

GREENLINK ENVIRONMENTAL STATEMENT - ONSHORE WALES

APPENDIX 1.3

Consultation Report (Wales)

March 2020

Greenlink Interconnector
- connecting the power markets
in Ireland and Great Britain

Greenlink
INTERCONNECTOR

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1 Introduction

1.1 About the Project

- 1.1.1 Greenlink is a proposed subsea and underground electricity interconnector cable between the existing electricity grids in Ireland and Great Britain (GB), with a nominal capacity of 500 megawatts (MW). Greenlink will provide a new grid connection between EirGrid’s Great Island substation in County Wexford (Ireland) and the National Grid’s Pembroke substation in Pembrokeshire (Wales). The power will be able to flow in either direction, depending on supply and demand in each country.
- 1.1.2 Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland and GB with onward connections to continental Europe. The construction and development of Greenlink will deliver: increased energy security; regional investment and value for money to consumers; and enable the further integration of low carbon renewable energy sources.
- 1.1.3 Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe’s most important energy infrastructure projects and granting it the “highest national significance” possible.
- 1.1.4 Greenlink will consist of two converter stations - one located close to the Great Island substation in County Wexford and the other close to the Pembroke substation in Pembrokeshire - connected by two High Voltage Direct Current (HVDC) cables under the Irish Sea. A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa.
- 1.1.5 DC electricity is typically used for the transmission of electricity over long distances because it has lower losses, negligible heating effects and is therefore suitable to be buried underground. Accordingly, there will be no overhead lines between the two converter stations. Onshore, the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.
- 1.1.6 Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built.

1.2 About us

- 1.2.1 Greenlink is being developed by Greenlink Interconnector Limited (“GIL”), 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 programs under management in private equity, private real estate, private infrastructure and private debt.

1.3 Consultation requirements and responsibilities

- 1.3.1 Greenlink has been designated as a European Union Project of Common Interest (PCI) under European Union Regulation 347/2013 on guidelines for Trans-European Network for Energy (the TEN-E Regulations). As such GIL was required to prepare a Concept of Public Participation (CoPP) outlining how meaningful public consultation would be delivered throughout the development of Greenlink. The CoPP prepared by GIL, in line with the requirements of the Welsh Government TEN-E Guidance, was approved by the Welsh Government on 19 March 2019. The approved CoPP can be found in Annex 1.
- 1.3.2 This Consultation Report aims to demonstrate compliance with the CoPP and outlines the public consultation strategy we have undertaken during the development process in Wales.

Consultation strategy

- 1.3.3 Developers must proactively engage the public in order to facilitate a meaningful and genuine consultation.
- 1.3.4 Public consultation is an important part of the development process. In the context of infrastructure development, its key goals are to increase transparency and a wider involvement in large-scale projects by creating a dialogue with key stakeholders with the aim of improving these projects with stakeholder input.
- 1.3.5 GIL recognises that as the developer it is responsible for ensuring public consultation forms a core part of the development process and that the public has access to relevant information and can influence the decision-making process as appropriate.
- 1.3.6 GIL has fully complied with, and has gone beyond the requirements of, the TEN-E Regulation in designing and carrying out its consultation strategy.

Our approach

- 1.3.7 The Greenlink project team has aimed to ensure that the local community is consulted and involved throughout the development process of Greenlink and that the public has visibility of the proposal and the opportunity to input as it has evolved. The consultation process has been tailored to the specific needs of the local community in Pembrokeshire and delivered in a relevant and accessible manner.
- 1.3.8 Statutory consultation processes have been carried out in addition to the public consultation outlined in this Report.
- 1.3.9 GIL recognise that any type of development can have varying degrees of impact and interest for local communities and it is committed to promoting an open and honest dialogue with the local community throughout the development process. GIL sought to commence a public dialogue during the early stages of development before detailed environmental work was carried out, enabling it to draw on input and enabling the local community to watch the project evolve and understand the various complexities and detailed studies involved in developing and constructing an electricity interconnector of this scale.

- 1.3.10 By involving the local community throughout the development process and providing information as it has become available, GIL has worked to ensure that the local community is part of the development of Greenlink.
- 1.3.11 GIL has recognised and been steered by:
1. the principles of the consultation process set out in Annex 6 of the TEN-E Regulation and reflected in our Concept of Public Participation, and have adhered to these;
 2. the NPPF’s identification that early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties and that good quality pre-application discussion enables better coordination between public and private resources and improved outcomes for the community;
 3. the UK Marine Policy Statement’s identification that decisions should be taken after appropriate liaison with terrestrial planning authorities and other regulators and in consultation with statutory and other advisors when appropriate.
- 1.3.12 These various regulations and elements of policy helped to shape and inform GIL’s approach to consultation, which is designed to ensure early engagement prior to submission of the various planning applications for Greenlink.

Consultation Report

- 1.3.13 This document is the consultation report required pursuant to Article 9(4) of the TEN-E Regulation. This document sets out GIL’s approach to consultation and the steps it took to ensure public participation. This document also sets out the results of activities related to consultation with the public prior to the submission of the application file, including those activities that took place before the start of the permit granting process.

2 Consultation Delivery

2.1 Resourcing

- 2.1.1 Members of the Greenlink development and corporate teams have the expertise to engage and communicate with a variety of stakeholders on a range of development issues. This includes the Chief Executive Officer, the Planning & Permitting Manager, the Legal Counsel and the Communications Manager as the key representatives for the consultation programme.
- 2.1.2 Throughout the consultation process GIL has ensured that this expertise has been made available consistently, and consultation has also been supported by GIL’s consultants - Arup and Intertek. Where appropriate, additional third-party consultants have been brought in to support the Greenlink team to ensure that GIL has been able to cope flexibly with the peaks and troughs in consultation and to respond adequately to topic specific issues.

2.2 Contact details and availability

- 2.2.1 GIL has sought to ensure that it is easy for local stakeholders to contact and engage with the development team, publicising who the key representatives are for the project and ensuring there is a named local contact (the Planning and Permitting Manager) who is available to respond to detailed enquiries and meet with representatives and individuals as required.
- 2.2.2 Contact details are publicised on the project website and a general email account has been set up to deal with enquiries: info@greenlink.ie. This is monitored regularly, and enquiries are responded to in a timely and appropriate manner.
- 2.2.3 A satellite office was also established at Pier House, Pembroke Dock to provide a local base for meetings, should they be required.

2.3 Consultation tools used and resources produced

- 2.3.1 GIL has employed a number of different consultation tools during the consultation programme, publishing information to stakeholders in a variety of formats and in an accessible way. The precise deployment of the tools has reflected the requirements of stakeholders and feedback as the consultation progressed. The tools and resources have included:
- Project information leaflet (or “brochure”) as required by the TEN-E Regulation.
 - Project website as required by the TEN-E Regulation.
 - Public exhibitions
 - Community and Town Council meetings and presentations
 - One-to-one engagement with stakeholders
 - Roundtable meetings
 - House visits
 - Local and social media

Project information leaflet (brochure)

- 2.3.2 GIL has produced four editions of the brochure to date: in May 2018, November 2018, June 2019 and December 2019. These provide a summary (15 pages or fewer) of the project details, with updates as the design and development has evolved. GIL has sought to make the information accessible and engaging through the use of images, illustration and infographics to accompany the text.
- 2.3.3 Copies of the brochure were made available at public exhibitions held in both Wales and Ireland between May 2018 and the present day. They have also been distributed to individual stakeholders, at industry events and meetings and a digital copy of each is available to view and/or download from the project website. Copies of the brochures are included in Annex 2, 3,4 and 5.
- 2.3.4 The brochure satisfies the requirements of Annex 6(5)(a) of the TEN-E Regulation.

Project website

- 2.3.5 The project website was published on 21st April 2016 and is available to view here: www.greenlink.ie. It includes comprehensive information on the proposal, presented in a deliberately accessible way. The content is regularly updated as the development progresses, and has recently undergone a refresh to ensure it continues to meet the needs of the company, the project and stakeholders.
- 2.3.6 As well as an overview of the project proposal, news of milestones, and downloadable resources, the website includes a dedicated section on Planning and Consultation, where visitors can view and download planning documents, and find a list of exhibitions and consultation events and a comprehensive set of Frequently Asked Questions. The website has clear information on how to contact the Greenlink team and engagement is explicitly encouraged. A website screenshot can be found in Figure 1.
- 2.3.7 The website satisfies the requirements of Annex 6(5)(b) and Annex 6(6) of the TEN-E Regulation.

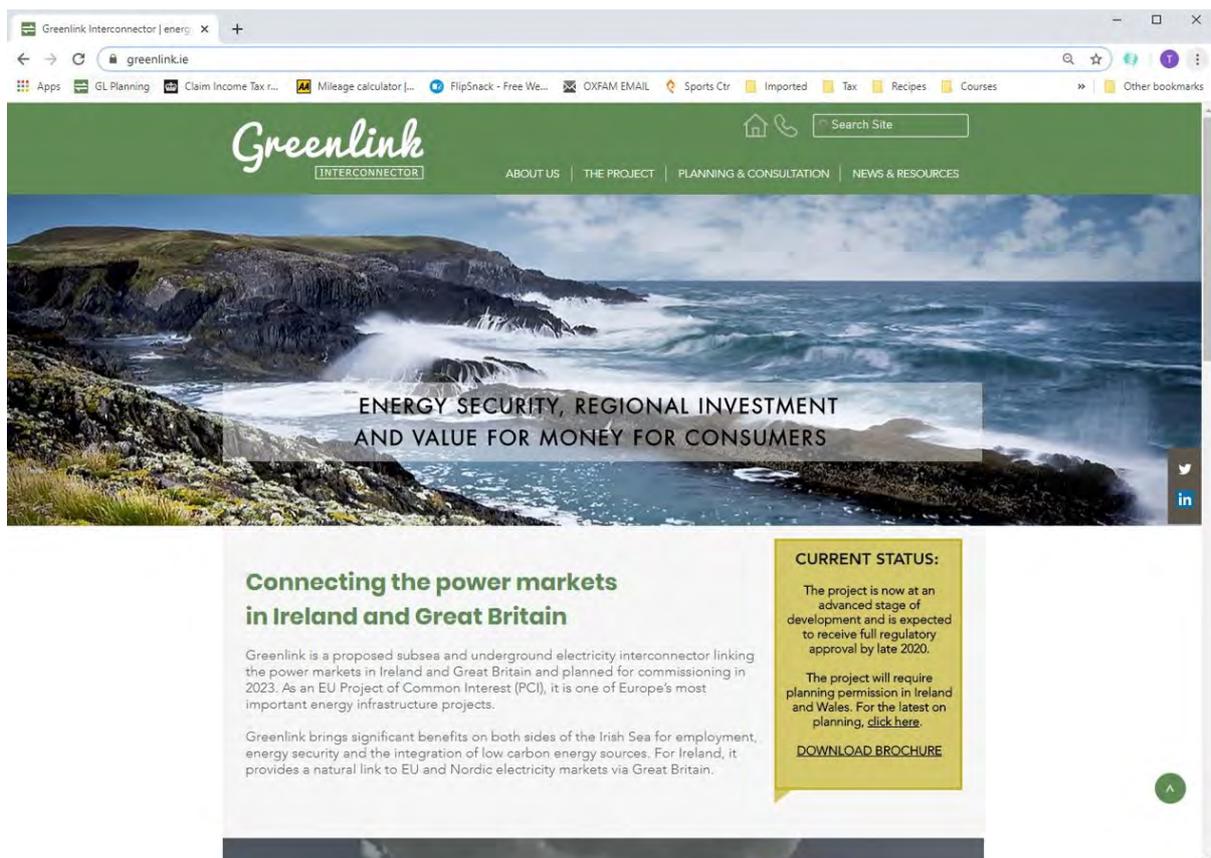


Figure 1 – Project website screenshot

Public exhibitions

- 2.3.8 Four rounds of public exhibitions have so far been held in Pembrokeshire. These have been designed to take place at key stages of the development programme to present the latest details of the project as the design has evolved. The exhibitions have enabled members of the local community to meet the project team in person, to ask questions and feed back their views, many of which have influenced the design of the project. They have been held in public locations and at times of the day convenient for the local community.
- 2.3.9 A full list of public exhibitions held so far is presented in table 1 found in 3.1.
- 2.3.10 The materials at the exhibitions included display boards, brochures and maps. The exhibitions were attended by the Planning and Permitting Manager and a representative from our consultants, along with other members of the Greenlink team, to ensure that the right level of expertise was available to the public.
- 2.3.11 Exhibitions are publicised in advance through the local papers (see list in Local Media section below) with paid adverts and a press release for editorial coverage.
- 2.3.12 Stakeholder organisations and individuals, including elected representatives, have been invited to each round of exhibitions by letter and/or email.
- 2.3.13 The exhibition boards and advert for each round of public exhibition can be found in Annex 6, 7, 8 and 9.

Community Council and Town Council meetings and presentations

- 2.3.14 GIL established contact with the Community and Town Councils early on in the development process and has kept them up to date on the progress of the proposal and public consultation. GIL has responded to requests for information and for meetings/presentations and this has allowed GIL to address both general and specific issues raised.
- 2.3.15 Details of presentations are provided below:
- **Angle Community Council** - Presentations were given on 4th July 2018, 7th November 2018 and 4th September 2019. Copies of the presentations can be found in Appendix 10.
 - **Pembroke Town Council** - A presentation was given on 17th January 2019. A copy of this presentation can be found in Annex 11. Following this presentation we agreed to host a public exhibition in Pembroke to discuss traffic and transport. This was held on 4th April 2019. The plans discussed at this public exhibition can be found in Annex 12. A question and answer session was held with Pembroke Town Council on 5th December on the same day as the public exhibition.

Other community and round table meetings

- 2.3.16 Community and roundtable meetings have been undertaken throughout the development process. These have generally been undertaken with statutory consultees like Natural Resources Wales and Pembrokeshire County Council. Public

engagement has predominantly delivered using the other tools listed in section 2.3.

One-to-one engagement with stakeholders

- 2.3.17 One-to-one engagement has been useful for discussing specific areas of concern with individuals – either local residents or leaders of local stakeholder groups. These have either been contacted by us proactively early on or have contacted us during the development process (for example through the website contact form, by email, or by leaving their details at public exhibitions with a request to be kept updated).
- 2.3.18 Each stakeholder is individually invited to the public exhibitions and, if they cannot attend, offered alternative meetings or directed to the website, so that they can be kept updated on the project and have an opportunity to discuss any concerns.

House visits and direct engagement with nearby residents

- 2.3.19 Residents living near a proposed project often have a number of concerns pertaining to issues of residential amenity and construction impacts. Specific households may require additional consultation care due to perceived high impacts from a proposal. GIL has therefore placed a high priority on early and comprehensive engagement with residents near the proposal, particularly those living along the onshore cable route and near the converter station site. Accordingly, during the early stages of the project, consultation centred on landowners and residents neighbouring the project site. Once an understanding had been developed of the environmental and technical constraints facing the project, wider public consultation began (with the first round of exhibitions in May 2018, as detailed above).
- 2.3.20 As the project moves into the construction phase GIL will continue to liaise with nearby residents to ensure that any impacts during construction are minimised and ensure that they have a direct point of contact within the project.
- 2.3.21 This, together with the actions described at Sections 2.3.8 to 2.3.17, satisfies the requirements of Annex 6(3) and Annex 6(5)(c) of the TEN-E Regulation.

Local media relations

- 2.3.22 Local media have been kept informed of the project throughout the development process, including news of project milestones, upcoming exhibitions and other consultation opportunities. GIL has used the media as an additional source of information to raise awareness within the community.
- 2.3.23 GIL has engaged regularly with the following local media (print, online and broadcast):
- Pembroke and Pembroke Dock Observer – Local weekly newspaper
 - Pembrokeshire Herald – Local weekly newspaper
 - Western Telegraph – Regional weekly newspaper
 - BBC Wales – regional television
- 2.3.24 Copies of press coverage to date can be found in Annex 13.

2.3.25 Social media is an important channel for engaging with stakeholders, allowing us to communicate news and updates on the project and also respond to questions and comments directly, given its interactive nature. We manage a Twitter account @Greenlink_IC and a LinkedIn account 'Greenlink Interconnector Limited' and both are monitored daily by the Communications Manager.

2.4 Responding to feedback

2.4.1 During the public consultation process, we have established a number of channels for stakeholders to submit feedback on the project, including by email, in person (at exhibitions or meetings), via their elected representatives and on feedback forms that we provide at public exhibitions. Two examples of feedback forms can be found in Annex 14.

2.4.2 Such feedback has been useful in identifying key areas of concern and has influenced the design of the project.

2.5 Stakeholders

2.5.1 As part of the consultation, GIL has engaged with a comprehensive range of stakeholders during the Greenlink development process. These were identified as key stakeholders when GIL were planning the consultation strategy and were set out in the CoPP. They have evolved as GIL has progressed through the development and consultation process and new stakeholders have been added.

2.5.2 In addition to the statutory consultees, the categories of key stakeholders for Greenlink have included:

- elected representatives
- neighbouring residents
- commercial and recreational users

Elected representatives

2.5.3 The local community is represented by elected officials at a local and national level. Elected representatives have been consulted to ensure that they can influence how the development progresses by representing the views of the electorate.

2.5.4 Details of how GIL has consulted both local and national elected representatives is set out in the following sections.

Community / Town councils

2.5.5 GIL contacted the five Community / Town Councils identified in the CoPP at an early stage of the development. This has resulted in different levels of engagement reflecting the level of likely interaction Greenlink is likely to have with the residents within the council areas.

2.5.6 Details of the level of interaction following initial contact are provided below:

- **Angle Community Council** - As the host council to the onshore infrastructure GIL has had a regular dialogue with Angle Community Council including the presentations outlined in 2.3.4 and Annex 10. Public exhibitions have been held

in the village hall for all four rounds of public exhibitions. Key milestones have also been communicated directly to the council.

- **Pembroke Dock Town Council** - Key milestones have been communicated directly to the council and offers of meetings have been extended should they be required. Public exhibitions have been held in Pater Hall for all four rounds of public exhibitions due to the presence of the dock and local businesses.
- **Hundleton Community Council** - Offers of meetings have been extended to the council should they be required. Public exhibitions have been held in the sport pavillion for all four rounds of public exhibitions due to them neighbouring them being the neighbouring council to the onshore infrastructure.
- **Pembroke Town Council** - The council was contacted at the early stages of the development due to the potential for construction traffic to travel through the town. As the project matured a dialogue commenced regarding construction traffic and the wider project. At the request of the council a topic specific exhibition was held in April 2019 to discuss construction traffic plans. A public exhibition has been held in Pembroke Town Hall for each of the two subsequent rounds of public consultation. Further details of presentations can be found in 2.3.4 and Annex 11 and 12. Key milestones have also been communicated directly to the council.
- **Stackpole and Castlemartin Community Council** - Project works are located away from the residents in this council area. The council was contacted at the early stages of the development and subsequently with offers of meetings extended.

Local authority councillors

- 2.5.7 County Councillors have been contacted at each project milestone to ensure that they have accurate project information and contact details should they have any queries. The level of engagement with each councillor has varied depending on their interest in Greenlink and the proximity of their wards.

Nationally elected representatives

- 2.5.8 All local MPs and AMs identified in the CoPP were contacted at the early stages of the development process. Key constituency MPs and AMs have been contacted at each project milestone to ensure that they have accurate project information and contact details should they have any queries.

- 2.5.9 Regular updates have been provided to the following national politicians:

- Angela Burns AM - Carmarthen West and South Pembrokeshire
- Simon Hart MP - Carmarthen West and South Pembrokeshire
- Stephen Crabb MP - Preseli Pembrokeshire

Neighbouring residents

- 2.5.10 GIL contacted all landowners at the beginning of the development process to identify key constraints and opportunities to consider when designing the cable route. As the cable options became apparent a dialogue with residents along the cable route and near to potential converter station sites commenced.

- 2.5.11 Residents have had a direct input into the design work as the development has progressed and we will continue to liaise with them throughout the construction phase to minimise any disruption.

- 2.5.12 One key area where this influence is demonstrated is the decision to avoid installing the cable within the B4320. The B4320 is the main road between Pembroke and Angle and any reason to close the road is recognised as having a significant impact on residents and visitors. Following discussions with residents the decision was made at an early stage to use a Horizontal Directional Drill (HDD) to drill under the road and avoid the need for any road closures.

Commercial and recreational users

- 2.5.13 To fully assess potential constraints and impacts GIL has sought the views of local and commercial users of the area around the proposed Greenlink infrastructure. These consultations have directly shaped the delivery of the project and survey work. A non-exhaustive list of interested parties is provided below along with details of how they have influenced the delivery of Greenlink.

- Beach users
- Castlemartin firing range
- Commercial and recreational users
- Farmers

Beach users

- 2.5.14 Concerns regarding the potential for the installation of the cable to disrupt beach access and the environment at Freshwater West has been clearly highlighted by beach users during consultation. Beach users have contacted GIL directly with concerns and an online petition highlighted the depth of feeling. While the petition misrepresented the details of the project it reinforced the importance of the beach to residents and visitors. Details of the petition and GIL's response can be found in Annex 15.

- 2.5.15 Recognising the importance of Freshwater West GIL has worked throughout the development process to ensure that installation could be completed via the use of an HDD taking the cable under the dune system and avoiding disruption to beach users. Consistent with GIL's commitment to honest dialogue it retained the potential of trenching through the dune system and beach until it had confidence that an HDD was deliverable. Once the relevant survey work had been concluded GIL were able to make a firm commitment to using an HDD. A commitment has also been made to avoid restricting access to the beach throughout construction and complete installation work at Freshwater West outside of the peak months of July and August.

Castlemartin Firing Range

- 2.5.16 The marine cable route passes through the firing range safety zone. Recognising this GIL has engaged directly with the firing range since the early stages of development work. This engagement has included attending Rural Steering Group meetings held at the range and agreeing a protocol to ensure that any work GIL undertakes is coordinated with the activity of the range.
- 2.5.17 During the subsea survey work, undertaken between September 2018 and March 2019, GIL liaised directly with the range to ensure that our survey efforts and the activity on the range was coordinated. This included a pre-commencement meeting onsite and ongoing dialogue. The same protocol is proposed during the construction phase.

Commercial fishing interests

2.5.18 It is recognised that subsea survey and installation work can impact ongoing commercial fishing interests. Prior to the commencement of subsea survey work in Wales GIL worked to identify commercial fishing interests in the area and established a dialogue directly with the interests via the appointed fisheries liaison officer (MarineSpace). Liaison aimed to ensure survey work and the commercial fishing was coordinated and that at times when fishing was impacted appropriate compensation was paid using established principles.

2.5.19 It is proposed that this approach is repeated during the construction phase.

Farmers

2.5.20 The onshore cable route is predominantly being laid in agricultural land. During the route selection process, we consulted landowners and farmers to minimise impacts on field drainage and future land use plans. Where possible GIL has followed field boundaries and extended the HDD at the B4320 to continue under the neighbouring field where new drainage was installed recently. GIL has also routed the cable through existing field entrances whenever possible to minimise environmental and farming impacts.

