cables or fibre optic cables, which are located in the foreshore.

1.7.2 Continental Shelf Act

In legal terms, the Continental Shelf is the area of sea and seabed extending from the 12 nautical mile limit of Ireland’s territorial seas out to the limit of Ireland’s exclusive economic zone (“EEZ”). In the Irish Sea, Ireland’s EEZ extends to a median line drawn between Ireland and the United Kingdom. Part of Greenlink is located on the Continental Shelf. The Project will involve constructing works on the seabed of the Continental Shelf.

The Continental Shelf Act no 14 of 1968, as amended (“1968 Act”) prescribes a legislative framework for the Continental Shelf. Section 5(2) of the 1968 Act, as amended, imposes the requirement to obtain consent from the Minister for the Marine to *“construct, alter or improve any structure or works in or remove any object or material from a designated area”*. The Project will be constructed in part in designated areas.

The Department of Communications, Climate Action and Environment has confirmed via email (DCCAE 2019 personal communication to Anna Farley, Intertek, 12 June) that a licence under the above Act is not required for the laying of marine cables or the deposition of cable protection material on the Irish continental shelf.

1.7.3 Other Consents

The following additional consents will be required for the Irish onshore components:

- Authorisation to Construct an Interconnector under Section 16 of the Electricity Regulation Act 1999, to be issued by the Commission for the Regulation of Utilities,
- Consent to exercise the powers of ESB pursuant to section 53 of the Electricity (Supply) Act 1927 to Lay Electricity Lines Across Lands under Section 49 of the Electricity Regulation Act 1999, to be granted by the Commission for the Regulation of Utilities,
- Consent to exercise the power to lay electric lines conferred on ESB by section 51 and section 52(1) of the Electricity (Supply) Act 1927, to lay Electricity Lines Under the Public Road under Section 48 of the Electricity Regulation Act 1999, to be granted by the Commission for the Regulation of Utilities.
- (if required) Special Order for the Compulsory Acquisition of Lands for Converter Station site under Section 45 of the Electricity (Supply) Act 1927, as amended by Section 47 of the Electricity Regulation Act 1999, to be issued by the Commission for the Regulation of Utilities.
- (if required) Licence to discharge trade effluent to surface waters under Section 4 of the Local Government (Water Pollution) Acts 1977 and 1990, required for disposal to a surface water body of any waters arising from dewatering the construction works, to be issued by Wexford County Council.
- Further consents which may be required as the development proceeds include Road Opening Licences, under Sections 2A, 14, 34, 34A and 35 of the Electricity Act 1999 and Section 98 of the Electricity (Supply) Act, 1927.

The consents required for the components of the Project in Wales are summarised in the Planning Report, which forms part of the application for permission.

1.8 Screening for EIA

This EIAR has been prepared in compliance with the EIA Directive and the transposing European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI No. 296 of 2018) which came into force on 1 September 2018 as well as associated guidance.

Article 4 of EIA Directive (Council Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment as amended by Directive 2014/52/EU) imposes the requirement for EIA for the projects, to which the Article applies. These projects are listed in Annexes I and II of the Directive. For Annex I projects, an EIA is mandatory. Member States must determine if an EIA is mandatory for Annex II projects. Member States must make the determination

through (a) a case-by-case assessment or (b) thresholds or criteria set by the member State.

The Planning and Development Act 2000, as amended, transposes the requirements of Article 4 into Irish law. The projects for which EIA is mandatory are listed in Part 1 of Schedule 5 of the Act. Annex II projects are addressed in Part 2 of Schedule 5. For most project classes, a threshold is specified. There are a number of classes which require a case by case assessment.

While interconnectors are not listed in Annex I or II, or Schedule 1 or 2, GIL has been advised that the project categories listed in the EIA Directive must be understood by reference to a wide scope and broad purpose.

In the pre-application consultation meeting with the planning officials of Wexford County Council, the minutes of which are in Appendix 1.4, the Council officials advised GIL that an EIAR should be submitted with the planning application. While An Bord Pleanála (Strategic Infrastructure Development) is the competent authority, Wexford County Council is the local planning authority and therefore is relevant to the EIA Screening process.