2.6 Subject areas

2.6.1 During the development process GIL has consulted on a number of subject areas. Subject areas consulted on included:

- Environmental
- Local supply chain
- Logistics and construction programme
- Existing land use

Environmental

2.6.2 As part of the project development process Environmental Scoping Reports were prepared and issued to stakeholders for both the marine and onshore elements of the project in Wales. The feedback received was then incorporated into the final assessment methodologies and planning documentation.

Onshore Scoping

2.6.3 Onshore Environmental Scoping Reports included the following topic areas:

- Approach to environmental assessment;
- Biodiversity;
- Population and human health;
- Historic environment;
- Landscape and visual impact;
- Water, hydrology, flooding and surface water quality;
- Soils, geology and hydrogeology;
- Noise and vibration;
- Land use;
- Air quality and climate change;
- Material assets, major incidents and disasters; and

- Cumulative and transboundary effects.

2.6.4 Organisations consulted included:

- Welsh Government;
- Pembrokeshire County Council;
- Pembrokeshire Coast National Park Authority;
- Natural Resources Wales;
- Cadw;
- Dyfed Archaeological Trust;
- Milford Haven Port Authority;
- Pembroke Port;
- Ministry of Defence; and
- National Grid.

2.6.5 The community was also consulted with the Environmental Scoping Report and details being available to the public at the first round of public exhibitions in May 2018 and all future public exhibition events.

2.6.6 Following the completion of the scoping exercise dialogue continued with all key environmental stakeholders and information was made available to the community and answers provided to queries.

Marine Scoping

2.6.7 Marine Environmental Scoping Reports included the following topic areas:

- Physical conditions and marine processes;
- Intertidal and benthic ecology;
- Fish and shellfish;
- Birds;
- Marine mammals and reptiles;
- Protected sites;
- Commercial fisheries;
- Shipping and navigation;
- Offshore infrastructure and other marine users; and
- Marine archaeology.

2.6.8 Organisations consulted included:

- Welsh Government;
- Local Biodiversity Officer (Pembrokeshire County Council)
- Pembrokeshire Coast National Park Authority;
- Natural Resources Wales;
- Cadw;
- Dyfed Archaeological Trust;
- Milford Haven and Pembroke Dock;
- Pembroke Port;
- Castlemartin Firing Range;
- Ministry of Defence; and
- Local fishing interests.

- 2.6.9 Copies of the Environmental Scoping Report and details were made available to the public at the first round of public exhibitions in May 2018 and all future public exhibition events.
- 2.6.10 Following the completion of the scoping exercise dialogue continued with all key environmental stakeholders and information was made available to the community and answers provided to queries.

Local supply chain

- 2.6.11 The development of significant infrastructure entails substantial capital outlay from developers and their investors, the majority of which is spent during the construction period. Most of this outlay is spent purchasing equipment and materials (e.g. converter stations and subsea cables) with the rest mainly spent on contractors for the construction of the infrastructure. The construction works will be coordinated by a main contractor who will sub-contract various components to specialist companies, e.g. cable laying, pouring foundations, etc.
- 2.6.12 Construction work on the Greenlink Interconnector is expected to lead to notable expenditure in Wales. A significant amount of work will require skills and experience available from contractors found in the local area.
- 2.6.13 The types of services that could be locally sourced include:
- Transportation equipment and personnel;
 - Materials: e.g. supplying and pouring concrete;
 - Electrical connection;
 - Civil engineering activities and earthworks: e.g. tracks and hard-standing, foundations, trench digging for cables, etc.;
 - Hospitality and catering;
 - Office and cleaning supplies;
 - Site services: e.g. portacabins and portaloos;
 - Site security;
 - Fencing; and
 - Waste disposal.
- 2.6.14 GIL is committed to maximising the use of locally based contractors and personnel during the construction and operational phases of the project. As a part of this commitment GIL has engaged with local suppliers and liaised with local economic bodies to ensure that a dialogue is established with local businesses.
- 2.6.15 Throughout the development process GIL has ensured that interested businesses can register an interest in being part of the supply chain through the website and by contacting GIL directly.
- 2.6.16 GIL has committed to run a ‘meet the buyer event’ in the local area once a main contractor is selected so that they can have easy direct access to the local supply chain.
- 2.6.17 GIL will also seek to work alongside Pembrokeshire College to maximise training and apprentice opportunities arising from the construction and operational phase of Greenlink.

Logistics and construction programme

- 2.6.18 The construction phase of a major project includes numerous vehicle movements including workers travelling to and from site and equipment and material deliveries. A Transport Assessment has been completed as part of the suite of planning documentation alongside an Outline Construction Traffic Management Plan. These have been produced incorporating consultation responses received during the consultation process.
- 2.6.19 Consultation responses have centred on concerns regarding speeding construction vehicles and transport routes through Pembroke. The GIL presentation to Pembroke Town Council on 17th January 2019 resulted in a topic specific public exhibition on 4th April 2019 to discuss transport routes and constraints.
- 2.6.20 Installation of the underground cables also has the potential to cause disruption and GIL will continue to work with the local community throughout the installation process to minimise any impacts.

Existing land use

- 2.6.21 GIL is keen to avoid any negative impacts on existing users of the local land and marine locations where the project is proposed to be located. Through consultation with landowners, tenant farmers and users of the land, including the beach at Freshwater West GIL has developed a good understanding of the existing use of the land hosting Greenlink. Consultation with these key stakeholders are detailed in section 2.5.3.

3 Public consultation undertaken

3.1.1 An overview of the consultation undertaken as development process progressed is outlined and described in this section of the Consultation Report.

3.2 Consultation programme

3.2.1 GIL commenced informal consultation with landowners and key stakeholders prior to the commencement of the formal consultation detailed in the CoPP. The aim of this consultation was to gain an understanding of the key constraints facing the development of Greenlink in Pembrokeshire.

3.2.2 This consultation fulfilled the requirements of the TEN-E Regulation. To the extent that consultation pre-dated the formal approval of the CoPP, it was taken into account in the CoPP in accordance with Article 9(3) of the TEN-E Regulation.

3.2.3 As required by Article 9(4) of the TEN-E Regulation, GIL has carried out at least one public consultation prior to submission of the final and complete application file. The public consultations were designed to inform stakeholders about the project at an early stage in order to allow meaningful stakeholder engagement throughout the pre-application process. Undertaking public consultation at an early stage has ensured that potential concerns by the public could be taken into account in an open and transparent manner.

3.2.4 The first public consultation in Wales and Ireland took place within a period of one month of each other (during May 2018 and June 2018) and satisfied the requirement of Article 9(5) of the TEN-E Regulation.

3.2.5 A summary of key formal public consultation dates in both Ireland and Wales is detailed below in Table 1:

Table 1- Table of consultation

Section	Public Exhibitions		Ten-E Regulation Information Brochure	Additional Points of Note (Wales)
	Pembrokeshire (Wales)	County Wexford (Ireland)		
3.2	May 2018 - Pembroke Dock, Hundleton and Angle	June 2018 - Fethard on Sea and New Ross	Issue 1 - May 2018	Onshore: Route option work Marine: Pre- subsea survey consultation
-	-	August 2018 - Duncannon	-	-
3.3	December 2018 - Pembroke Dock, Hundleton and Angle	January 2019 - Duncannon, Fethard on Sea and New Ross	Issue 2 - November 2018	Onshore: Angle Community Council presentations 4 th July 2018 and 7 th November 2018 Marine: Subsea surveys September 2018 to March 2019
3.4	April 2019 - Pembroke in Pembrokeshire	-	-	Onshore: Pembroke Town Council presentation 17 th January
3.5	June 2019 - Pembroke, Pembroke Dock, Hundleton and Angle	March 2019 - Ramsgrange	Issue 3 - June 2019	Onshore: 2019 Online petition opposing the development published April 2019.

Section	Public Exhibitions		Ten-E Regulation Information Brochure	Additional Points of Note (Wales)
	Pembrokeshire (Wales)	County Wexford (Ireland)		
3.6	December 2019 - Pembroke, Pembroke Dock, Hundleton and Angle	December 2019 - Ramsgrange, Duncannon and Fethard on Sea	Issue 4 - December 2019	<p>Onshore: Angle Community Council presentation 4th September 2019; Pembroke Town Council Q&A 5th December 2019;</p> <p>Formal pre-application consultation for onshore applications</p> <p>Marine: Marine Licence application submitted to NRW for validation July; Formal consultation 13th November to 8th January (note extensions provided to some key stakeholder until 22nd January due to Winter break)</p>

3.3 May 2018 public exhibitions and relevant consultation milestones

3.3.1 The boards and press notice relating to this round of public exhibitions can be found in Annex 6. The exhibitions were advertised in the press, on local noticeboards, local letter drop and via direct communication with landowners, local politicians, key stakeholders and members of the public who had requested to be kept informed of progress.

3.3.2 Details of the public exhibitions are shown below:

- 29 May 2018 - Pater Hall - Pembroke Dock - 14:00 to 20:00
- 30 May 2018 - Sports Pavillion - Hundleton - 14:00 to 20:00
- 31 May 2018 - Angle Village Hall - Angle - 14:00 to 20:00

Public consultation completed prior to public exhibitions

3.3.3 Following the selection of Freshwater West as the proposed landfall location GIL contacted all key landowners between Freshwater West and Pembroke substation to introduce Greenlink and discuss potential constraints regarding potential converter station site and the potential cable routes. Community Councils and Town Councils were also contacted to introduce Greenlink.

3.3.4 The first cable route considered was via installation within the local road network, however, a common response from local residents was the importance of maintaining access along the B4320 between Angle and Pembroke. The road is narrow and installing the cable in the road would have resulted in a lengthy road closure, we also established that there were existing buried utilities in the road which would need to be considered when installing the cables. Following review of design options GIL made a commitment to HDD under the B4320 and install cables across agricultural land.

3.3.5 The importance of Freshwater West as a location of recreational end

environmental importance was also highlighted by residents and key stakeholders including Natural Resources Wales and Pembrokeshire Coast National Park Authority. GIL committed to fully exploring the potential for the use of HDD to install the cable under the dunes and beach to avoid environmental and recreational disruption.

- 3.3.6 Commercial fishing interests in the area had been contacted regarding the upcoming subsea surveys and consultation had commenced to coordinate surveys with planned commercial fishing.

Details of project development presented

- 3.3.7 Boards can be found in Annex 6. The boards included were:

- Project benefits
- The proposal
- Why Greenlink?
- Greenlink components
- Consultation
- Local supply chain
- Site assessment - overview
- Landscape and visual impact
- Water and soil
- Noise and vibration
- Biodiversity
- Historic environment
- Traffic and transport
- Agricultural land
- Electromagnetic fields
- Socio economics
- Air quality
- Marine surveys
- Marine environmental assessments
- Project timeline
- The planning process (Wales)
- Offshore Ireland route options
- Offshore Wales route options
- Optioneering plan - regional
- Welsh landfalls
- Irish landfalls

- 3.3.8 Comments were welcomed on all subject areas.

- 3.3.9 Members of the public were informed of the proposed planning process and that GIL would seek outline planning permission for the converter station and use permitted development rights for the cable routes.

- 3.3.10 Detailed maps showing the possible cable routes and converter stations were presented at the public exhibition and comments welcomed. The potential onshore cable routes and potential converter sites discussed can be found in Figure 2.

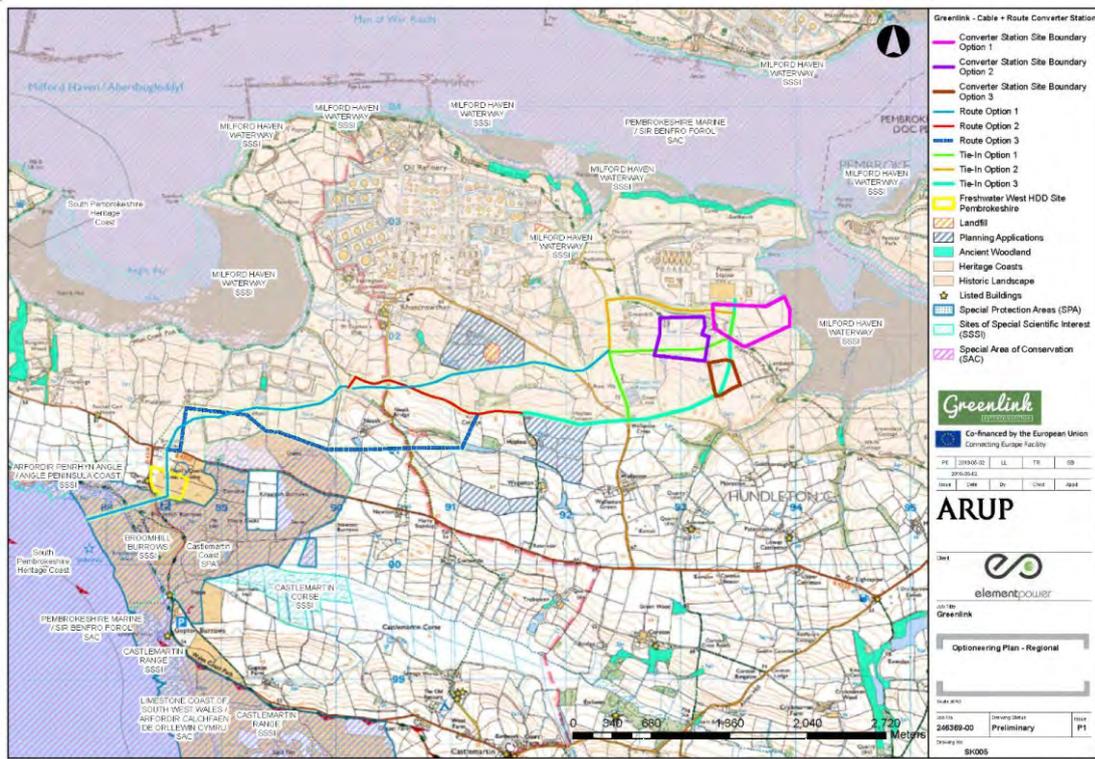


Figure 2 – Onshore project plan presented at public exhibitions May 2018

3.3.11 The three potential offshore cable routes were also presented for discussion. These are shown in Figure 3.



Figure 3 – Offshore project plan presented at public exhibitions May 2018

3.3.12 The May 2018 project brochure, found in Annex 2, was distributed at the public exhibitions.

Issues raised during consultation

3.3.13 Comments received were positive towards Greenlink, however, the majority of these were with the disclaimer that GIL had to ensure that the B4320 remained open and Freshwater West beach and dunes not be damaged.

3.3.14 Comments were made regarding the importance of the cable route being designed to minimise any environmental impact.

3.3.15 Commitments were requested that overhead lines would not be used between the beach and the converter station. GIL gave this commitment.

3.3.16 No concerns were raised regarding converter station locations.

3.4 December 2018 public exhibitions and relevant consultation milestones

3.4.1 The boards and press notice relating to this round of public exhibitions can be found in Annex 7. The exhibitions were advertised in the press, on local noticeboards and via direct communication with landowners, local politicians, key stakeholders and members of the public who had requested to be kept informed of progress.

3.4.2 Details of the public exhibitions are shown below:

- 3 December 2018 - Pater Hall - Pembroke Dock - 14:00 to 18:30
- 4 December 2018 - Angle Village Hall - Angle - 14:00 to 20:00
- 5 December 2018 - Sports Pavillion - Hundleton - 14:00 to 20:00

Public consultation completed prior to public exhibitions

3.4.3 Consultation continued with landowners and environmental stakeholders to refine cable routes and converter station locations. This resulted in a preferred cable route and converter station option being identified. Final selection would require the completion of technical and environmental feasibility work.

3.4.4 Presentations were given to Angle Community Council to support Greenlink consultation on 4th July 2018 and 7th November 2018. These can be found in Annex 10. Angle Community Council reinforced the importance of minimising any impact on the environment and Freshwater West. The Community Council welcomed the commitment to HDD under the B4320 to avoid commuter disruption.

3.4.5 Liaison with commercial fishing interests continued throughout the subsea survey period from September 2018 to March 2019. Information was issued to all key stakeholders including members of the public who had requested to be kept updated on project progress and local councillors. GIL also ensured subsea surveys were coordinated with Castlemartin Firing Range and Milford Haven Port Authority.

3.4.6 Details of project development presented

3.4.7 Boards presented can be found in Annex 7. The boards included were:

- Project benefits
- The proposal
- Why Greenlink?
- Converter station sites
- Greenlink in Wales
- Greenlink components
- Indicative converter station
- Consultation
- Local supply chain
- Site assessment - overview
- Landscape and visual impact
- Viewpoint locations
- Biodiversity
- Historic environment
- Traffic and transport
- Transport routes
- Socio economics
- Marine surveys
- Marine environmental assessments
- Project timeline
- Offshore Ireland route options
- Offshore Wales route options
- Planning
- Welsh landfalls
- Irish landfalls

3.4.8 Comments were welcomed on all subject areas.

3.4.9 GIL were able to present more project specific information at this round of public exhibitions following the selection of a preferred cable route and converter station site. This information included the maximum potential converter station dimensions, potential transport routes and proposed locations to be assessed in the landscape and visual impact assessment. A specific board was also prepared explaining the selection of the preferred converter station site.

3.4.10 Members of the public were also informed that GIL had made the decision to undertake a voluntary Environmental Impact Assessment (EIA) in support of Greenlink. While it was recognised that Greenlink did not require an EIA, GIL decided to undertake a voluntary EIA in recognition of the length of the permitting process and the evolving interpretation of the EIA regulations within Ireland. As a result of this decision the onshore cable routes would now seek planning permission rather than be developed using permitted development rights.

3.4.11 The preferred cable route and converter station option (highlighted red) presented at the public exhibitions can be found in Figure 4.

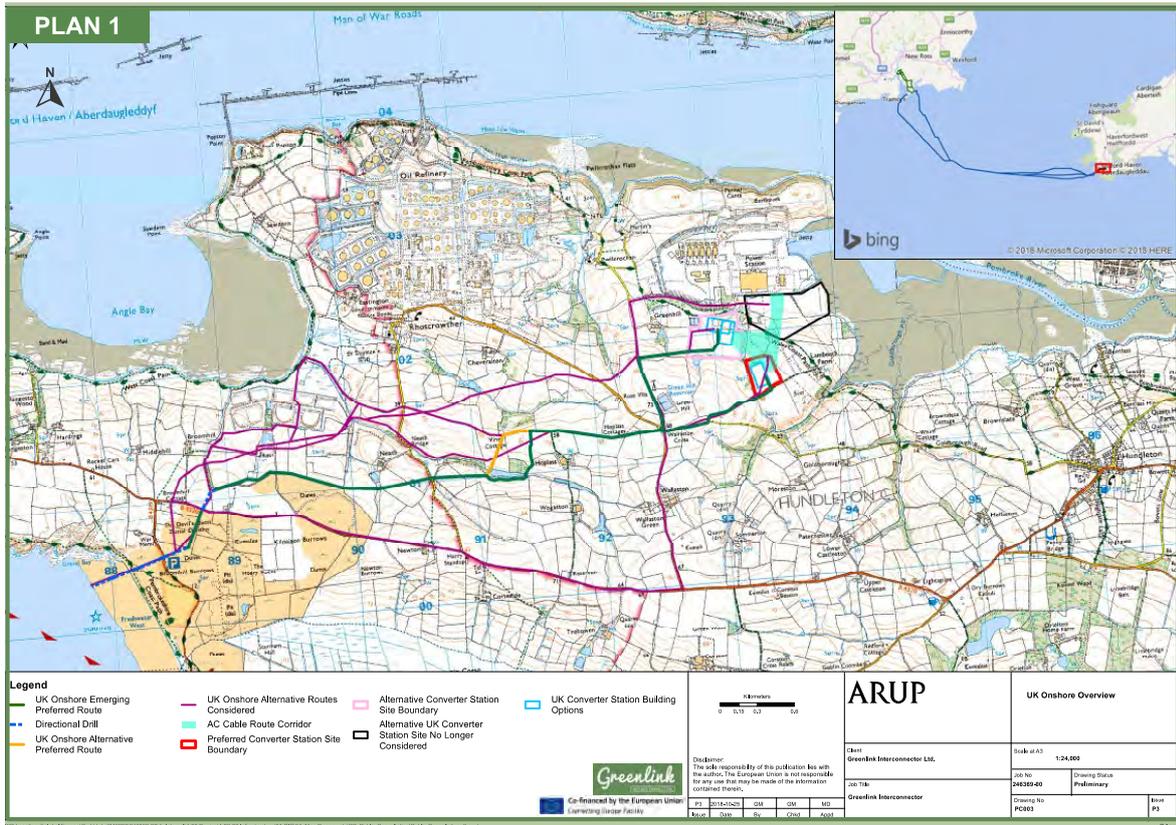


Figure 4 - Onshore project plan presented at public exhibitions December 2018

3.4.12 The two potential offshore cable routes were also presented for discussion. These are shown in Figure 5.

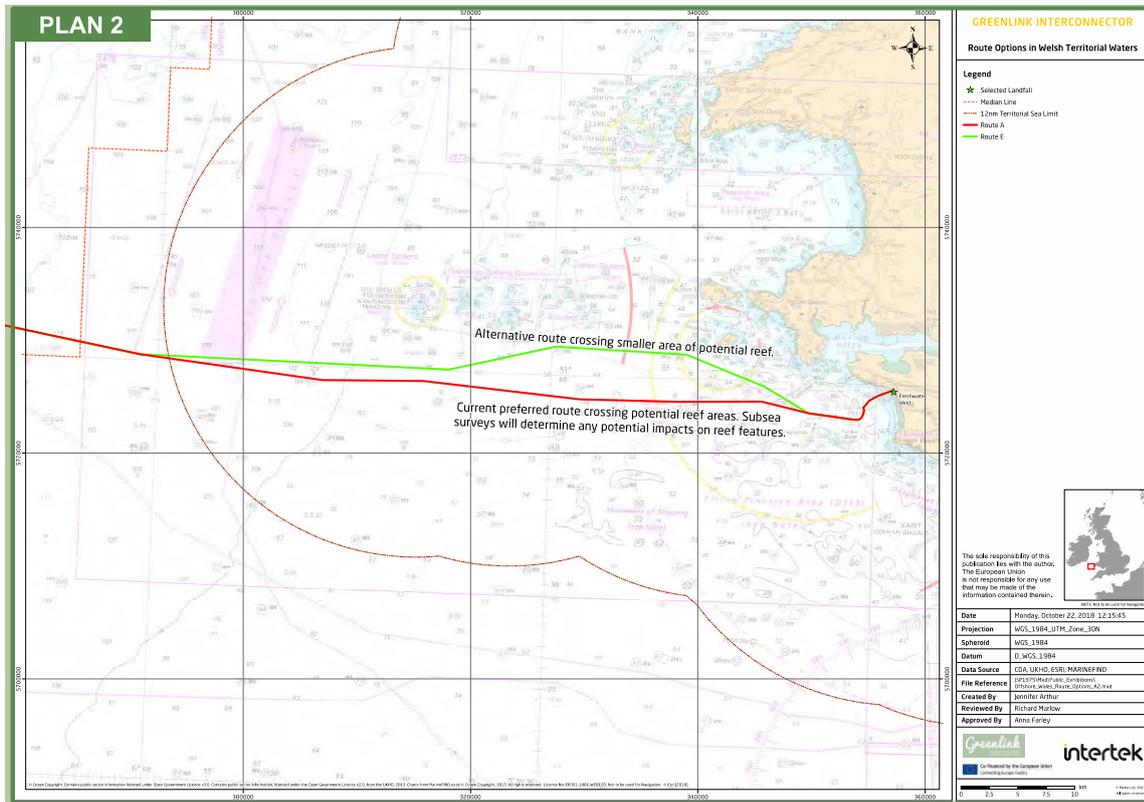


Figure 5 - Offshore project plan presented at public exhibitions December 2018

3.4.13 The November 2018 project brochure, found in Annex 3, was distributed at the public exhibitions.

Issues raised during consultation

3.4.14 Comments received were positive towards Greenlink.

3.4.15 The importance that GIL avoid impacts on Freshwater West was highlighted.

3.4.16 The importance of GIL avoiding any impact on coastal processes was raised - requesting that GIL avoid introducing large artificial features close to the shore. I.e. avoid large rock placement at the HDD exit point in the sea. **Note:** the marine licence application made a commitment to avoid this.

3.4.17 Concerns were raised regarding potential noise issues at properties neighbouring the proposed converter station site.

3.4.18 The importance of coordinating construction traffic and cable installation close to the site with local residents was raised.

3.4.19 The only concern regarding the potential converter station location was regarding potential issues around noise.

3.5 April 2019 traffic and transport public exhibition and relevant consultation milestones

3.5.1 The plans and public notice relating to the topic specific traffic and transport public exhibition can be found in Annex 12. The exhibition was advertised via Pembroke Town Councils social media and local noticeboards and via direct communication with landowners. Local politicians, key stakeholders and members of the public who had requested to be kept informed of progress.

3.5.2 Details of the public exhibitions are shown below:

- 4 April 2019 - Pembroke Town Hall - Pembroke - 10:00 to 13:00

Public consultation completed prior to public exhibition

3.5.3 GIL had provided project updates to key local councils throughout the development process. Following the public exhibitions held in December 2018 GIL were invited to give a presentation to Pembroke Town Council. A copy of the presentation, given on 17th January 2019, to Pembroke Town Council can be found in Annex 11. During the presentation councillors confirmed that it was important that GIL avoid disruption to the beach and dunes at Freshwater West they also highlighted issues regarding construction traffic and abnormal deliveries passing through Pembroke and highlighted the importance of having clear plans prepared prior to construction commencing. GIL agreed to host a topic specific public exhibition in Pembroke Town Hall to discuss transport plans with the public. GIL also agreed to include Pembroke as a location for future rounds of public exhibitions.

3.5.4 Subsea surveys concluded in March 2019. Consultation with commercial fishing interests in support of the subsea surveys concluded but will continue throughout the development process.

Details of project development presented

- 3.5.5 The plans presented and discussed at the public exhibition can be found in Annex 12 and Figures 6 and 7 below.
- 3.5.6 The plans presented and discussed at the public exhibition can be found in Annex 12 and Figures 6 and 7 below.



Figure 6 - Pembroke transport plan presented at public exhibition in April 2019



Figure 7 - Full project transport plan for abnormal loads presented at public exhibition in April 2019

3.5.7 The November 2018 project brochure, found in Annex 3, was distributed at the public exhibition.

Issues raised during consultation

3.5.8 GIL was asked to minimise using the high street - especially during rush hours.

3.5.9 Residents and councillors asked GIL to minimise traffic during rush hours throughout Pembroke.

3.5.10 The potential constraints posed bridges in and around Pembroke was discussed and the public were pleased to see we had identified these constraints on our plans. It was highlighted that the bridges (especially on Holyland Road) gets scraped or hit on a fairly regular basis - cited MoD tank deliveries and others.

3.5.11 Attendees would prefer GIL to use the Valero or RWE Jetty for big deliveries.

3.5.12 It was highlighted that Bush Street in Pembroke Dock was an alternative route for abnormal deliveries to be considered.

3.5.13 Road safety during construction was viewed as a priority.

3.5.14 **Note:** The points raised have been incorporated into planning documentation.

3.6 June 2019 public exhibition and relevant consultation milestones

3.6.1 The boards and press notice relating to this round of public exhibitions can be found in Annex 8. The exhibitions were advertised in the press, on local noticeboards and via direct communication with landowners, local politicians, key stakeholders and members of the public who had requested to be kept informed of progress.

3.6.2 Details of the public exhibitions are shown below:

- 24 June 2019 - Pembroke Town Hall - Pembroke - 14:00 to 20:00
- 25 June 2019 - Angle Village Hall - Angle - 14:00 to 20:00
- 26 June 2019 - Pater Hall - Pembroke Dock - 14:00 to 20:00
- 27 June 2019 - Sports Pavillion - Hundleton - 14:00 to 20:00

Public consultation completed prior to public exhibitions

3.6.3 Consultation continued with landowners and environmental stakeholders resulting in a confirmed proposed cable route and converter station location. The final selection was supported by the completion of technical and environmental work.

3.6.4 An online petition containing incorrect information about Greenlink was published opposing Greenlink and construction at Freshwater West. This gained more than 5,000 signatures. Greenlink worked with residents, community representatives and key stakeholders to correct the misinformation contained within the petition. Details of the petition and GIL's response can be found in Annex 16.

- 3.6.5 Consultation had been undertaken with residents neighbouring the development to discuss noise issues, gain readings from properties and incorporate results into noise models to ensure properties would not be impacted by operational noise from the converter station site.

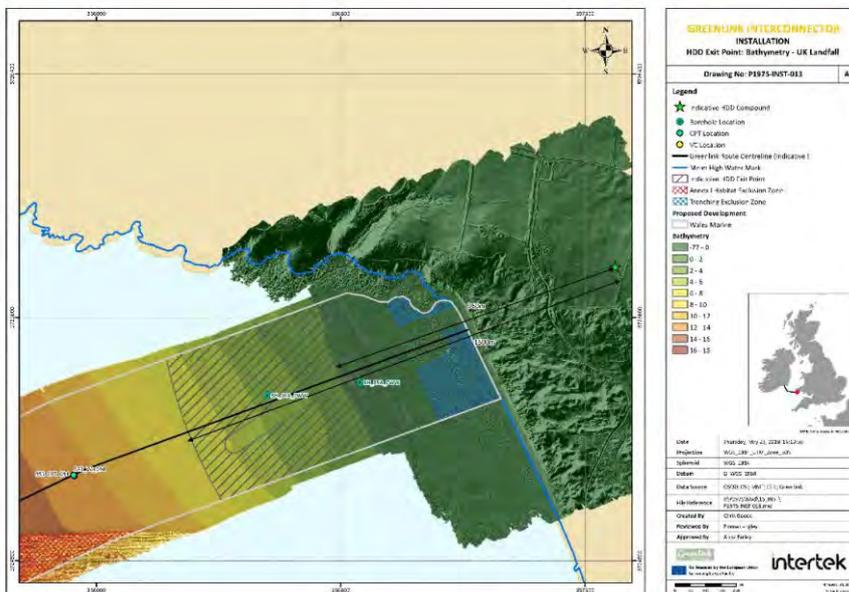
Details of project development presented

- 3.6.6 Boards presented can be found in Annex 8. The boards included were:

- Project benefits
- The proposal
- Why Greenlink?
- Greenlink in Wales
- Greenlink components
- Consultation
- Noise and vibration
- Local supply chain
- Site assessment - overview
- Landscape and visual impact
- Viewpoint locations
- Biodiversity
- Traffic and transport Routes 1
- Traffic and transport Routes 2
- Traffic and transport
- Socio economics
- Project timeline
- Offshore Ireland route
- Offshore Wales route development
- Planning
- Welsh landfalls
- Installation at Freshwater West
- Freshwater West Cable Installation
- Irish landfalls

- 3.6.7 Information correcting the misinformation presented in the petition was presented at the public exhibitions to reassure the public that Greenlink would not have an impact on the dunes or beach at Freshwater West. The relevant boards can be found in Figures 8 and 9.

INSTALLATION AT FRESHWATER WEST



To avoid impacts on the Broomhill Burrows SSSI dunes and the beach at Freshwater West it is proposed to install the cables using a Horizontal Directional Drill under the dune system and beach and beyond the low water mark.

This is the proposed installation method contained within the Marine Licence Application submitted to Natural Resources Wales.

Once the cables emerge the proposed cable route has been designed to avoid the most sensitive marine habitats.

For more information please visit: www.greenlink.ie

Figure 8 - Nearshore plan showing likely HDD cable exit point below low water mark presented at public exhibitions in June 2019

FRESHWATER WEST CABLE INSTALLATION

We are proposing to use a Horizontal Directional Drill (HDD) to install the cables at both Baginbun Beach (Ireland) and Freshwater West (Wales). Using this method of installation will ensure that cables can be installed without any impact on the beaches at both locations and will avoid any impact on the dune system at Freshwater West. The cable will emerge below the low water mark so no work will take place on either beach.

While the construction programme for the full project is anticipated to take around three years, construction work around each landfall would last for approximately 3 months and be scheduled to avoid the most popular periods of use.

Once the cables emerge the proposed cable route has been designed to avoid the most sensitive marine habitats.

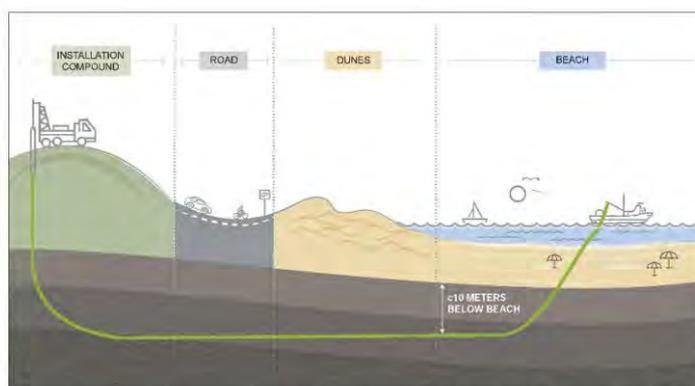


ILLUSTRATION OF HOW AN HDD MIGHT WORK

For more information please visit: www.greenlink.ie

Figure 9 - Plan illustrating an HDD cable installation presented at public exhibitions in June 2019

- 3.6.8 Updated transport plans were also presented incorporating the feedback from the April public exhibitions including the addition of Bush Street in Pembroke Dock as a potential transport route for abnormal loads.
- 3.6.9 The latest onshore development plan was presented with confirmed converter station (outlined red) and cable route identified. This is shown in Figure 10.

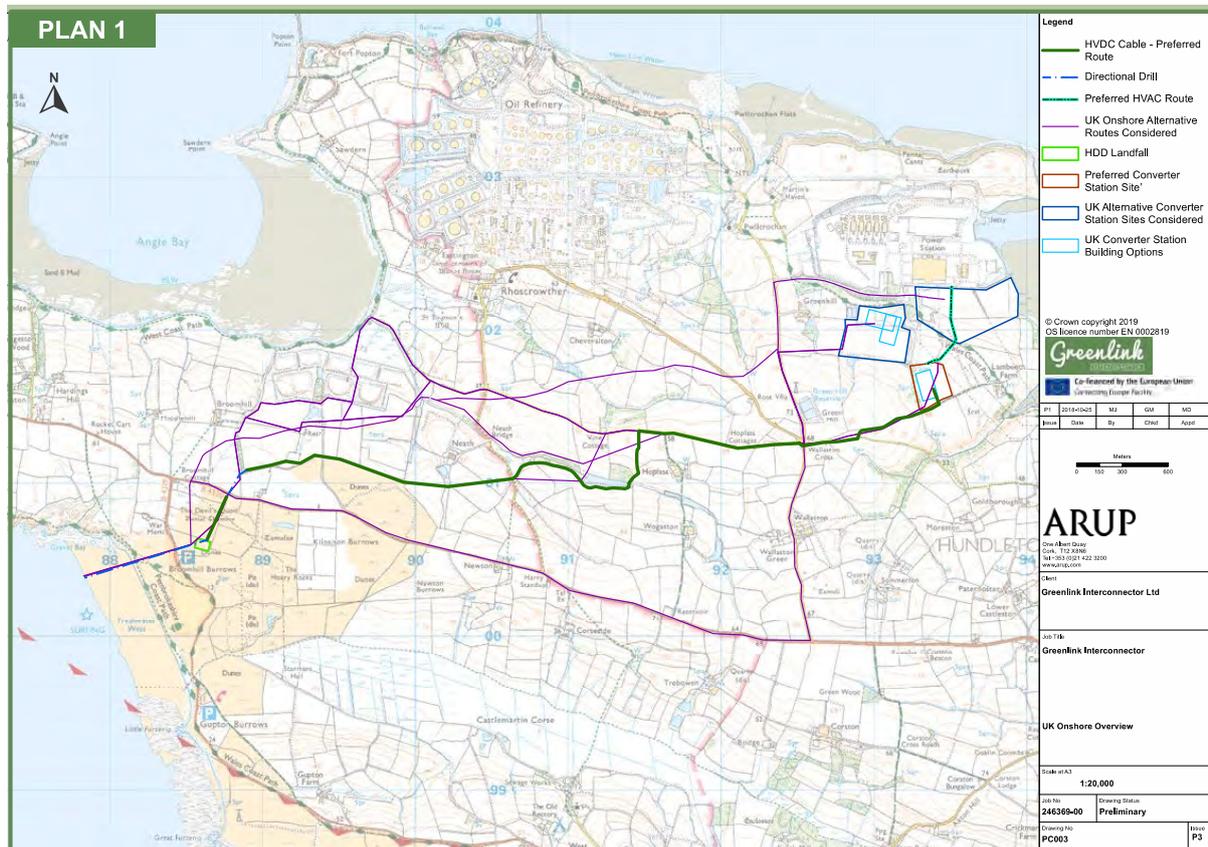


Figure 10 - Onshore project plan presented at public exhibitions June 2019

- 3.6.10 Following the completion of the subsea surveys a preferred cable route has been identified. The selected route and an explanation of the reasons behind its selection was presented at the public exhibitions.
- 3.6.11 Draft Marine Licence Application documents were also available for the public to view at the public exhibition for public comment ahead of the planned submission of planning documents to NRW for validation in June/July 2019.
- 3.6.12 A plan showing the elected offshore cable route can be found in Figure 11.

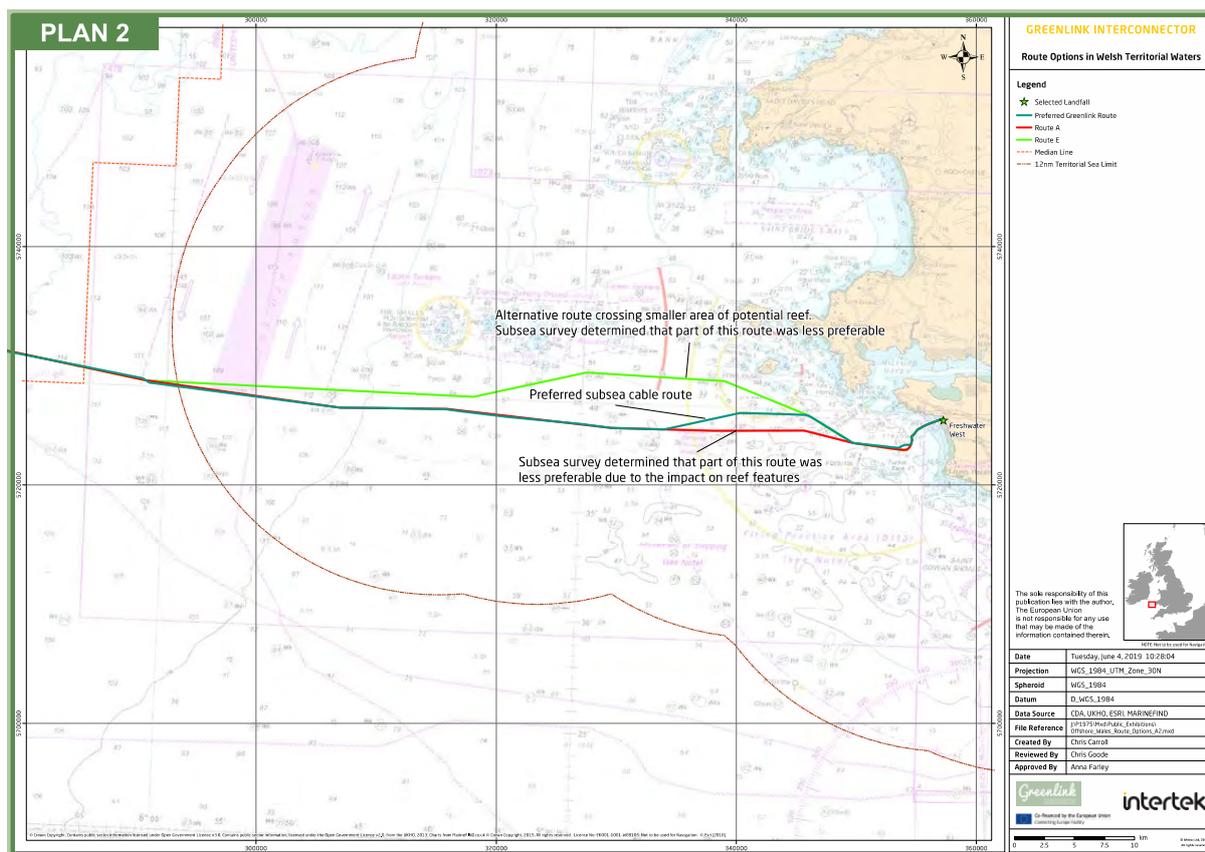


Figure 11 - Offshore cable route plan presented at public exhibitions June 2019

3.6.13 The June 2019 project brochure, found in Annex 4, was distributed at the public exhibitions.

Issues raised during consultation

3.6.14 Many of the public attending the public exhibitions wanted to discuss Greenlink's potential impact on Freshwater West having read the online petition. All left satisfied once the correct information had been provided.

3.6.15 Feedback was positive regarding GIL taking a responsible approach to development.

3.7 December 2019 public exhibitions and relevant consultation milestones

3.7.1 The boards and press notice relating to this round of public exhibitions can be found in Annex 9. The exhibitions were advertised in the press, on local noticeboards and via direct communication with landowners, local politicians, key stakeholders and members of the public who had requested to be kept informed of progress.

3.7.2 Details of the public exhibitions are shown below:

- 2 December 2019 - Sports Pavillion - Hundleton - 14:00 to 20:00
- 3 December 2019 - Angle Village Hall - Angle - 14:00 to 20:00
- 4 December 2019 - Pater Hall - Pembroke Dock - 14:00 to 18:00

- 5 December 2019 – Pembroke Town Hall – Pembroke – 14:00 to 20:00

Public consultation completed prior to public exhibitions

- 3.7.3 Consultation continued with landowners and environmental stakeholders to prepare final planning documentation to be submitted for pre-application planning consultation.
- 3.7.4 GIL gave a presentation to Angle Community Council on 4th September 2019 to present the latest onshore and offshore project information. No concerns were raised by members.
- 3.7.5 Key stakeholders including councillors, landowners and members of the public, that had requested to be kept informed of project progress, were kept informed via direct communication of the progress of the marine licence application and its validation by NRW. This was followed by the commencement of formal consultation on 13th November 2019 (scheduled to end on 8th January 2020). This consultation was advertised locally in the Western Telegraph and the application was made available on www.greenlink.ie.

Details of project development presented

- 3.7.6 Boards presented can be found in Annex 9. The boards included were:
- Project benefits
 - The proposal
 - Greenlink in Wales
 - Greenlink components
 - Consultation
 - Noise and vibration
 - Local supply chain
 - Site assessment - overview
 - Landscape and visual impact
 - Marine surveys
 - Biodiversity
 - Traffic and transport Routes 1
 - Traffic and transport Routes 2
 - Traffic and transport
 - Socio economics
 - Project timeline
 - Offshore Ireland route
 - Offshore Wales route development
 - Planning
 - Welsh landfalls
 - Installation at Freshwater West
 - Freshwater West Cable Installation
 - Irish landfalls
 - Marine licence application consultation (also available in Figure 12)
- 3.7.7 The full suite of Marine Licence application documentation was available to view at the public exhibitions along with details of how to respond to the consultation. The information can be seen in Figure 12.



Figure 12 – Details of Marine Licence Application Consultation presented at public exhibitions December 2019

- 3.7.8 The project offshore and onshore plans presented were the same as shown in Figures 10 and 11.
- 3.7.9 Draft onshore planning documents were made available for public comment so that GIL could finalise planning documentation ready for pre-application consultation.

Issues raised during consultation

- 3.7.10 No material issues were raised during the consultation

3.8 Consultation since December 2019 public exhibitions

- 3.8.1 The formal consultation has concluded on the Marine Licence Application. The consultation period was extended to 22nd July for some key stakeholders to reflect the pressures of the winter break. No material public issues have been raised and GIL will continue to work with local commercial fishing interests throughout the delivery of Greenlink.
- 3.8.2 Pre-application consultation ran from 18th December 2019 until 22nd January 2020. All Welsh onshore planning documents were available on www.greenlink.ie throughout this period. Details of the pre-application consultation can be found in the Pre-Application Consultation Report submitted with the final suite of planning documents for onshore Wales.

4 Conclusion

4.1 Consultation programme

4.1.1 The public consultation undertaken to support the Greenlink development process, in Wales, has followed the methodology set out in the Concept of Public Participation and played an important role in shaping the design and delivery of the project.