For the purposes of this EIAR, the Project has been divided into four sections:

- Onshore Ireland, from the connection to the transmission grid at Great Island to the high water mark at Baginbun Bay in Co Wexford,
- Offshore Ireland, from the high water mark at Baginbun Bay to the median line,
- Offshore Wales, from the median line to high water mark at Freshwater West, Pembroke in Wales, and
- Onshore Wales, from the high water mark at Freshwater West to the connection with the UK transmission grid at Pembroke, in Wales.

GIL is submitting an EIAR for each section of the Project. Each EIAR addresses the cumulative effects of the entire project.

1.9 Approach to the EIA

1.9.1 Definition of EIA

EIA supports the decision-making process as it is integrated into consenting processes for new development projects. This helps to ensure that consent decisions are made in the knowledge of the environmental consequences of the project. Article 1(2)(g) of the 2014 EIA Directive states that:

“environmental impact assessment” means a process consisting of:

(i) the preparation of an environmental impact assessment report by the developer, as referred to in Article 5(1) and (2);

(ii) the carrying out of consultations as referred to in Article 6 and, where relevant, Article 7;

(iii) the examination by the competent authority of the information presented in the environmental impact assessment report and any supplementary information

provided, where necessary, by the developer in accordance with Article 5(3), and any relevant information received through the consultations under Articles 6 and 7;

(iv) the reasoned conclusion by the competent authority on the significant effects of the project on the environment, taking into account the results of the examination referred to in point (iii) and, where appropriate, its own supplementary examination; and

(v) the integration of the competent authority's reasoned conclusion into any of the decisions referred to in Article 8a.”

For the purpose of this EIAR, Greenlink Interconnector Limited is the ‘developer’ of the proposed development and An Bord Pleanála is the ‘competent authority’ responsible for undertaking the EIA and integrating its reasoned conclusion in this regard into the consent decision for the proposed development.

1.9.2 Guidance

This EIAR has been prepared with due regard to the following overarching guidance on EIA:

- Department of Housing, Planning and Local Government (2018) *Circular PL 05/2018 - Transposition into Planning Law of Directive 2014/52/EU amending Directive 2011/92/EU on the effects of certain public and private projects on the environment (the EIA Directive)*;
- Department of Housing, Planning, Community and Local Government (2017) *Key Issues Consultation Paper on the Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems*;
- Department of Housing, Planning, Community and Local Government (2017) *Circular PL 1/2017 - Implementation of Directive 2014/52/EU on the effects of certain public and private projects on the environment (EIA Directive): Advice on the Administrative Provisions in Advance of Transposition*;
- Department of the Environment, Community and Local Government (2013) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*;
- Environmental Protection Agency (2017) *Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports (Draft August 2017)*;
- European Commission (2017) *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*;
- European Commission (2013) *Guidance on the Application of the Environmental Impact Assessment Procedure for Large-scale transboundary projects*; and
- Government of Ireland (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)*.

1.9.3 Structure of the EIAR

This EIAR comprises the following elements:

- The Non-Technical Summary. This summarises the findings of the EIAR in a clear, accessible format that uses non-technical language and supporting graphics. The non-technical summary describes the proposed development, existing environment, effects and mitigation measures and relevant aspects of the EIAR in a manner that can be easily understood by the general public;
- The substantive EIAR chapters include introductory chapters in addition to ‘assessment’ chapters for each environmental aspect in accordance with Article IV of the EIA Directive. The front-end chapters (**Chapters 1 - 5**) provide the relevant project context whilst the assessment chapters (**Chapters 6 -18**) provide a description of the relevant environmental aspects and likely significant effects with summary chapters provided thereafter (**Chapters 19 and 20**);
- The technical documents that support the EIAR are cross-referenced in the main EIAR chapters to appendices. The appendices include other relevant drawings, modelling outputs, background reports and/or supporting documents and are included after the EIAR chapters.

1.10 Project Team

This section provides an overview of the multi-disciplinary consultancy team of competent experts that has been appointed by Greenlink Interconnector Limited and has contributed to the preparation of the EIAR (refer to **Table 1.1**).

Arup led the preparation of the EIAR with input from specialist sub consultants. Arup has been awarded an EIA Quality Mark by the Institute of Environmental Management and Assessment in recognition of its excellence in EIA activities. Further, all technical leads are deemed to be qualified and competent experts in their fields in accordance with Article 5(3) of the EIA Directive, given their academic qualifications, professional affiliations and professional experience on other EIAs for major infrastructure projects. Refer to **Appendix 1.1** for further detail on the competent experts that have prepared this EIAR.