4.1.2 Press articles related to the development process can be found in Annex 13.

Appendices

- Annex 1 - Concept of Public Participation (Wales) Rev 1 (05/10/2018)
- Annex 2 - TEN-E Regulation Information Brochure - May 2018
- Annex 3 - TEN-E Regulation Information Brochure - November 2018
- Annex 4 - TEN-E Regulation Information Brochure - June 2019
- Annex 5 - TEN-E Regulation Information Brochure - December 2019
- Annex 6 - Public Exhibition - May 2018
- Annex 7 - Public Exhibition - December 2018
- Annex 8 - Public Exhibition - June 2019
- Annex 9 - Public Exhibition - December 2019
- Annex 10 - Angle Community Council Presentations
- Annex 11 - Pembroke Town Council Presentation
- Annex 12 - Transport Public Exhibition - Pembroke
- Annex 13 - Press Articles
- Annex 14 - Feedback Form
- Annex 15 - Petition

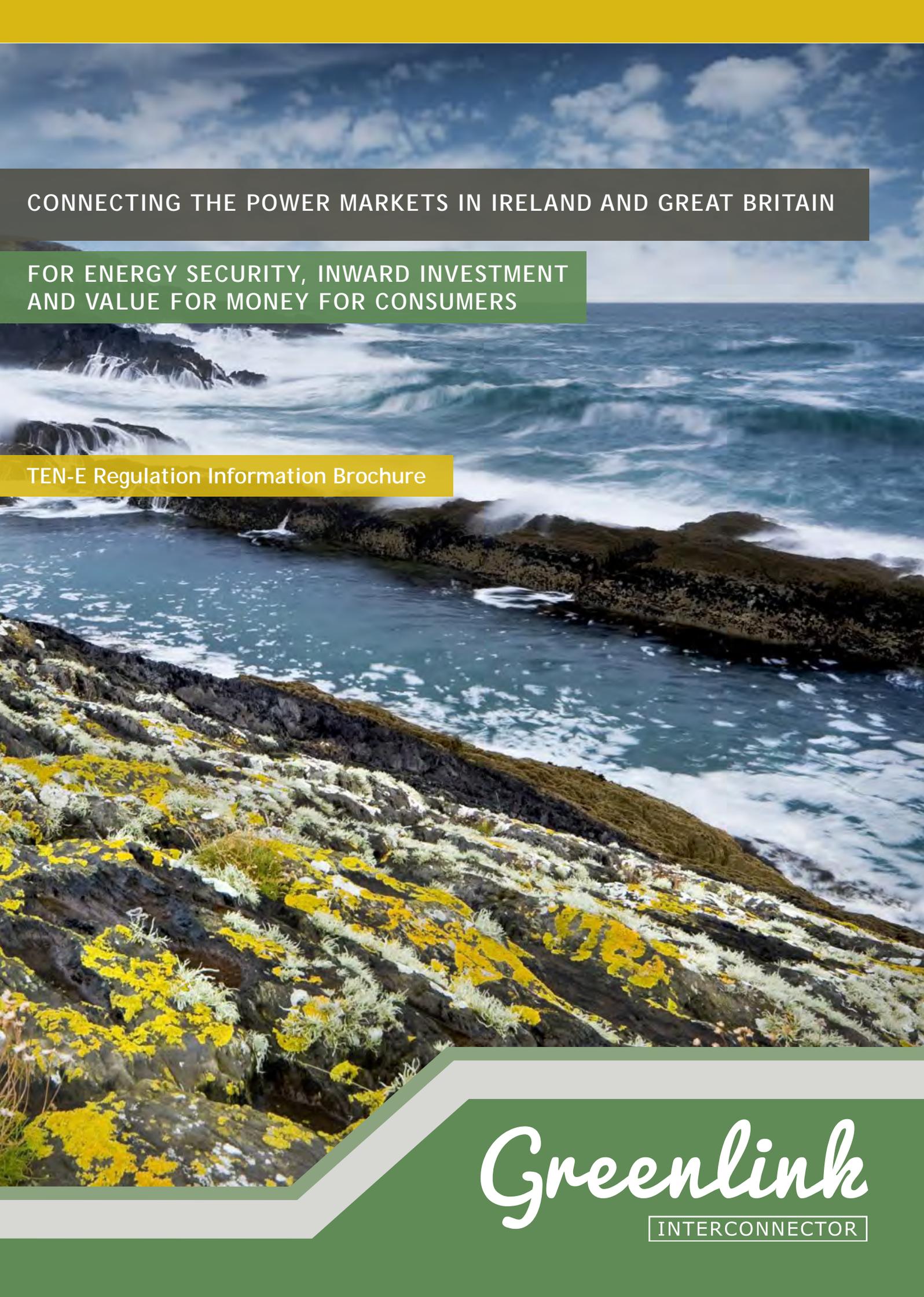
Annex 1

Concept of Public
Participation (Wales) -
Please refer to Appendix
1.2, Volume III of the
Environmental Statement



Annex 2

TEN-E Regulation Information Brochure – May 2018

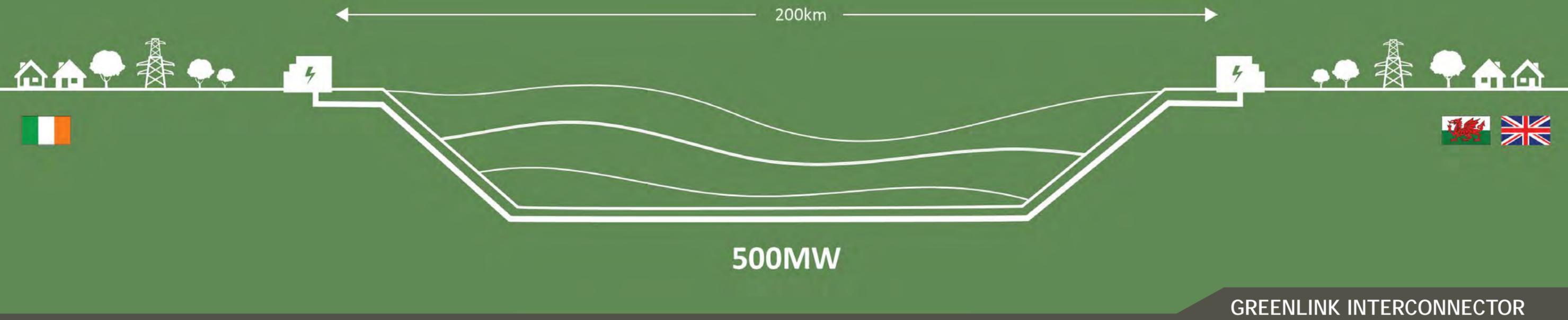


CONNECTING THE POWER MARKETS IN IRELAND AND GREAT BRITAIN

FOR ENERGY SECURITY, INWARD INVESTMENT
AND VALUE FOR MONEY FOR CONSUMERS

TEN-E Regulation Information Brochure

Greenlink
INTERCONNECTOR



Consents required to construct the projects are expected to include:

	Wales	Ireland
Converter station	Planning permission - major development - Pembrokeshire County Council	Planning permission - Strategic Infrastructure Development - An Bord Pleanála Authorisation to construct - Commission for the Regulation of Utilities
Onshore cable route	Lawful Development Certificate	Planning permission - Strategic Infrastructure Development - An Bord Pleanála Consent to lay electricity lines across lands - Commission for the Regulation of Utilities Consent to lay electricity lines under the public road - Commission for the Regulation of Utilities
Marine cable	Marine Licence - Natural Resources Wales Marine Works Licence - Milford Haven Port Authority	Foreshore Licence - Department of Housing, Planning and Local Government (Foreshore Unit)

STATUS OF THE PROJECT: The project is in the pre-planning phase. Throughout this phase of the project we will be consulting all key stakeholders, including the public, to ensure that they can input into the development process.

Greenlink is a proposed 500 megawatt (MW) subsea and underground cable electricity interconnector (with associated converter stations) between the existing electricity grids in Ireland and Great Britain (GB), allowing for electricity to flow both ways between the two countries. The project will provide a new grid connection between EirGrid’s Great Island substation in County Wexford (Ireland) and the National Grid’s Pembroke substation in Pembrokeshire (Wales).

Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland, GB and continental Europe. The construction and development of Greenlink will deliver: increased energy security; inward investment and value for money to consumers; and enable the further integration of low carbon renewable energy sources.

Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe’s most important energy infrastructure projects and granting it the “highest national significance” possible.

Greenlink will consist of two converter stations, each located close to the Great Island substation in County Wexford and Pembroke substation in Pembrokeshire. The converter stations will be connected by two high voltage direct current (HVDC) cables under the Irish Sea. A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa.

DC electricity is typically used for the transmission of electricity over long distances because it has lower losses, negligible heating effects and is therefore suitable to be buried underground. Accordingly, there will be no overhead lines between the two converter stations. Onshore the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built. The Greenlink interconnector is planned for commissioning in 2023.

The project will require planning permission in Ireland and in Wales.



380,000

Potential to power
380,000 homes*



Security

Enhances the
security of supply for
electricity consumers



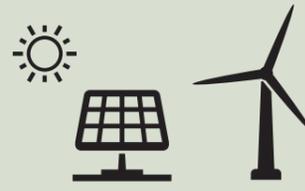
€400m

of private capital
investment for
Ireland and Wales



Value for Money

Downward pressure
on electricity bills



Energy

Supports the growth
and integration of
low carbon energy



Jobs

Jobs and knock-on
economic benefits
during construction

Inward investment and jobs

Greenlink represents €400m (£350m) of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid

Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

Security of supply

The construction of Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy

Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition

Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

*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.

Great Britain

National Grid is the Electricity System Operator for the whole of GB and operates the electricity transmission network in Wales and England including the 400kV network and substation at Pembroke. In its role as System Operator for GB, National Grid publishes plans and assessments for the economic and efficient development of the GB electricity transmission networks:

- » In Future Energy Scenarios (FES), National Grid considers different potential future impacts on the electricity system. In the 2017 FES the amount of interconnection capacity could reach 19GW by 2030 compared to 4GW today.
- » In the Network Options Assessment (NOA), National Grid carries out economic analyses to determine which transmission investments are efficient. The 2017/18 NOA recommends additional interconnection from GB to Ireland, beyond the 1.5GW capacity provided by Greenlink and the existing interconnectors (East West Interconnector (EWIC) and Moyle).
- » The Electricity Ten Year Statement (ETYS) includes data on the existing and planned transmission networks in GB and the ETYS 2017 references Greenlink as one of the planned interconnectors that has a connection agreement with National Grid.

Ireland

EirGrid is the Electricity System Operator for Ireland and with its subsidiary, SONI, operates the island of Ireland's electricity system. In its role as System Operator for Ireland, EirGrid publishes a ten year transmission development plan.

- » Greenlink is part of Transmission Development Plan 2016-2026, is referenced as part of the European Ten Year Network Plan 2016 (ENTSO-E TYNDP 2016) and as a PCI. The document notes that interconnection assists in increasing Security of Supply and Competition and has been addressed in the plan.

Offshore studies and assessments

The subsea cable route is expected to be up to 170km long. The final length of the cable will depend on the findings of subsea surveys as well as ongoing consultation with key stakeholders. Initial cable route selection has centred on desk-based work and the assessment of known data and constraints. Environmental and technical constraints will be assessed and the route that offers the best solution to challenges identified while maintaining the shortest route solution will be chosen as the preferred route.

Subsea surveys are intended to take place in 2018 in order to identify constraints facing the subsea cable routes and enable a preferred option to be selected.

The results of the subsea surveys will not only aid the selection of the preferred cable route but also the appropriate installation and protection methods to be adopted.

Technical and environmental assessment

As part of the project development, a series of technical and environmental assessment studies are being carried out to establish the viability of all the proposed converter sites and cable routes and to consider any potential impacts and opportunities arising from the project development. Greenlink is a cross-border project and no adverse cross-border impacts are expected.

Onshore studies and assessments

Biodiversity

Surveys will be carried out and the data assessed to ensure that the final onshore elements of Greenlink are designed sympathetically to the local environment and wildlife and where possible enhancement measures will be employed.

Surveys will cover the landfall sites, the various cable routes under consideration and the possible converter station locations.



As well as birds, wildlife to be considered by these assessments also include badgers, bats, otters, water voles, reptiles, great crested newts and dormice. Consideration is also being given to local vegetation, including hedgerows, trees and important habitats.

Our surveys and assessments will be verified and consulted on by Natural Resources Wales and the National Parks and Wildlife Service in Ireland. Consideration is also being made of local vegetation, including hedgerows, trees and important habitats.

Historic environment

The potential effects of Greenlink on local archaeology and cultural heritage will be assessed by seeking to identify, predict and evaluate the significance of potential effects on designated and non-designated heritage assets.

To mitigate any potential impacts, Greenlink will consider the predicted impacts of the proposed scheme and will aim to avoid adverse effects. Wherever possible, mitigation will be designed to deliver benefits, such as enhancing the visual setting of historic assets.

Greenlink will aim to avoid undisturbed archaeological remains and preserve them in situ. Where this is not possible, preservation by record will be proposed as mitigation.

Landscape & visual impact

This assessment relates to changes in the physical landscape, brought about by the proposed development, which may alter its character and how this is experienced.

Greenlink will produce visualisations of the converter stations from viewpoints that will be selected to represent the character of the area and particularly important landscape and heritage sites. Suitable mitigation, such as landscaping, building finishes and design layout, will be proposed.

Flooding and hydrology

This assessment considers the existing surface and ground water resources in the proximity to Greenlink. It will assess potential impacts to water bodies, surface water drainage and flood risk due to the proposed scheme during the construction and operational phases. The results of this assessment will be incorporated into the final design.

Geology & hydrogeology

This assessment considers the existing ground conditions present in the vicinity of the various scheme components and addresses the potential effects that the construction and operation of the project may have on the geological and hydrogeological characteristics of the study area.



ILLUSTRATION: WSP

The assessment will include consideration of possible effects on the superficial geology (soils), solid geology and geomorphology, including mineral resources beneath the proposed route of the scheme. The groundwater beneath the site and surrounding area will be considered. The results of this assessment will be incorporated into the final design and delivery of the proposal to mitigate any potential impact.



ILLUSTRATION: WSP

Noise & vibration

This assessment will address potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station. The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors will be determined via noise surveys.

Noise sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship, etc) and open public spaces (including public footpaths).

The results of this assessment will be incorporated into the final design.

Traffic & transport

The traffic impact assessment will address the traffic impacts on the local road network from the construction and operation of the Greenlink project.



The assessment will include the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce will also be addressed.

A Transport Assessment or Transport Statement will be produced in accordance with best practice.

As part of the planning application process a Traffic Management Plan (TMP) will be put together that will outline measures for managing and mitigating the construction traffic caused by Greenlink. Greenlink will consult the local community on a draft TMP to ensure that all considerations of local amenity have been incorporated and that members of the local communities are satisfied with the mitigation measures being proposed.

Electromagnetic fields (EMFs)

The Greenlink electrical infrastructure (converter station and underground cables) will be designed to comply with the EC Directive relating to Occupational Exposure to Public Health and the EU 1999 recommendation on Public Exposure.

Use of agricultural land

Construction of the converter station will result in the permanent loss of land from agricultural use. Land disturbed during the construction of the landfall and cable will be reinstated and therefore there will be no permanent loss of agricultural land associated with the landfall or cable route.



Socio-economics & human health

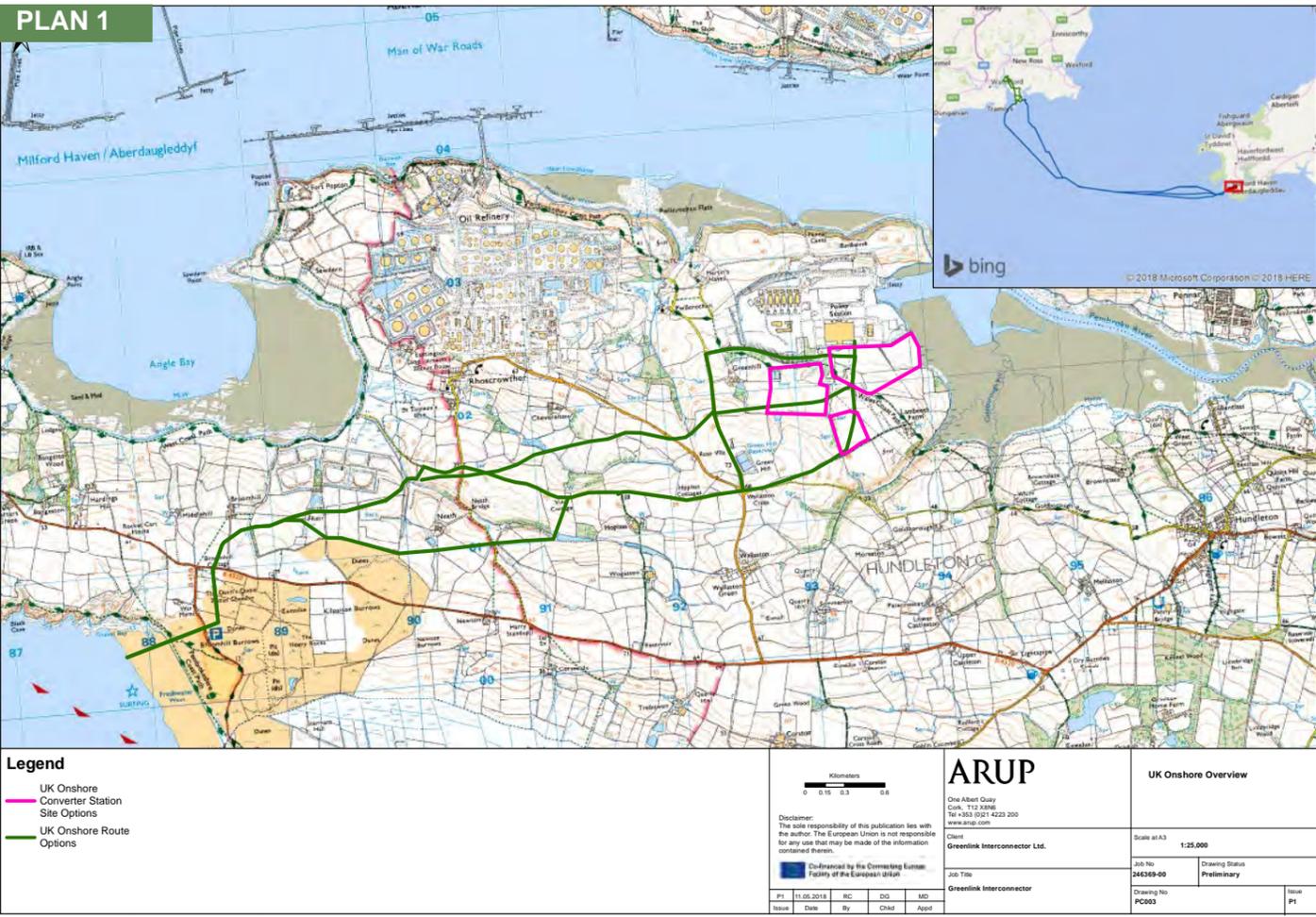
This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects on the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy. The results of this assessment will be incorporated into the final design and delivery of the proposal to mitigate any potential impact and maximise benefits.

Air quality & climate change

This assessment considers the potential impacts on air quality during construction, including dust emissions, on-site machinery and construction traffic travelling to and from the site. The potential impacts on air quality during the operational phase will also be addressed.



Following the assessment of air quality effects during the construction phase, mitigation measures will be recommended to minimise the impact from dust. These measures, including dust suppressant measures, will be considered for both human and ecological receptors.

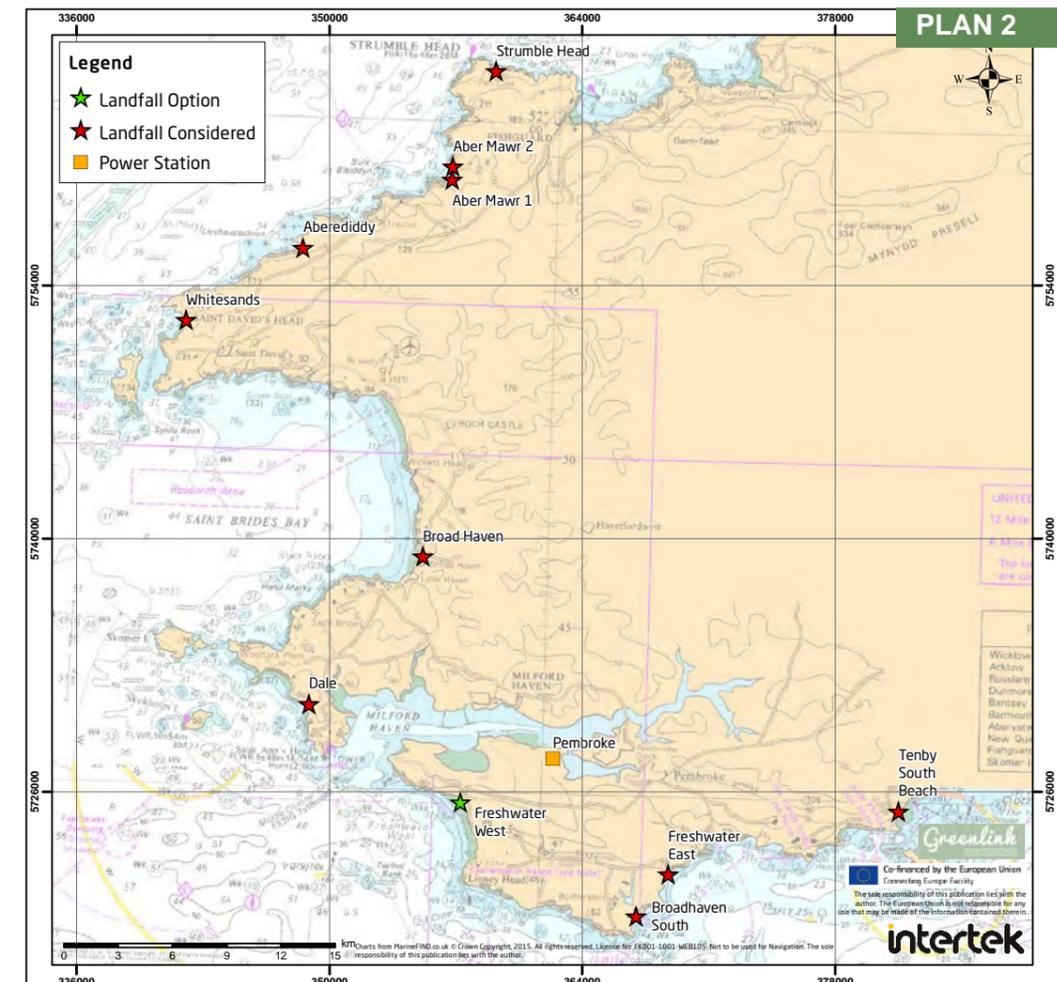
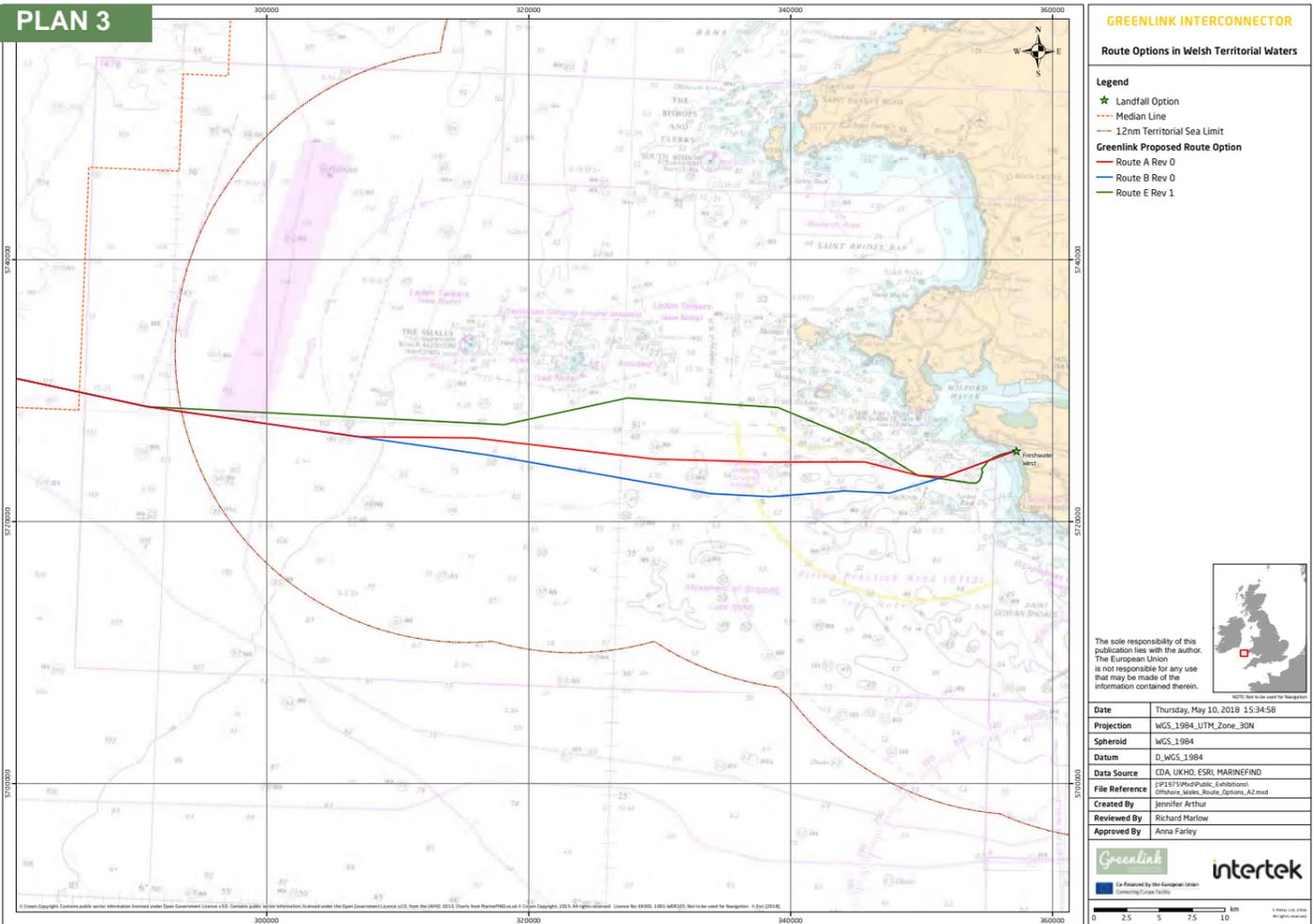


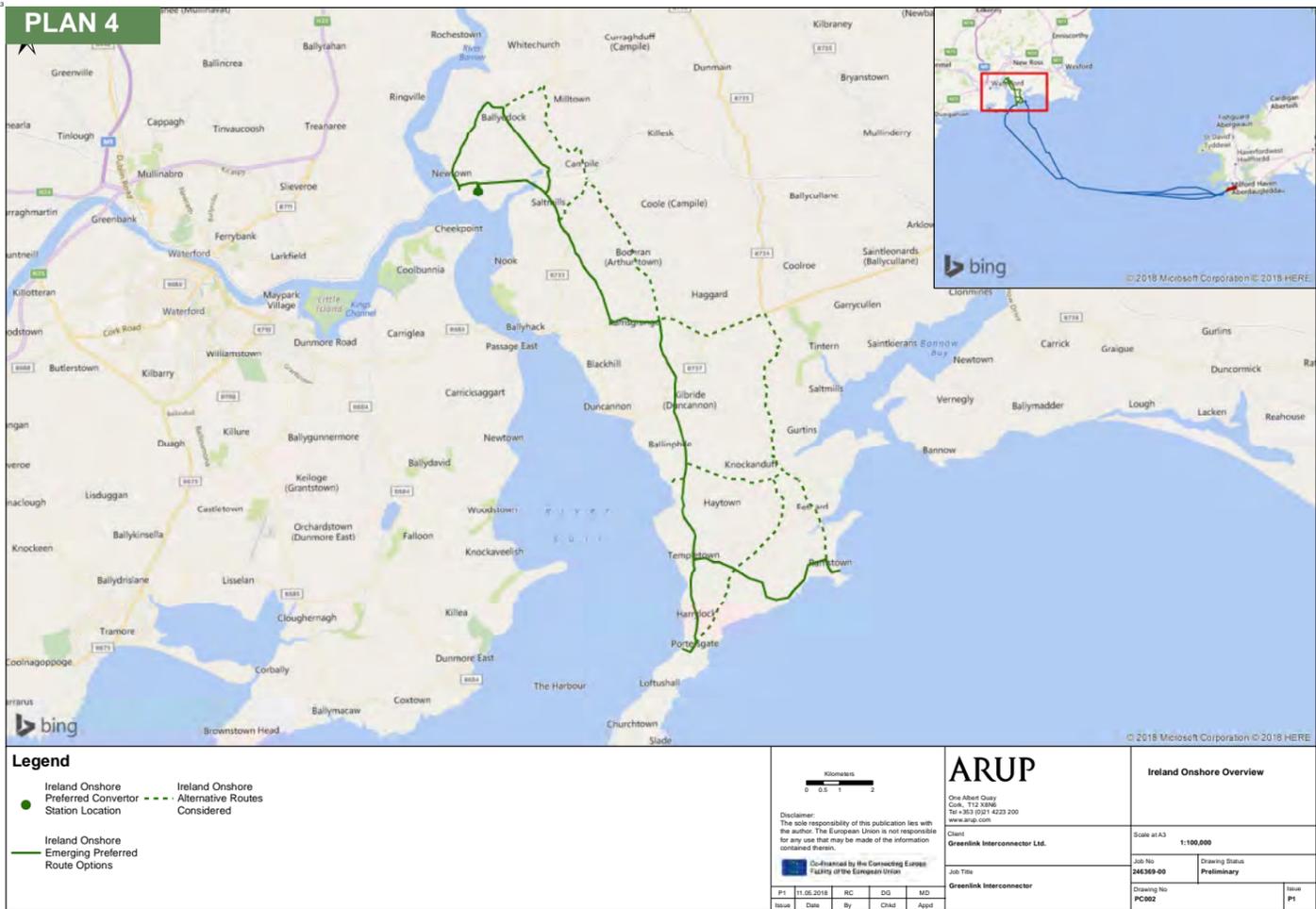
In Wales, Greenlink will connect to the Pembroke 400kV substation in Pembrokeshire. The substation at Pembroke was identified as the connection point for Greenlink following the completion of assessments and consultation with National Grid. AC cables will connect the HVDC converter station to the substation. Three sites, in close proximity to the substation, are currently being assessed as potential locations to locate the HVDC converter station. The sites under investigation are shown in Plan 1 along with potential onshore underground cable routes linking the proposed landfall site at Freshwater West with the converter station sites.

The final converter station site and cable route will be selected following environmental and technical assessments and consultation with key stakeholders. The length of the onshore cable route could be circa. 7km. The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in Plan 2.

It is currently proposed that the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the dunes and beach at Freshwater West. HDD is a trenchless method of installing underground cables. Further technical assessment work will be undertaken before the installation methodology is finalised.

There are currently three subsea routes being assessed off the Welsh coast. The routes under assessment are shown in Plan 3. The final route will be selected following the conclusion of subsea surveys and consultation with stakeholders.





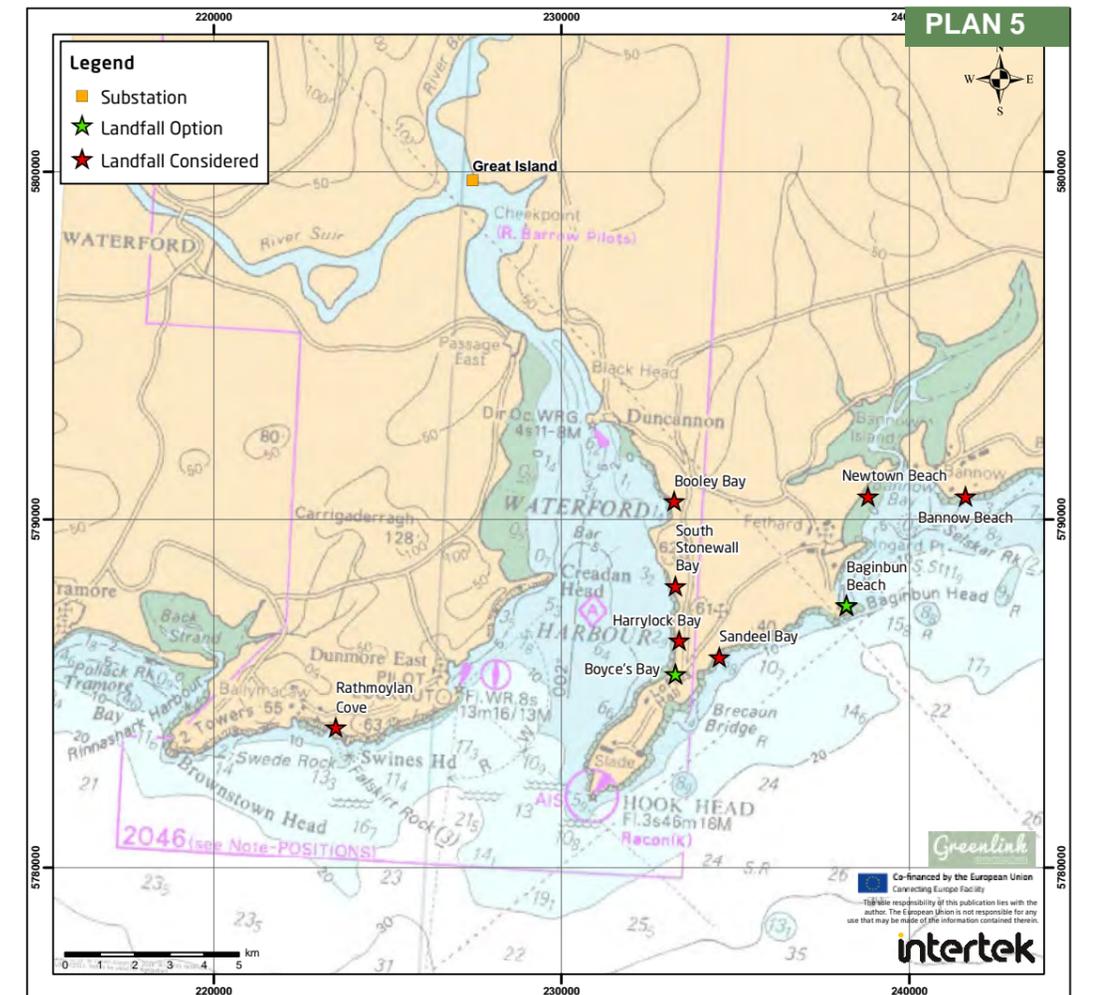
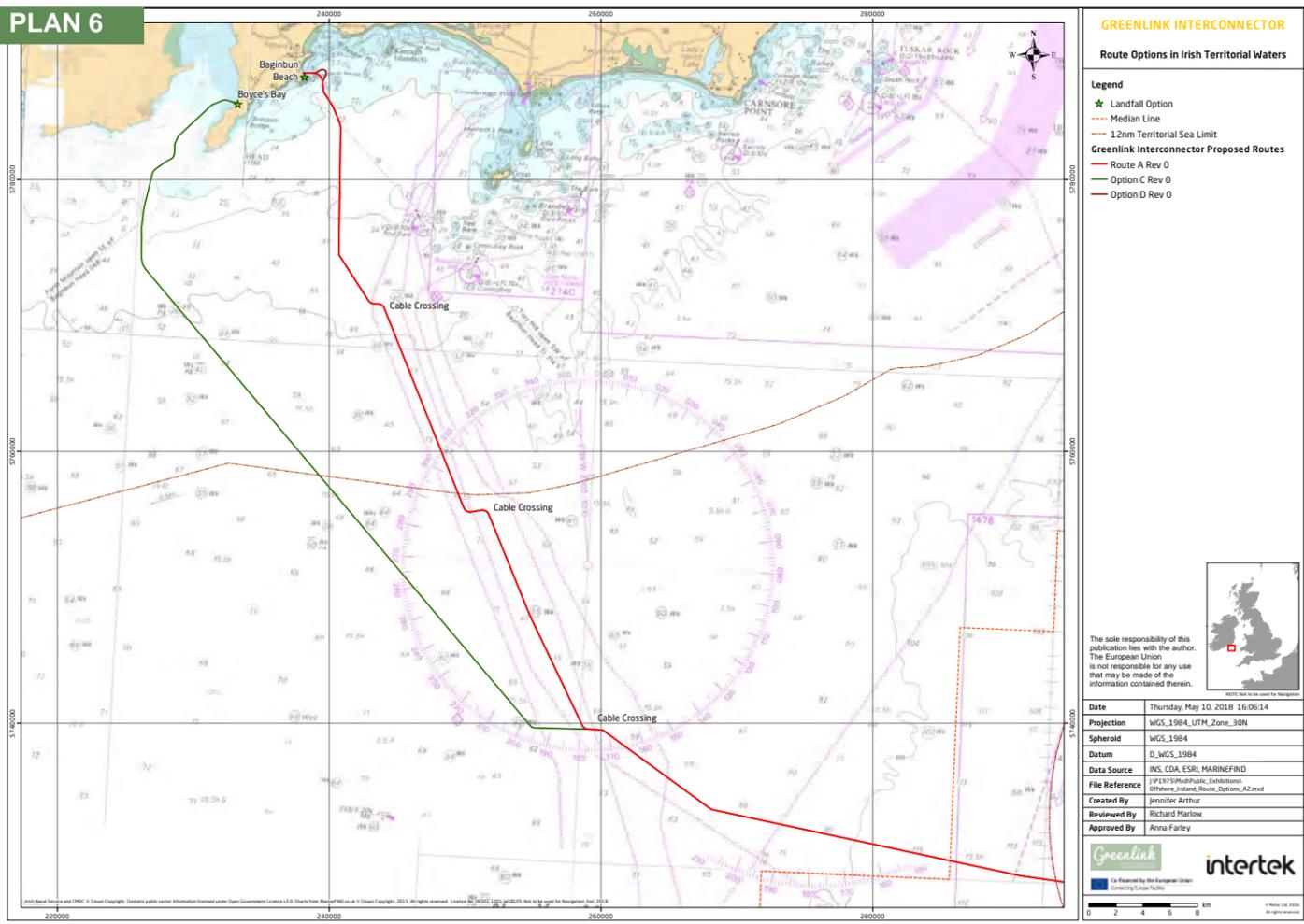
In Ireland, Greenlink will connect into the Great Island 220kV substation in County Wexford. The substation at Great Island was identified as the connection point for Greenlink following the completion of assessments and consultation with EirGrid. A high voltage AC conductor will connect the HVDC converter station to the substation. A site adjacent to the substation is currently being assessed as a potential location to locate the HVDC converter station. The site under investigation is shown in Plan 4 along with potential onshore underground cable routes linking the two potential landfall sites, at Boyce's Bay and Baginbun Beach.

The final converter station site and cable route will be selected following environmental and technical assessments and consultation with key stakeholders. The length of the onshore cable route could be circa. 28km.

The landfalls at Boyce's Bay and Baginbun Beach were selected for further investigation following a review of potential landfall sites in the region. The landfalls assessed are shown in Plan 5.

It is currently proposed that the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the cliff edge and beach at both potential landfalls. Further technical assessment work will be undertaken before landfall site and installation methodology are finalised.

There are currently two subsea routes being assessed off the Irish coast. The routes under assessment are shown in Plan 6. The final route will be selected following the conclusion of subsea surveys and consultation with stakeholders.





Technical viability

Marine surveys are taking place in the summer of 2018 and will include geophysical and geotechnical surveys.

Geophysical

The geophysical survey will look to map the seabed and sub-surface geology along the proposed routes to identify marine habitats, optimise cable routing within the survey corridor and to enable assessment of cable target burial depth along the route. It will also look to provide the geophysical data from which a marine archaeological assessment can be undertaken as part of the consenting process.

Geotechnical

The purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This will be done using a number of techniques, including drilling boreholes and digging trial pits.

Environmental impacts

The initial marine survey aims to map the distribution and extent of marine habitats within the proposed cable corridor. Data from this survey will then be used to inform the environmental assessment.

Marine environmental assessments

Greenlink will cross a number of European Marine Protected Sites; Special Areas of Conservation designated for the protection of habitats and species, and Special Protection Areas designated for the protection of wild birds. To determine if the project is likely to have a significant effect on the conservation objectives of the sites, Habitat Regulations Assessment will be carried out. The process identifies any potential impacts the project may have on the site and assesses whether it is likely that the feature of the site will be affected. Where the project is likely to undermine the conservation objectives of the site e.g. it is possible that condition, characteristics, or distribution of the feature

cannot be maintained, then mitigation measures are proposed to manage or reduce the potential negative impacts identified.

In accordance with best practice, Environmental Reports will be completed for the marine components of the project in both the Ireland and Wales. The Habitats Regulation Assessment will form part of this larger environmental appraisal.

Topics covered by the environmental assessment will include:

- » Coastal processes
- » Protected sites
- » Benthic ecology
- » Fish and shellfish
- » Marine birds
- » Marine mammals and reptiles
- » Marine archaeology and unexploded ordnance
- » Fisheries
- » Shipping and navigation
- » Recreation and other sea users
- » Cumulative effects

The potential impacts to be assessed include:

- » Penetration and/or disturbance of the substrate below the surface of the seabed and effects on benthic communities and fish spawning
- » Disturbance e.g. to birds, fish and marine mammals
- » Transient underwater noise changes because of cable installation equipment and project vessels
- » Temporary siltation rate changes from trenching activity
- » Permanent, local, hydrological changes resulting from cable protection rock berms
- » Physical loss (permanent change) of localised areas of marine habitat
- » Localised electromagnetic changes and potential effects on fish, marine mammals and shipping
- » Temporary, localised displacement of fishing activity and disruption to shipping routes.
- » Possible in-combination effects

Most of the environmental impacts from cable installation are temporary and transient. For example, temporary disturbance of sea birds through the presence of project vessels, temporary increases in suspended sediment levels associated with trenching.

Steps are taken during the design of the project to ensure that environmental impacts are minimised where possible e.g. HDD under sensitive coastal features, routing around sensitive offshore habitats, avoiding known marine archaeology features such as wrecks. Best practice will also be followed to further reduce the significance of any potential impacts.

The proposed cable route crosses two Special Areas of Conservation which protect stony and bedrock reef. High resolution bathymetry data has been obtained by Greenlink in nearshore areas to assist routeing through features.

The proposed marine survey will also provide essential information to assist in confirming the presence/absence of features offshore, allow routeing around and if possible through features e.g. using sand channels between patches of reef, and in identifying suitable installation techniques that minimise effect on the habitat.

Mitigation

Where a potential impact is established, the environmental appraisal will recommend mitigation measures to be taken to reduce or remove the significance of the effect. Suitable mitigation will be established through consultation with stakeholders.



Greenlink will use high voltage direct current voltage source converter (HVDC VSC) technology to link the two power systems. HVDC has been selected over an AC connection, because AC is technically difficult over this distance. VSC technology has the main benefit that it reduces the size of the converters (when compared to similar technologies).

The Greenlink Interconnector converter station

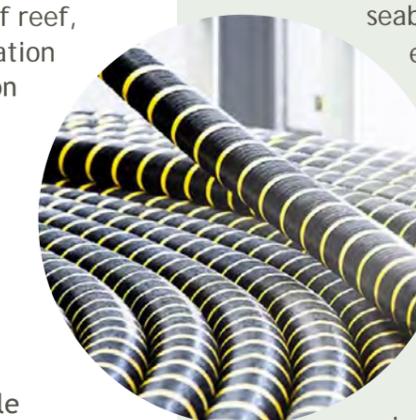
The indicative converter station site footprint would be circa. 1.85 hectares (185m x 100m).

A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonics filters, lightning towers, ancillary plant such as cooling bank and diesel generators, and a control building. Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. The converter hall and main building are usually one continuous building with height difference. The layout of the converter station and final dimensions will depend on the local terrain, physical constraints, the results of environmental surveys, consultations and the supplier's technical requirements.

OFFSHORE CABLES

Approximately 170km of the Greenlink cable route will be laid offshore. The final routes will be selected following a detailed assessment of the marine environment and technical challenges.

The cables will predominantly be buried in the seabed however where the geology or marine environment does not lend itself to this a cable may be laid on the seabed with protection added. Protection could be in the form of concrete mattress or rock dumping on top of the cable.



ONSHORE CABLES

One of the benefits of HVDC cables is the relatively small footprint required to install them underground onshore. It is anticipated that the Greenlink onshore cables will be buried within the road network or in private or agricultural land as appropriate.

Onshore cable technology and installation techniques

The two onshore HVDC cables will be buried underground in a single trench with a typical depth of cover of 850mm. These will be installed in plastic duct to simplify the construction process. It is usual for the two ducts to be positioned close together (approximately 300mm). A protective cover and warning tape will also be buried along with marker posts at regular intervals at ground level. This arrangement is shown in Figure 1.

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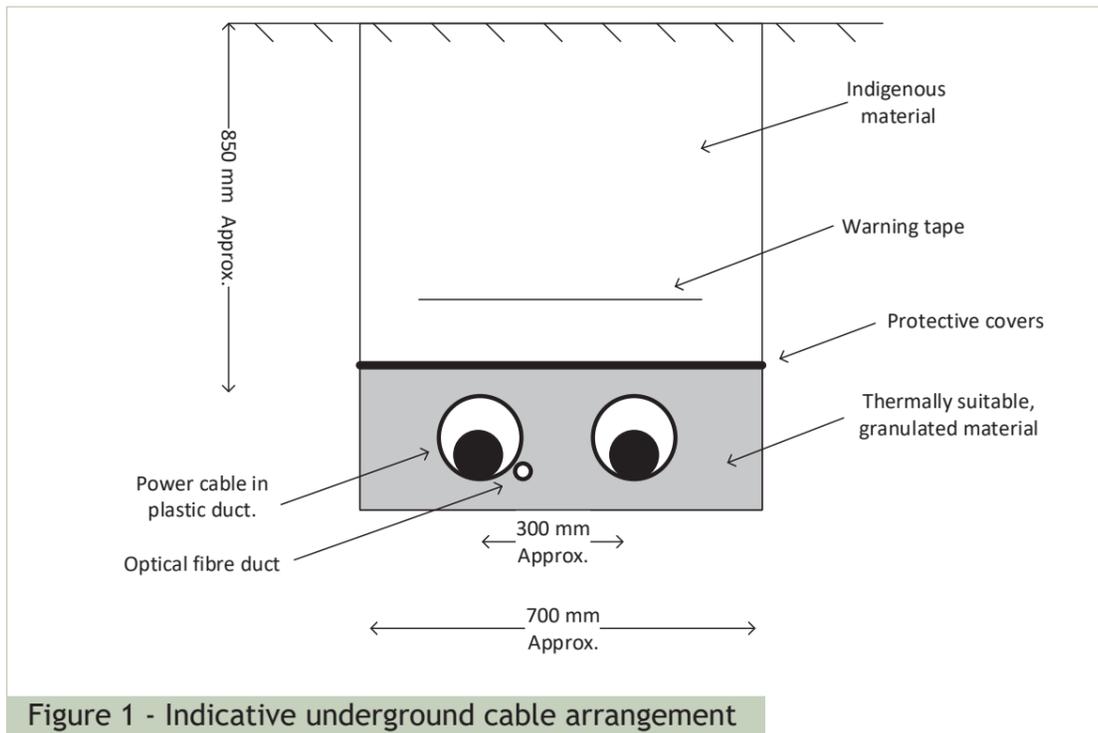


Figure 1 - Indicative underground cable arrangement

It is usual to increase the depth of cover in agricultural land to around 1050mm (increase from 850mm). The width of the trench may also vary with depth of cover (the deeper the cables are buried the wider the trench may become). A specific design would need to be engineered for utility crossings, crossing watercourses or other areas where the ordinary depth of cover cannot be achieved.