Arup is the engineering and environmental consultant. It provided engineering input for earthworks, drainage, geotechnical, hydrogeological, traffic and various environmental aspects of the design. It was also the lead coordinator for the preparation of the EIAR.

Rose Cleary is the archaeologist for the project and she prepared the Archaeology, Architectural and Cultural Heritage chapter.

Dixon Brosnan are the ecologists for the project and it prepared the Biodiversity chapter.

Brady Shipman Martin completed the landscape and visual assessment of the project and prepared the Landscape and Visual chapter.

Compliance Engineering Ireland Ltd carried out an electromagnetic field study of the proposed development, which is described in the Population and Human Health chapter.

Table 1.1 The EIAR team

EIAR Chapter	Topic	Authors
Chapter 1	Introduction and Background	Simon Grennan (BSc, MSc), Arup Dan Garvey (BA(Hons), MSc, CEnv, MEnvSc, CGeog, FRGS)
Chapter 2	Alternatives Considered	Simon Grennan (BSc, MSc), Arup Dan Garvey (BA(Hons), MSc, CEnv, MEnvSc, CGeog, FRGS)
Chapter 3	Proposed Development	Based on information supplied by Greenlink Interconnector Limited and its consultants Dan Garvey (BA(Hons), MSc, CEnv, MEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 4	Construction Strategy	Based on information supplied by Greenlink Interconnector Limited and its consultants Dan Garvey (BA(Hons), MSc, CEnv, MEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 5	Planning and Policy	Ria Lyden BE MBA CEng, FIEI, MIStructE Dan Garvey (BA(Hons), MSc, CEnv, MEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 6	Traffic and Transportation	Niamh O'Regan (CEng), Arup
Chapter 7	Air Quality & Climate	Ria Lyden BE MBA CEng, FIEI, MIStructE Dan Garvey (BA(Hons), MSc, CEnv, MEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 8	Noise & Vibration	Cormac McKenna BEng, MSc MEI & Simon Grennan (BSc, MSc), Arup
Chapter 9	Biodiversity	Carl Dixon (BSc, MSc) and Ian McDermott (MSc), Dixon Brosnan
Chapter 10	Archaeology, Architectural and Cultural Heritage	Rose Cleary (BA Archaeology, MA Archaeology, MIAI)

EIAR Chapter	Topic	Authors
Chapter 11	Landscape and Visual	David Bosonnet (MILI, CMLI), Brady Shipman Martin
Chapter 12	Soils, Geology and Hydrogeology	Greg Balding (PGeo, Eur Geol), Gerry Baker (PGeo, EurGeol, IAH), Marie Fleming (PGeo, EurGeol, FGS), Arup
Chapter 13	Water and Hydrology	Alan Leen (BE, PgC(GIS), IPMA) Arup
Chapter 14	Resource and Waste Management	Janet Lynch BE (Hons) FETAC Cert in Waste Facility Management Dan Garvey (BA(Hons), MSc, CEnv, MIEEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 15	Population and Human Health	John McAuley BSc, MSc, CEng, MIEI, MIEEE Dan Garvey (BA(Hons), MSc, CEnv, MIEEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 16	Material Assets	Dan Garvey (BA(Hons), MSc, CEnv, MIEEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 17	Major Accidents and Natural Disasters	Dan Garvey (BA(Hons), MSc, CEnv, MIEEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 18	Cumulative, Transboundary and Interactive Effects	Dan Garvey (BA(Hons), MSc, CEnv, MIEEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup
Chapter 19	Summary of Mitigation Measures	Dan Garvey (BA(Hons), MSc, CEnv, MIEEnvSc, CGeog, FRGS) & Simon Grennan (BSc, MSc), Arup

1.11 Assessments and Consultation Undertaken

1.11.1 Assessments

A series of technical and environmental assessment studies have been completed to date to establish the feasibility of the proposed converter station site and the onshore cable route and to consider any potential impacts and opportunities arising from the proposed development. These are outlined in the various topic chapters of this EIAR. Predicted environmental effects are reported in accordance with EPA guidance (EPA 2017), which is summarised in **Appendix 1.5**.