PHOTO: Deep Ocean



Onshore Cable Installation



PHOTOS: WSP

Project Timeline



A large infrastructure project such as Greenlink takes several years from concept to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have to be identified and fully assessed to ensure that they are considered within the final design of an infrastructure project. Detailed environmental and technical assessment surveys commenced in 2018. This follows the completion of desk-based assessments and consultation with statutory consultees. Once a detailed proposal and design are completed, permits and licences will need to be obtained from: Pembrokeshire County Council, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government - Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will be constructed, which is expected to be approximately 36 months from start to finish.

The project is envisaged to commence on-site construction in 2020 and be fully operational in 2023.

An important energy infrastructure project

The “Energy Union” launched by the European Commission on 25th February 2015 is driving a fundamental transition towards more innovative ways to produce, transport and consume energy, and to address different approaches to the design and implementation of energy policy.

Facilitating the Union requires a range of actions, chief amongst them being an increase in the physical interconnectedness of the EU and surrounding country energy grids (both gas and electricity) to meet a 10% interconnection target by 2020 and to reach 15% by 2030.

An interconnected European energy grid is vital for Europe’s energy security, for more competition in the internal market resulting in more competitive prices as well as for better achieving the decarbonisation and climate policy targets that the European Union has committed to. An interconnected grid will help deliver the ultimate goal of the Energy Union, i.e. to ensure affordable, secure and sustainable energy, and also growth and jobs across the EU.

Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe’s most important energy infrastructure projects.

- » For information regarding the infrastructure transparency platform referred to in Article 18 of the TEN-E Regulation, please visit: http://ec.europa.eu/energy/infrastructure/transparency_platform/map-viewer/main.html
- » For information regarding the manual of procedures for each of UK and Ireland https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311184/uk_manual_procedures_ten_e_regulation.pdf and www.pleanala.ie/publications/2014/pocimanual.pdf

Greenlink

INTERCONNECTOR

GREENLINK INTERCONNECTOR LIMITED

The Greenlink Interconnector is being developed by Greenlink Interconnector Limited.

Greenlink Interconnector Limited is 100% owned by Element Power Holdings, a leading global developer of renewable energy, energy storage, flexible generation and interconnection projects.

Element Power has significant experience in developing energy infrastructure projects, with established teams of experienced engineers, environmental and financial professionals covering both the UK and Ireland.

For more information on Greenlink, please visit our website: www.greenlinkinterconnector.eu

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elementpower

Version 1 | May 2018



Annex 3

TEN-E Regulation Information Brochure – November 2018

Greenlink

INTERCONNECTOR

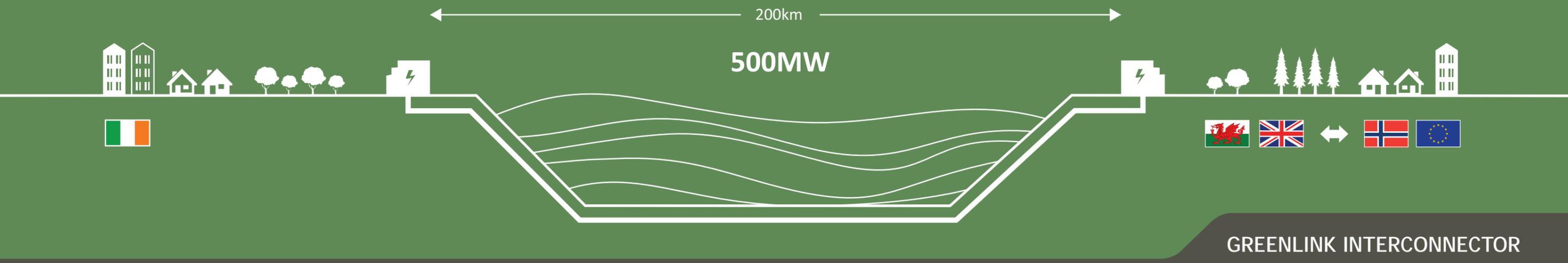


CONNECTING THE POWER MARKETS IN IRELAND AND GREAT BRITAIN

for energy security, regional investment and value for money for consumers

TEN-E REGULATION INFORMATION BROCHURE

Issue 2 - November 2018



GREENLINK INTERCONNECTOR

This Greenlink brochure provides an update of the project information contained within the first brochure published in May 2018 and forms part of the ongoing stakeholder consultation process.

Consents required to construct Greenlink are expected to include:

	Wales	Ireland
Converter station	Major Development - Pembrokeshire County Council	Strategic Infrastructure Development - An Bord Pleanála Authorisation to construct - Commission for the Regulation of Utilities
Onshore cable route	Major Development - Pembrokeshire County Council - Pembrokeshire Coast National Park Authority	Strategic Infrastructure Development - An Bord Pleanála Consent to lay electricity lines across lands - Commission for the Regulation of Utilities Consent to lay electricity lines under the public road - Commission for the Regulation of Utilities
Marine cable	Marine Licence - Natural Resources Wales Marine Works Licence - Milford Haven Port Authority	Foreshore Licence - Department of Housing, Planning and Local Government (Foreshore Unit)

IMPORTANT PLANNING UPDATE: ENVIRONMENTAL IMPACT ASSESSMENT

Since the previous round of public consultations Greenlink Interconnector Limited has decided to undertake a voluntary Environmental Impact Assessment (EIA) in support of the Greenlink project. This will result in the application documents facing an increased level of scrutiny from stakeholders. While it is recognised that Greenlink does not require an EIA, we have decided to undertake a voluntary EIA in recognition of the length of the permitting process and the evolving interpretation of the EIA regulations within Ireland. As a result of this decision the onshore cable route in Wales will now seek planning permission rather than being developed as permitted development.

Greenlink is a proposed 500 megawatt (MW) subsea and underground cable electricity interconnector (with associated converter stations) between the existing electricity grids in Ireland and Great Britain (GB), allowing for electricity to flow both ways between the two countries. Greenlink will provide a new grid connection between EirGrid's Great Island substation in County Wexford (Ireland) and the National Grid's Pembroke substation in Pembrokeshire (Wales).

Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland and GB with onward connections to continental Europe. The construction and development of Greenlink will deliver: increased energy security; regional investment and value for money to consumers; and enable the further integration of low carbon renewable energy sources.

Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe's most important energy infrastructure projects and granting it the "highest national significance" possible.

Greenlink will consist of two converter stations - one located close to the Great Island substation in County Wexford and the other close to the Pembroke substation in Pembrokeshire - connected by two High Voltage Direct Current (HVDC) cables under the Irish Sea. A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa.

DC electricity is typically used for the transmission of electricity over long distances because it has lower losses, negligible heating effects and is therefore suitable to be buried underground. Accordingly, there will be no overhead lines between the two converter stations. Onshore, the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built.

Greenlink is planned for commissioning in 2023.

The project will require planning permission in Ireland and in Wales.

STATUS OF THE PROJECT: The project is in the pre-planning phase. Throughout this phase of the project we will be consulting all key stakeholders, including the public, to ensure that they can input into the development process.



380,000

Potential to power 380,000 homes*



Investment

€400m/£350m of private capital investment for Ireland and Wales



Energy

Supports the growth and integration of low carbon energy



Security

Enhances the security of supply for electricity consumers



Value FOR Money

Downward pressure on electricity bills



Jobs

Jobs and knock-on economic benefits during construction

Regional investment and jobs

Greenlink represents around €400m/£350m of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid

Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

Security of supply

The construction of Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy

Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition

Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

*Figure for number of homes is based on typical annual Irish 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.

Great Britain

National Grid is the Electricity System Operator for the whole of GB and operates the electricity transmission network in Wales and England including the 400kV network and substation at Pembroke. In its role as System Operator for GB, National Grid publishes plans and assessments for the economic and efficient development of the GB electricity transmission networks:

- » In Future Energy Scenarios (FES), National Grid considers different potential future impacts on the electricity system. In the 2017 FES the amount of interconnection capacity could reach 19GW by 2030 compared to 4GW today.
- » In the Network Options Assessment (NOA), National Grid carries out economic analyses to determine which transmission investments are efficient. The 2017/18 NOA recommends additional interconnection from GB to Ireland, beyond the 1.5GW capacity provided by Greenlink and the existing interconnectors (East West Interconnector (EWIC) and Moyle).
- » The Electricity Ten Year Statement (ETYS) includes data on the existing and planned transmission networks in GB and the ETYS 2017 references Greenlink as one of the planned interconnectors that has a connection agreement with National Grid.

Ireland

EirGrid is the Electricity System Operator for Ireland and with its subsidiary, SONI, operates the island of Ireland's electricity system. In its role as System Operator for Ireland, EirGrid publishes a ten year transmission development plan.

- » Greenlink is part of Transmission Development Plan 2016-2026, is referenced as part of the European Ten Year Network Development Plan 2018 (ENTSO-E TYNDP 2018) and as a PCI. The documents note that interconnection assists in increasing security of supply and competition.
- » The Irish regulator determined, in October 2018, that Greenlink passed the test to be part of the Irish transmission system paving the way for Greenlink to move to the permitting phase.

Offshore studies

The subsea cable route is expected to be up to 170km long. The final length of the cable will depend on the completion of subsea surveys as well as ongoing consultation with key stakeholders. Initial cable route selection centred on desk-based work and the assessment of known data and constraints. This work identified several route corridor options that are currently being surveyed.

Subsea surveys commenced in September 2018 in order to identify and confirm the presence of any constraints facing the subsea cable routes. The environmental and technical constraints will be assessed in conjunction with the Irish and Welsh foreshore authorities. **The route that offers the best solution to challenges identified while maintaining the shortest route solution will be chosen as the preferred route.**

The results of the subsea surveys not only support the selection of the preferred cable route but also the appropriate installation and protection methods to be adopted.

Technical and environmental assessment

As part of the project development, a series of technical and environmental assessment studies are being carried out to establish the viability of the proposed converter sites and cable routes and to consider any potential impacts and opportunities arising from the project development. Greenlink is a cross-border project and no adverse cross-border impacts are expected.

Onshore studies and assessments

Biodiversity

Surveys are currently being carried out and the data assessed to ensure that the final onshore elements of Greenlink are designed sympathetically to the local environment and wildlife. Where possible enhancement measures will be employed.

Surveys cover the landfall sites, the cable routes under consideration and the possible converter station locations.



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This assessment considers the existing ground conditions present in the vicinity of the various scheme components and addresses the potential effects that the construction and operation of the project may have on the geological and hydrogeological characteristics of the study area.



ILLUSTRATION: WSP

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Noise & vibration

This assessment will address potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors will be determined via noise surveys.

Noise sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship, etc) and open public spaces (including public footpaths).

The results of this assessment will be incorporated into the final design.

Traffic & transport

The traffic impact assessment will address the traffic impacts on the local road network from the construction and operation of Greenlink.



The assessment will include the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce will also be addressed.

A transport assessment will be carried out in accordance with best practice.

An outline Traffic Management Plan (TMP) will be put together that will detail measures for managing and mitigating the construction traffic caused by Greenlink. We will consult the local community on the outline TMP to ensure that all considerations of local amenity have been incorporated and that members of the local communities are satisfied with the mitigation measures being proposed.

Electromagnetic fields (EMFs)

The Greenlink electrical infrastructure (converter station and underground cables) will be designed to comply with the EC Directive relating to Occupational Exposure to Public Health and the EU 1999 recommendation on Public Exposure.

Use of agricultural land

Construction of the converter station will result in the permanent loss of land from agricultural use. Land disturbed during the construction of the landfall and cable will be reinstated and therefore there will be no permanent loss of agricultural land associated with the landfall or cable route.



Socio-economics & human health

This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects on the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy. The results of this assessment will be incorporated into the final design and delivery of the proposal to mitigate any potential impact and maximise benefits.

Air quality

This assessment considers the potential impacts on air quality during construction, including dust emissions, on-site machinery and construction traffic travelling to and from the site. The potential impacts on air quality during the operational phase will also be considered.



Following the assessment of air quality effects during the construction phase, mitigation measures will be recommended to minimise the impact from dust. These measures, including dust suppressant measures, will be considered for both human and ecological receptors.

Greenlink in Wales

In Wales, Greenlink will connect to the Pembroke 400kV substation in Pembrokeshire. The Pembroke substation was identified as the connection point for Greenlink following the completion of assessments and consultation with National Grid. AC cables will connect the HVDC converter station to the substation. Three sites, in close proximity to the substation, have been assessed as potential locations to locate the HVDC converter station. The site immediately to the south of the substation is no longer being considered as an option. This is following consultation with RWE Npower and analysis of the constraints placed on a future development by existing infrastructure crossing the site.

A preferred cable route and converter station site have been identified following consultation with stakeholders and analysis of the results of ongoing environmental and technical work. The preferred cable route and converter station site are shown in Plan 1 along with alternatives still under consideration.

To minimise environmental impact, it is currently proposed that the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the dunes and beach at Freshwater West. HDD is a trenchless method of installing underground cables. Further technical assessment work will be undertaken before the installation methodology is finalised.

There are currently two subsea routes being assessed off the Welsh coast. The red and green routes under assessment are shown in Plan 2. Initial survey data suggests that both routes have environmental constraints and consultation and additional survey work is being undertaken to see if there is an alternative route between the two options. The final route will be selected following the conclusion of subsea surveys and consultation with stakeholders. The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in Plan 3.

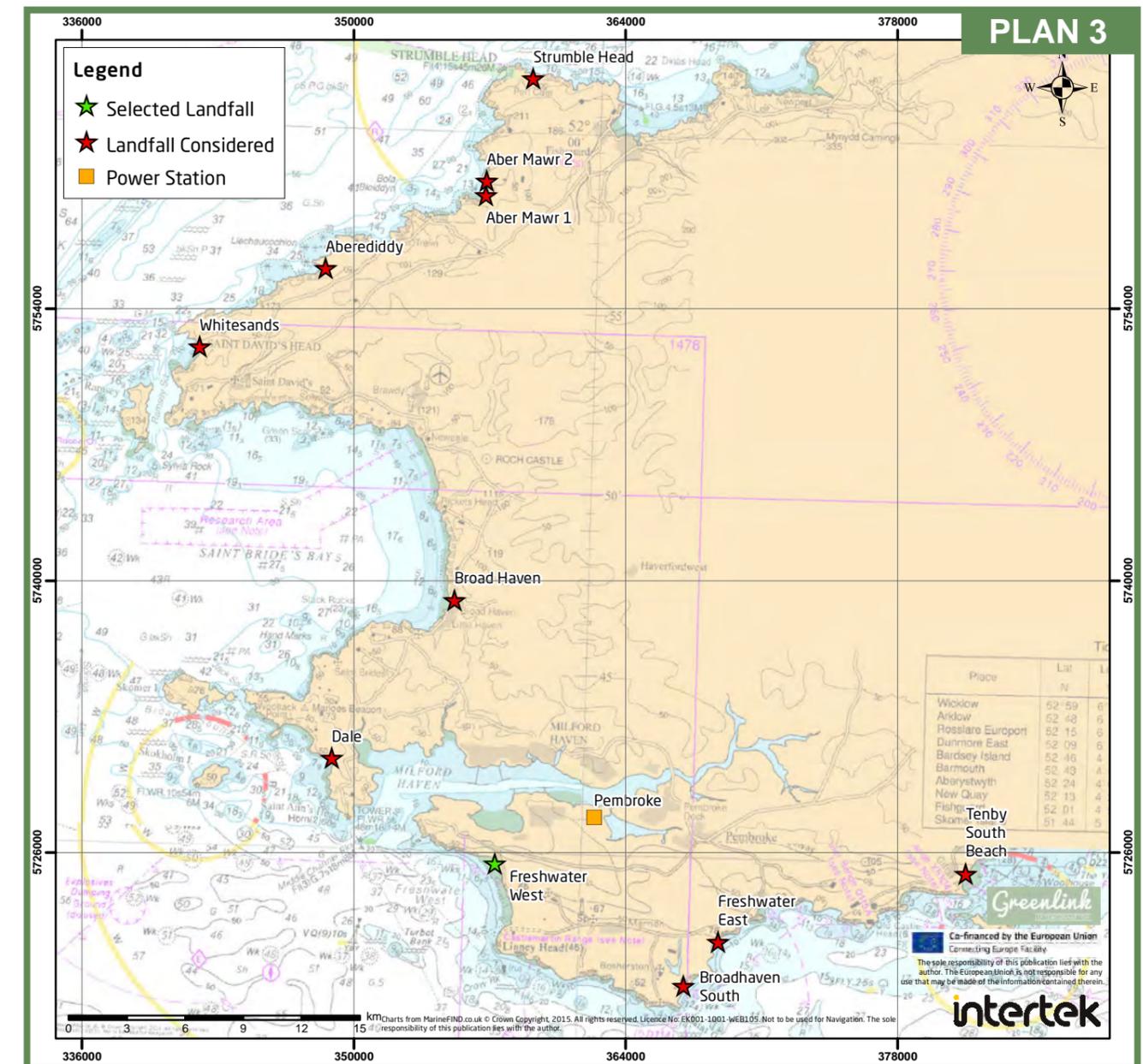
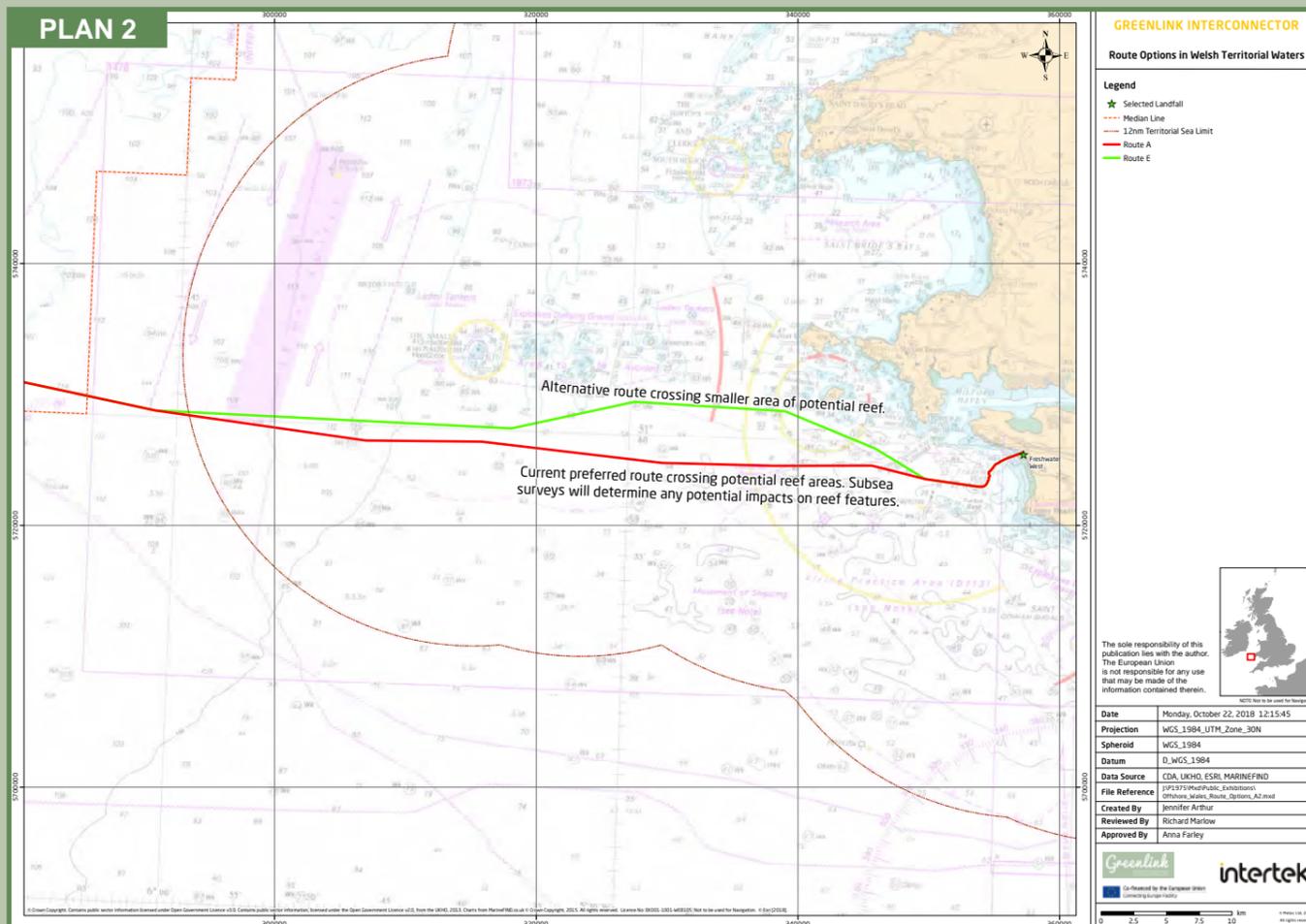
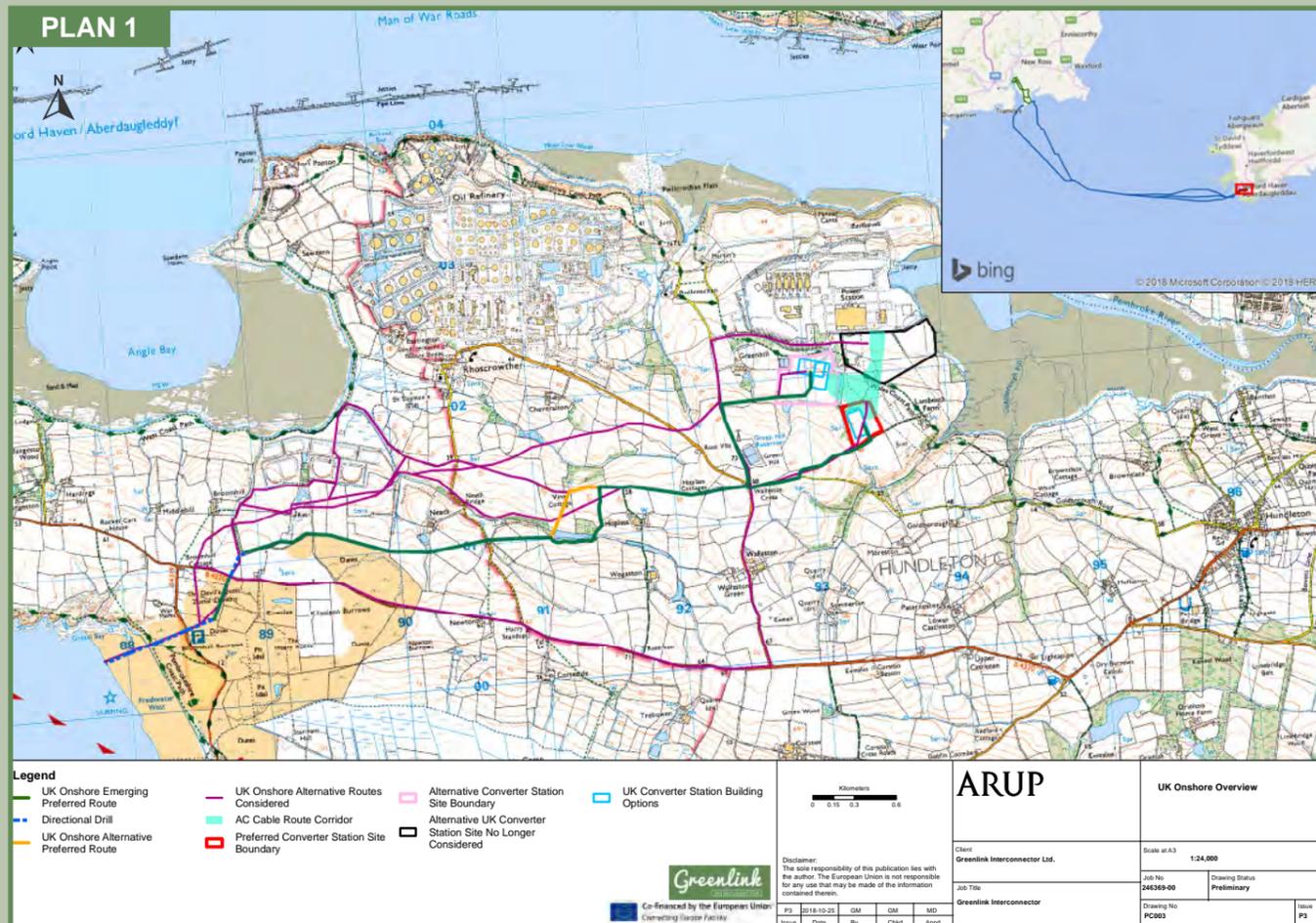




PHOTO COURTESY OF MMT

Technical viability

Marine surveys commenced in September 2018 and include geophysical and geotechnical surveys.

Geophysical

The geophysical survey maps the seabed and sub-surface geology along the survey route corridors to identify marine habitats, optimise cable routing within the survey corridor and enable the assessment of cable target burial depth. It also provides the geophysical data from which a marine archaeological assessment will be undertaken as part of the consenting process.

Geotechnical

The geotechnical surveys evaluate the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This is done using a number of techniques, including drilling boreholes and taking shallow core samples.

Marine environmental assessments

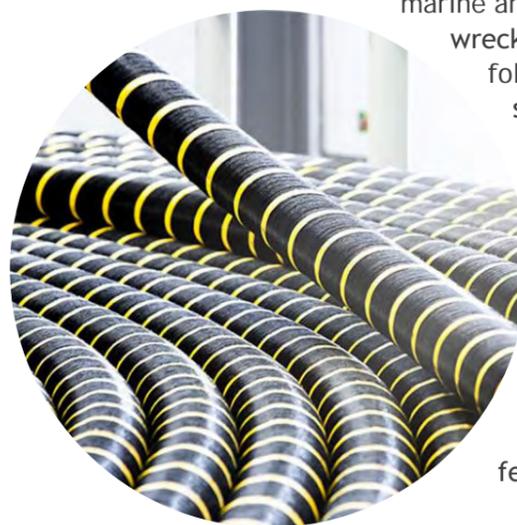
Greenlink will cross a number of European Marine Protected Sites: Special Areas of Conservation designated for the protection of habitats and species, and Special Protection Areas designated for the protection of wild birds. To determine if the project is likely to have a significant effect on the conservation objectives of the sites, Habitat Regulations Assessment will be carried out. The process identifies any potential impacts Greenlink may have on the site and assesses whether it is likely that the feature of the site will be affected.

Where Greenlink is likely to undermine the conservation objectives of the site e.g. it is possible that condition, characteristics, or distribution of the feature cannot be maintained, then mitigation measures are proposed to manage or reduce the potential negative impacts identified.

We are voluntarily undertaking an Environmental Impact Assessment for Greenlink. An Environmental Statement will be completed for the marine components of the project in Wales and an Environmental Impact Assessment Report will be completed for marine components in Ireland. The Habitats Regulation Assessment will form part of this larger environmental appraisal.

Topics covered by the environmental assessment will include:

- » Coastal processes
- » Protected sites
- » Benthic ecology
- » Fish and shellfish
- » Marine birds
- » Marine mammals and reptiles
- » Marine archaeology and unexploded ordnance
- » Fisheries
- » Shipping and navigation
- » Recreation and other sea users
- » Cumulative effects



The potential impacts to be assessed include:

- » Penetration and/or disturbance of the substrate below the surface of the seabed and effects on benthic communities and fish spawning
- » Disturbance to birds, fish and marine mammals
- » Transient underwater noise changes because of cable installation equipment and project vessels
- » Temporary siltation rate changes from trenching activity
- » Permanent, local, hydrological changes resulting from cable protection rock berms
- » Physical loss (permanent change) of localised areas of marine habitat
- » Localised electromagnetic changes and potential effects on fish, marine mammals and shipping
- » Temporary, localised displacement of fishing activity and disruption to shipping routes.
- » Possible in-combination effects. Most of the environmental impacts from cable installation are temporary and transient. For example, temporary disturbance of sea birds through the presence of project vessels, temporary increases in suspended sediment levels associated with trenching.

Mitigation

Steps are taken during the design of the project to ensure that environmental impacts are minimised where possible e.g. HDD under sensitive coastal features, routing around sensitive offshore habitats, avoiding known marine archaeology features such as wrecks. Best practice will also be followed to further reduce the significance of any potential impacts.

The proposed cable route crosses two Special Areas of Conservation that protect stony and bedrock reef. High resolution bathymetry data has been obtained for nearshore areas to assist routing through and around features.

Onshore cable technology and installation techniques

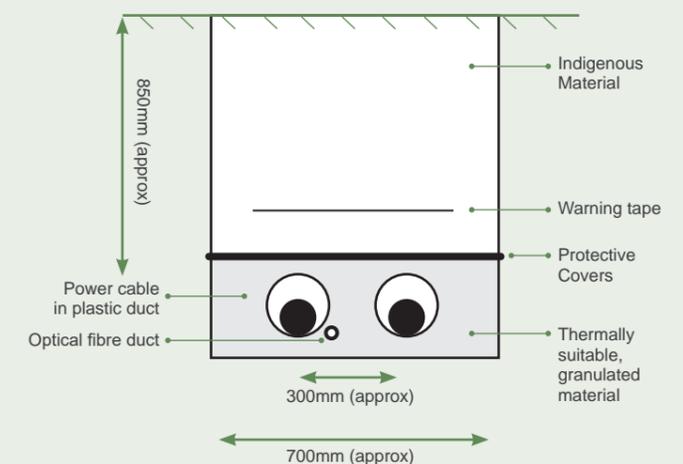
The two onshore HVDC cables will be buried underground in a single trench with a typical depth of cover of 850mm. These will be installed in plastic ducts to simplify the construction process. It is usual for the two ducts to be positioned close together (approximately 300mm). A protective cover and warning tape will also be buried along with marker posts at regular intervals at ground level. This arrangement is shown in Figure 1.



It is usual to increase the depth of cover in agricultural land to around 1050mm (from 850mm). The width of the trench may also vary with depth of cover (the deeper the cables are buried the wider the trench may become). A specific design would need to be engineered for utility crossings, crossing watercourses or other areas where the ordinary depth of cover cannot be achieved.

[Picture (top right): 250kV HVDC cable - courtesy of Prysmian]

Figure 1 : Indicative underground cable arrangement

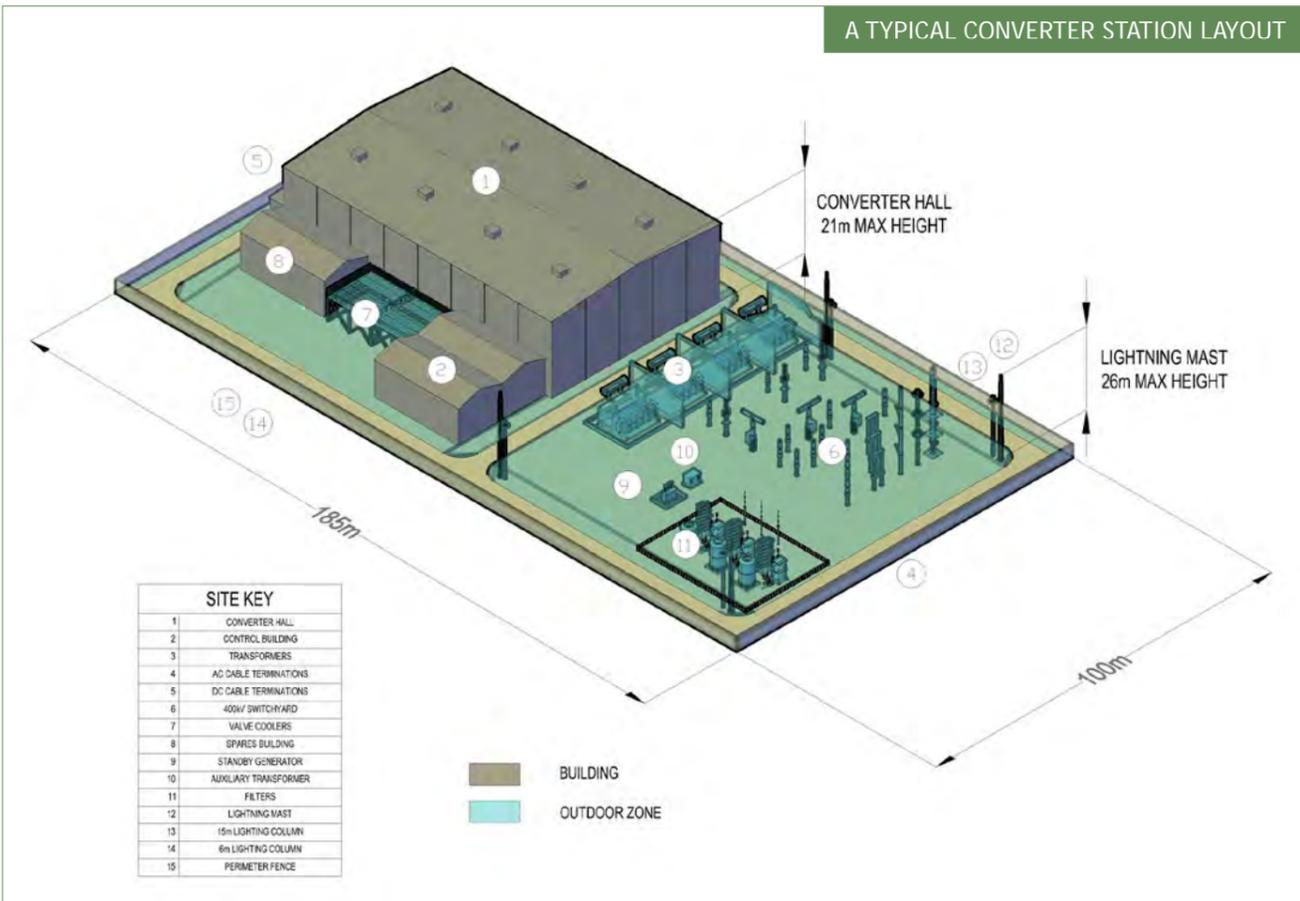


Greenlink will use High Voltage Direct Current Voltage Source Converter (HVDC VSC) technology to link the two power systems. In Ireland and GB, HVDC has been selected over an AC connection because AC is technically difficult over this distance. VSC technology has the benefit that it reduces the size of the converter stations (when compared to similar technologies).

The Greenlink Interconnector Converter Station

The indicative converter station site footprint would be circa 1.85 hectares (185m x 100m).

A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonic filters (if required), lightning towers, ancillary plant such as cooling bank and stand-by back-up emergency generators, and a control building. Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. The converter hall and main building are usually one continuous building with height difference. The layout of the converter station and final dimensions will depend on the local terrain, physical constraints, the results of environmental surveys, consultations and the supplier's technical requirements.



Tail Station

A tail station is a substation built adjacent to infrastructure such as a converter station and remote generation plant. Following consultation, EirGrid may require a tail station to be developed alongside the converter station in Ireland. While the need for a tail station has not been confirmed we will now incorporate one within the design to be assessed within the final planning application in Ireland.

We are using a 60m x 70m footprint for the potential tail station.

Project Timeline



A large infrastructure project such as Greenlink takes several years from concept to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have to be identified and fully assessed to ensure that they are considered within the final design of an infrastructure project. Detailed environmental and technical assessment surveys commenced in 2018. This follows the completion of desk-based assessments and consultation with statutory consultees.

Once a detailed proposal and design are completed, permits and licences will need to be obtained from: Pembrokeshire County Council, Pembrokeshire Coast National Park Authority, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government - Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will be constructed, which is expected to take approximately three years from start to finish.

The project is envisaged to commence on-site construction in 2020 and be fully operational in 2023

An important energy infrastructure project

Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe's most important energy infrastructure projects.

The "Energy Union" launched by the European Commission on 25th February 2015 is driving a fundamental transition towards more innovative ways to produce, transport and consume energy, and to address different approaches to the design and implementation of energy policy.

Facilitating the Union requires a range of actions, chief amongst them being an increase in the physical interconnection of the EU and surrounding country energy grids (both gas and electricity) to meet a 10% interconnection target by 2020 and to reach 15% by 2030.

The EU, Irish and UK governments all agree that even after Brexit, an interconnected grid will help to ensure affordable, secure and sustainable energy, and also growth and jobs across Europe.

» For information regarding the infrastructure transparency platform referred to in Article 18 of the TEN-E Regulation, please visit: http://ec.europa.eu/energy/infrastructure/transparency_platform/map-viewer/main.html

» For information regarding the manual of procedures for each of UK and Ireland https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311184/uk_manual_procedures_ten_e_regulation.pdf and www.pleanala.ie/publications/2014/pocmanual.pdf

Greenlink

INTERCONNECTOR

Greenlink is being developed by
Greenlink Interconnector Limited.

Greenlink Interconnector Limited is 100% owned by Element Power Holdings, a leading global developer of renewables, storage, flexible generation and interconnection projects and is experienced in the development of energy infrastructure projects in the UK, Ireland and internationally.

Greenlink Interconnector Limited is bringing private capital to the project and will assume the majority of the project risks.

For more information on Greenlink, please visit our website: www.greenlinkinterconnector.eu



Annex 4

TEN-E Regulation
Information Brochure – June
2019

Greenlink

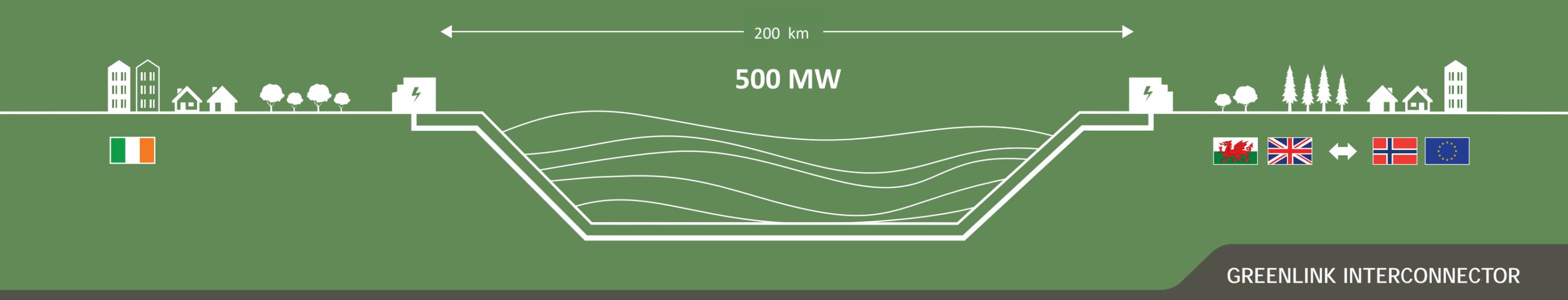
INTERCONNECTOR



TEN-E REGULATION INFORMATION BROCHURE

Issue 3 - June 2019

Connecting the power markets
in Ireland and Great Britain
for energy security, regional
investment and value for money
for consumers



GREENLINK INTERCONNECTOR

This Greenlink brochure provides an update of the project information contained within the brochures published in May 2018 and November 2018 and forms part of the ongoing stakeholder consultation process.

Consents required to construct Greenlink are expected to include:

	Wales	Ireland
Converter station	Major Development - Pembrokeshire County Council	Strategic Infrastructure Development - An Bord Pleanála Authorisation to construct - Commission for the Regulation of Utilities
Onshore cable route	Major Development - Pembrokeshire County Council - Pembrokeshire Coast National Park Authority	Strategic Infrastructure Development - An Bord Pleanála Consent to lay electricity lines across lands - Commission for the Regulation of Utilities Consent to lay electricity lines under the public road - Commission for the Regulation of Utilities
Marine cable	Marine Licence - Natural Resources Wales Marine Works Licence - Milford Haven Port Authority	Foreshore Licence - Department of Housing, Planning and Local Government (Foreshore Unit)

IMPORTANT PLANNING UPDATE: MARINE APPLICATIONS

The Marine Licence application and the Foreshore Licence application are scheduled to be submitted to Natural Resources Wales (Wales) and the Foreshore Unit (Ireland) respectively in June/July 2019.

Greenlink is a proposed subsea and underground electricity interconnector cable between the existing electricity grids in Ireland and Great Britain (GB), with a nominal capacity of 500 megawatts (MW). Greenlink will provide a new grid connection between EirGrid's Great Island substation in County Wexford (Ireland) and the National Grid's Pembroke substation in Pembrokeshire (Wales). The power will be able to flow in either direction, depending on supply and demand in each country.

Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland and GB with onward connections to continental Europe. The construction and development of Greenlink will deliver: increased energy security; regional investment and value for money to consumers; and enable the further integration of low carbon renewable energy sources.

Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe's most important energy infrastructure projects and granting it the "highest national significance" possible.

Greenlink will consist of two converter stations - one located close to the Great Island substation in County Wexford and the other close to the Pembroke substation in Pembrokeshire - connected by two High Voltage Direct Current (HVDC) cables under the Irish Sea. A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa.

DC electricity is typically used for the transmission of electricity over long distances because it has lower losses, negligible heating effects and is therefore suitable to be buried underground. Accordingly, there will be no overhead lines between the two converter stations. Onshore, the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built.

Greenlink is planned for commissioning in 2023.

The project will require planning permission in Ireland and in Wales.

STATUS OF THE PROJECT: The project is in the pre-planning phase, with planning submissions anticipated during Q4 2019. The applications for the marine components are scheduled to be submitted in June 2019.



380,000

Potential to power 380,000 homes*



Investment

€400m/£350m of private capital investment for Ireland and Wales



Energy

Supports the growth and integration of low carbon energy



Security

Enhances the security of supply for electricity consumers



Value FOR Money

Downward pressure on electricity bills



Jobs

Jobs and knock-on economic benefits during construction

Regional investment and jobs

Greenlink represents around €400m/£350m of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid

Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

Security of supply

The construction of Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy

Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition

Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

*Figure for number of homes is based on typical annual Irish 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.

Great Britain

National Grid is the Electricity System Operator for the whole of GB and operates the electricity transmission network in Wales and England including the 400kV network and substation at Pembroke. In its role as System Operator for GB, National Grid publishes plans and assessments for the economic and efficient development of the GB electricity transmission networks:

- » In Future Energy Scenarios (FES), National Grid considers different potential future impacts on the electricity system. In the 2017 FES the amount of interconnection capacity could reach 19GW by 2030 compared to 4GW today.
- » In the Network Options Assessment (NOA), National Grid carries out economic analyses to determine which transmission investments are efficient. The 2018/19 NOA recommends additional interconnection from GB to Ireland, beyond the 1.5GW capacity provided by Greenlink and the existing interconnectors (East West Interconnector (EWIC) and Moyle).
- » The Electricity Ten Year Statement (ETYS) includes data on the existing and planned transmission networks in GB and the ETYS 2017 references Greenlink as one of the planned interconnectors that has a connection agreement with National Grid.

Ireland

EirGrid is the Electricity System Operator for Ireland and with its subsidiary, SONI, operates the island of Ireland's electricity system. In its role as System Operator for Ireland, EirGrid publishes a ten year transmission development plan:

- » Greenlink is part of Transmission Development Plan 2016-2026, is referenced as part of the European Ten Year Network Development Plan 2018 (ENTSO-E TYNDP 2018) and as a PCI. The documents note that interconnection assists in increasing security of supply and competition.
- » The Irish regulator determined, in October 2018, that Greenlink passed the test to be part of the Irish transmission system paving the way for Greenlink to move to the permitting phase.

Offshore studies

The subsea cable route was expected to be up to 170km long. Following the completion of subsea surveys and consultation with key stakeholders the proposed cable route is circa 160km long.

Initial cable route selection centred on desk-based work and the assessment of known data and constraints. This work identified several route corridor options which required further assessment.

Subsea surveys commenced in September 2018 in order to identify and confirm the presence of any constraints facing the subsea cable routes. The environmental and technical constraints were assessed in conjunction with the Irish and Welsh foreshore authorities. **The route that offered the best solution to challenges identified while maintaining the shortest route solution was chosen as the preferred route.**

The results of the subsea surveys not only supported the selection of the preferred cable route but also the appropriate installation and protection methods to be adopted.

Technical and environmental assessment

As part of the project development, a series of technical and environmental assessment studies are being carried out to establish the viability of the proposed converter station sites and cable routes and to consider any potential impacts and opportunities arising from the project development. Greenlink is a cross-border project and no adverse cross-border impacts are expected.

Onshore studies and assessments

Biodiversity

Surveys are currently being carried out and the data assessed to ensure that the final onshore elements of Greenlink are designed sympathetically to the local environment and wildlife. Where possible, enhancement measures will be employed.

Surveys cover the landfall sites, the cable routes under consideration and the possible converter station locations.



As well as birds, wildlife being considered includes badgers, bats, otters, water voles, reptiles, great crested newts and dormice. Consideration is also being given to local vegetation, including hedgerows, trees and important habitats.

Our surveys and assessments will be verified and consulted on by Natural Resources Wales and the National Parks and Wildlife Service in Ireland.

Historic environment

The potential effects of Greenlink on local archaeology and cultural heritage are being assessed by identifying, predicting and evaluating the significance of potential effects on designated and non-designated heritage assets.

To mitigate any potential impacts we will consider the predicted impacts of the proposed scheme and will aim to avoid adverse effects. Wherever possible, mitigation will be designed to deliver benefits, such as maintaining the visual setting of historic assets. We will aim to avoid undisturbed archaeological remains and preserve them in situ. Where this is not possible, preservation by record will be proposed as mitigation.

Landscape & visual impact

This assessment relates to changes in the physical landscape, brought about by the proposed development, which may alter its character and how this is experienced.

We will produce visualisations of the converter stations from viewpoints that will be selected to represent the character of the area and particularly important landscape and heritage sites. Suitable mitigation, such as landscaping, building finishes and design layout, will be proposed.

Flooding and hydrology

This assessment considers the existing surface and ground water resources in proximity to Greenlink. It will assess potential impacts to water bodies, surface water drainage and flood risk due to the proposed scheme during the construction and operational phases. The results of this assessment will be incorporated into the final design.