A Joint Environmental Report addressing the entire project has been prepared, and included as **Appendix 1.6** to this EIAR.

1.11.2 Consultation

The proposed development will require planning permission in Ireland. All key stakeholders, including the public, have been consulted to ensure that they can input into the development process.

Organisations consulted in Ireland include:

- An Bord Pleanála - Strategic Infrastructure Development Unit;
- An Bord Pleanála - Project of Common Interest Unit;
- Wexford County Council;
- Port of Waterford Company;
- Commission for Regulation of Utilities;
- Department of Culture, Heritage and the Gaeltacht;
- Department of Housing, Planning and Local Government;
- Department of Communications, Climate Action and Environment;
- Department of Agriculture, Food and the Marine;
- National Parks and Wildlife Service;
- National Monuments Service;
- Irish Rail;
- Gas Networks Ireland;
- Southern Regional Assembly;
- Wexford Local Enterprise Office;
- Transport Infrastructure Ireland;
- National Transport Authority;
- Health and Safety Authority;
- Sea Fisheries Protection Authority;
- Inland Fisheries Ireland;
- Commission for Railway Regulation;
- Heritage Council;
- Fáilte Ireland;
- An Chomhairle Ealaíon (The Arts Council);
- Marine Institute;
- Office of Public Works;
- Geological Survey of Ireland;

- Bord Iascaigh Mhara;
- Environmental non-governmental organisations including:
 - An Taisce;
 - Birdwatch Ireland;
 - Irish Whale and Dolphin Group;
 - Irish Peatland Conservation Council;
 - Irish Wildlife Trust; and
 - Bat Conservation Ireland.

An Environmental Impact Assessment (EIA) scoping report for the parts of the Project in Ireland was prepared and sent to all relevant statutory and non-statutory consultees, with feedback sought to further inform the content and scope of the EIAR. The scoping report is included as **Appendix 1.2**.

Submissions were received in response to the scoping report. Points raised, and associated action taken by the EIA team is provided in **Appendix 1.3**.

The minutes of a meeting between Greenlink Interconnector Limited and Wexford County Council planning officials are included as **Appendix 1.4**. Among the issues raised were:

- Public consultation
- Protection of cultural heritage
- Public gain
- Traffic impact and traffic management plan
- Road resurfacing
- EIAR
- Appropriate assessment
- Construction management plan, with particular regard to protecting Natura 2000 sites.

These issues have been addressed by Greenlink Interconnector Limited and are documented in the relevant chapters and appendices of this EIAR. For example, public consultation is outlined below, cultural heritage, traffic impact and potential impacts on conservation sites are addressed in topic-specific chapters, and public gain has been the subject of further discussions and agreement with the Council, regarding the provision of car parking facilities near Baginbun Beach.

Further information on the consultation with An Bord Pleanála's Strategic Infrastructure Development Unit and Project of Common Interest Unit is presented in the Planning Report, which forms part of the application for permission. As part of the PCI process, Greenlink Interconnector Limited prepared a Concept for Public Participation (CPP) which set out its proposed strategy for public participation in the project consent process. This was a comprehensive document and ensured that the public will be consulted appropriately throughout the project. The scope and concept for public participation were developed and agreed in consultation with the PCI unit.

Further information on the public consultation undertaken is presented in the Planning Report, which forms part of the application for permission.

1.12 Difficulties Encountered During the Assessment

No particular difficulties were encountered during the assessment process.

1.13 References

Commission for Energy Regulation (2017) *Review of Typical Domestic Consumption Values for Electricity and Gas Customers*. CER/17042. Dublin, Ireland.

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Department of Housing, Planning and Local Government (2018) Circular PL05/2018 - Transposition into Planning Law of Directive 2014/52/EU amending Directive 2011/92/EU on the effects of certain public and private projects on the environment (the EIA Directive);

Department of Housing, Planning, Community and Local Government (2017) *Key Issues Consultation Paper on the Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licencing Systems*;

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UK Ofgem (May 2016) *Cap and Floor Regime: unlocking investment in electricity interconnectors*

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/786626/The_Future_Relationship_between_the_United_Kingdom_and_the_European_Union_120319.pdf