Geology & hydrogeology

This assessment considers the existing ground conditions present in the vicinity of the various scheme components and addresses the potential effects that the construction and operation of the project may have on the geological and hydrogeological characteristics of the study area.



The assessment will include consideration of possible effects on the superficial geology (soils), solid geology and geomorphology, including mineral resources beneath the proposed route of the scheme. The groundwater beneath the site and surrounding area will be considered. The results of this assessment will be incorporated into the final design and delivery of the proposal to mitigate any potential impact.



ILLUSTRATION: WSP

Noise & vibration

This assessment will address potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors will be determined via noise surveys.

Noise sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship, etc) and open public spaces (including public footpaths).

The results of this assessment will be incorporated into the final design.

Traffic & transport

The traffic impact assessment will address the traffic impacts on the local road network from the construction and operation of Greenlink.



The assessment will include the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce will also be addressed.

A transport assessment will be carried out in accordance with best practice.

An outline Traffic Management Plan (TMP) will be put together that will detail measures for managing and mitigating the construction traffic caused by Greenlink. We will consult the local community on the outline TMP to ensure that all considerations of local amenity have been incorporated and that members of the local communities are satisfied with the mitigation measures being proposed.

Electromagnetic fields (EMFs)

The Greenlink electrical infrastructure (converter stations and underground cables) will be designed to comply with the EC Directive relating to Occupational Exposure to Public Health and the EU 1999 recommendation on Public Exposure.

Use of agricultural land

Construction of the converter stations will result in the permanent loss of land from agricultural use. Land disturbed during the construction of the landfall and cable will be reinstated and therefore there will be no permanent loss of agricultural land associated with the landfall or cable route.



Socio-economics & human health

This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects on the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy. The results of this assessment will be incorporated into the final design and delivery of the proposal to mitigate any potential impact and maximise benefits.

Air quality

This assessment considers the potential impacts on air quality during construction, including dust emissions, on-site machinery and construction traffic travelling to and from the site. The potential impacts on air quality during the operational phase will also be considered.



Following the assessment of air quality effects during the construction phase, mitigation measures will be recommended to minimise the impact from dust. These measures, including dust suppressant measures, will be considered for both human and ecological receptors.

Greenlink in Wales

In Wales, Greenlink will connect to the Pembroke 400kV substation in Pembrokeshire. The Pembroke substation was identified as the connection point for Greenlink following the completion of assessments and consultation with National Grid. AC cables will connect the HVDC converter station to the substation. Three sites, in close proximity to the substation, were assessed as potential locations to locate the HVDC converter station.

A preferred cable route and converter station site have been selected following consultation with stakeholders and analysis of the results of environmental and technical work.

The preferred cable route and converter station site are shown in Plan 1 along with alternatives that were considered.

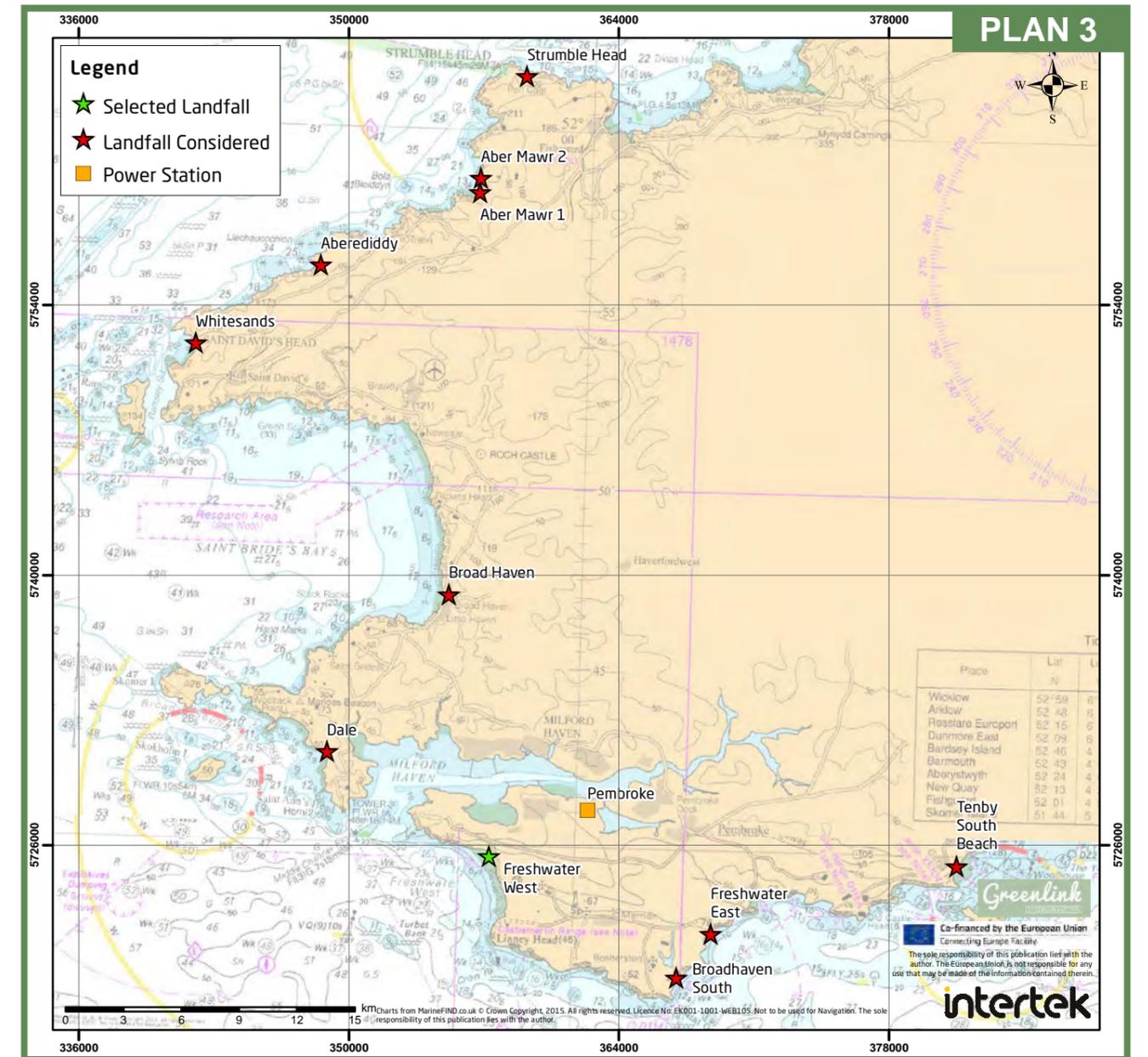
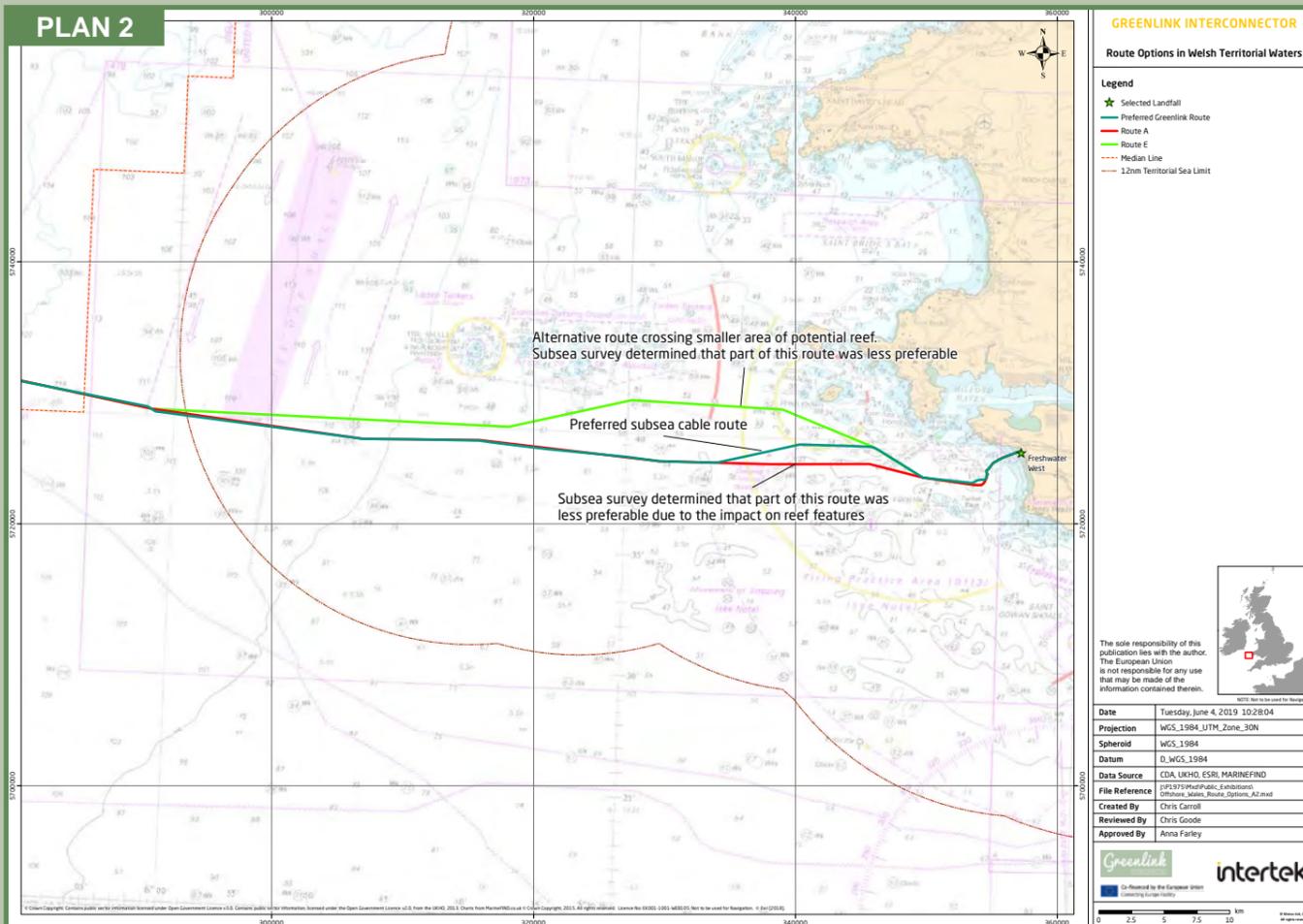
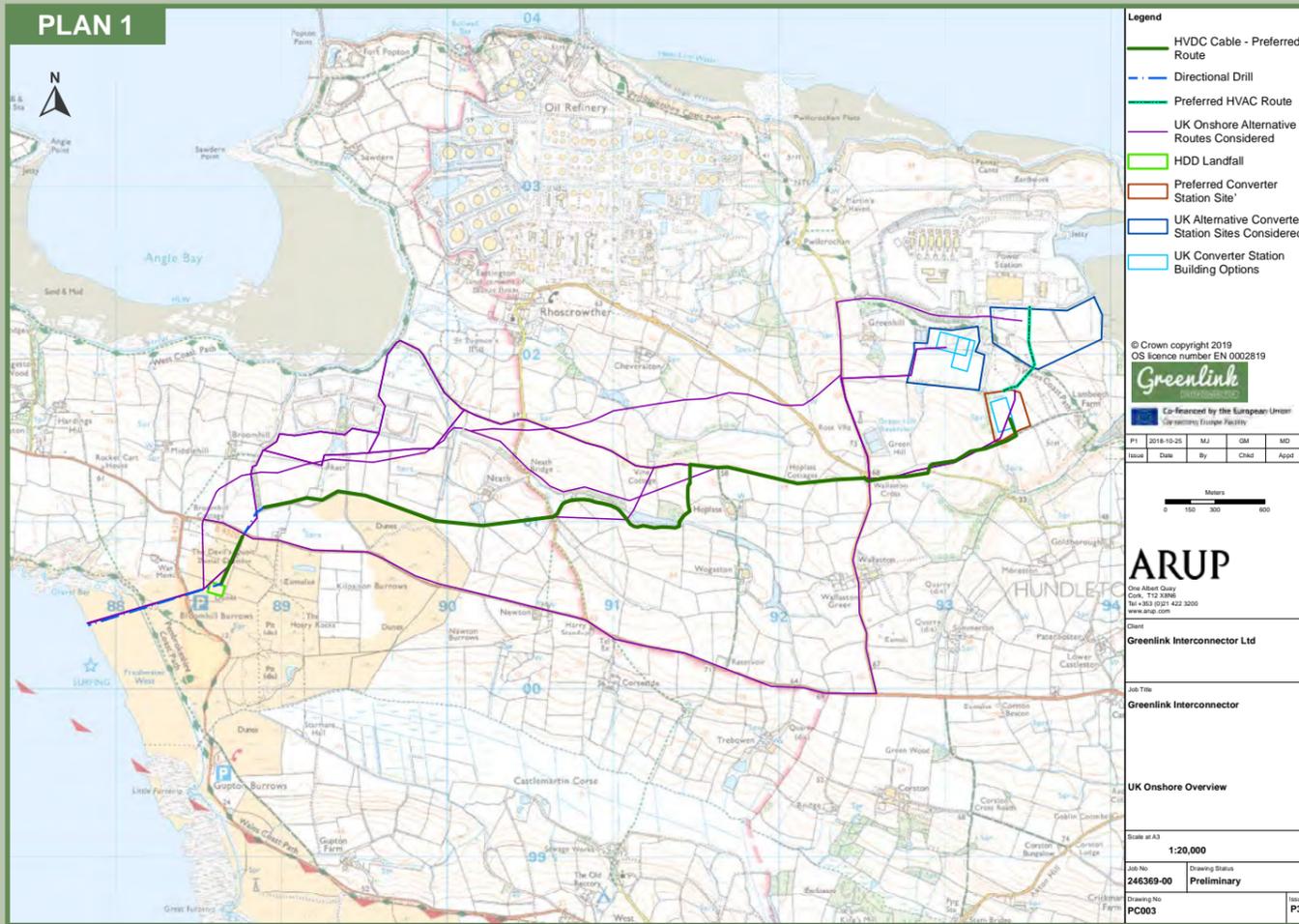
To minimise environmental impact, it is proposed that the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the dunes and beach at Freshwater West.

HDD is a trenchless method of installing underground cables, as detailed on page 13.

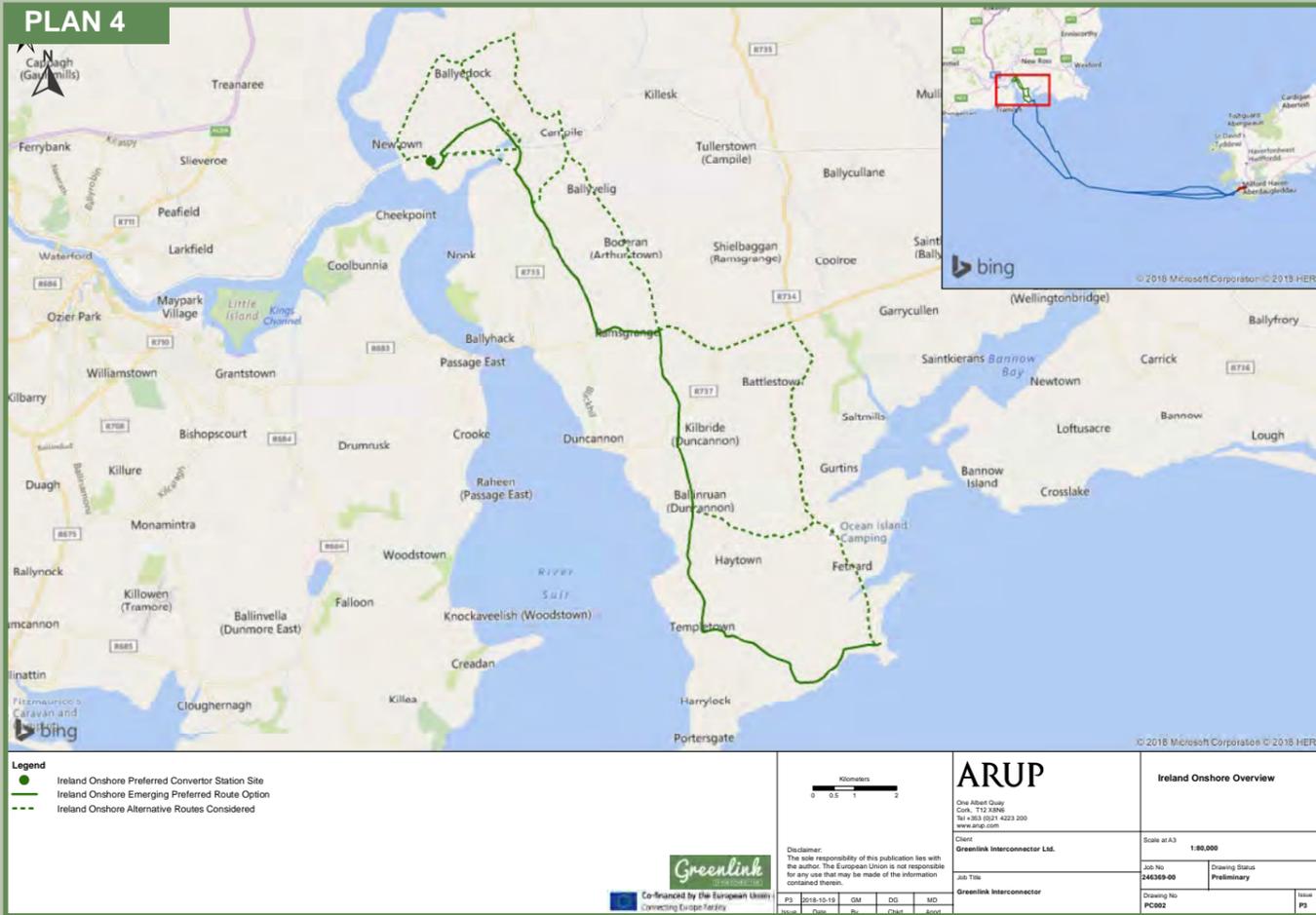
The final subsea route was selected following the conclusion of subsea surveys and consultation with stakeholders.

Two initial routes were subject to subsea surveys. Following the results of surveys confirming the presence of reef habitats a third route was identified and assessed in partnership with Natural Resources Wales. The third route assessed has been confirmed as the preferred subsea cable route. The final subsea route and the two other routes assessed are shown in Plan 2.

The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in Plan 3.



PLAN 4



Greenlink in Ireland

In Ireland, Greenlink will connect into the Great Island 220kV substation in County Wexford. The substation at Great Island was identified as the connection point for Greenlink following the completion of assessments and consultation with EirGrid.

AC cables will connect the HVDC converter station to the substation. A site adjacent to the substation has been identified as the most suitable location to construct the HVDC converter station.

The proposed converter station site is shown in Plan 4 along with potential onshore underground cable routes linking the landfall at Baginbun Beach.

The preferred converter station site and cable route options were identified following environmental and technical assessments and consultation with key stakeholders.

The length of the underground onshore cable route could be circa 22km.

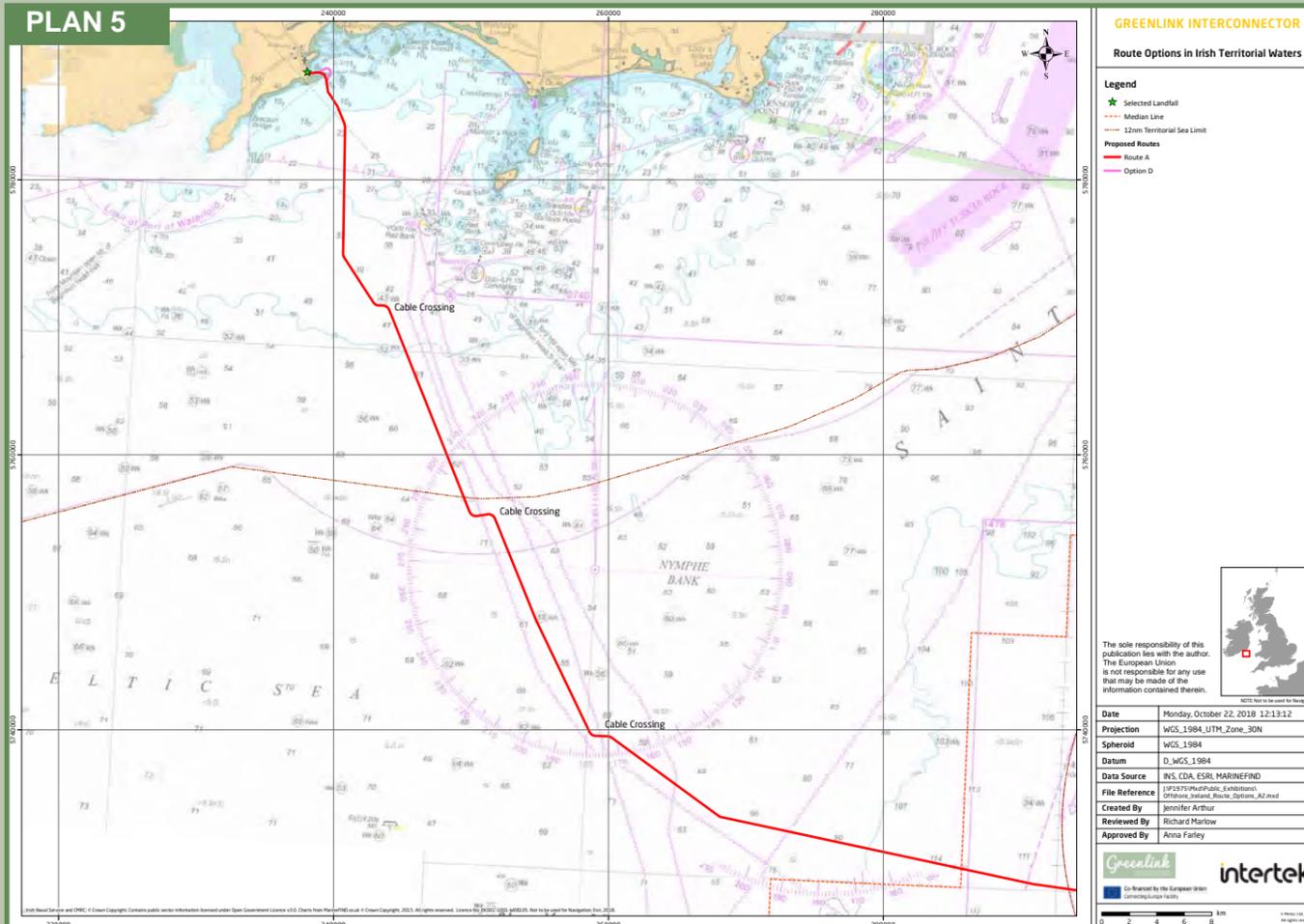
To minimise environmental impact, it is proposed that the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the cliff edge and sand at Baginbun Beach.

HDD is a trenchless method of installing underground cables, as detailed on page 13.

A preferred subsea route has been identified following desk-based assessments supported by the results of subsea surveys. The preferred route is shown in Plan 5.

The landfall at Baginbun Beach was selected as the landfall site following a review of potential landfalls in the region. The landfalls assessed are shown in Plan 6.

PLAN 5



PLAN 6

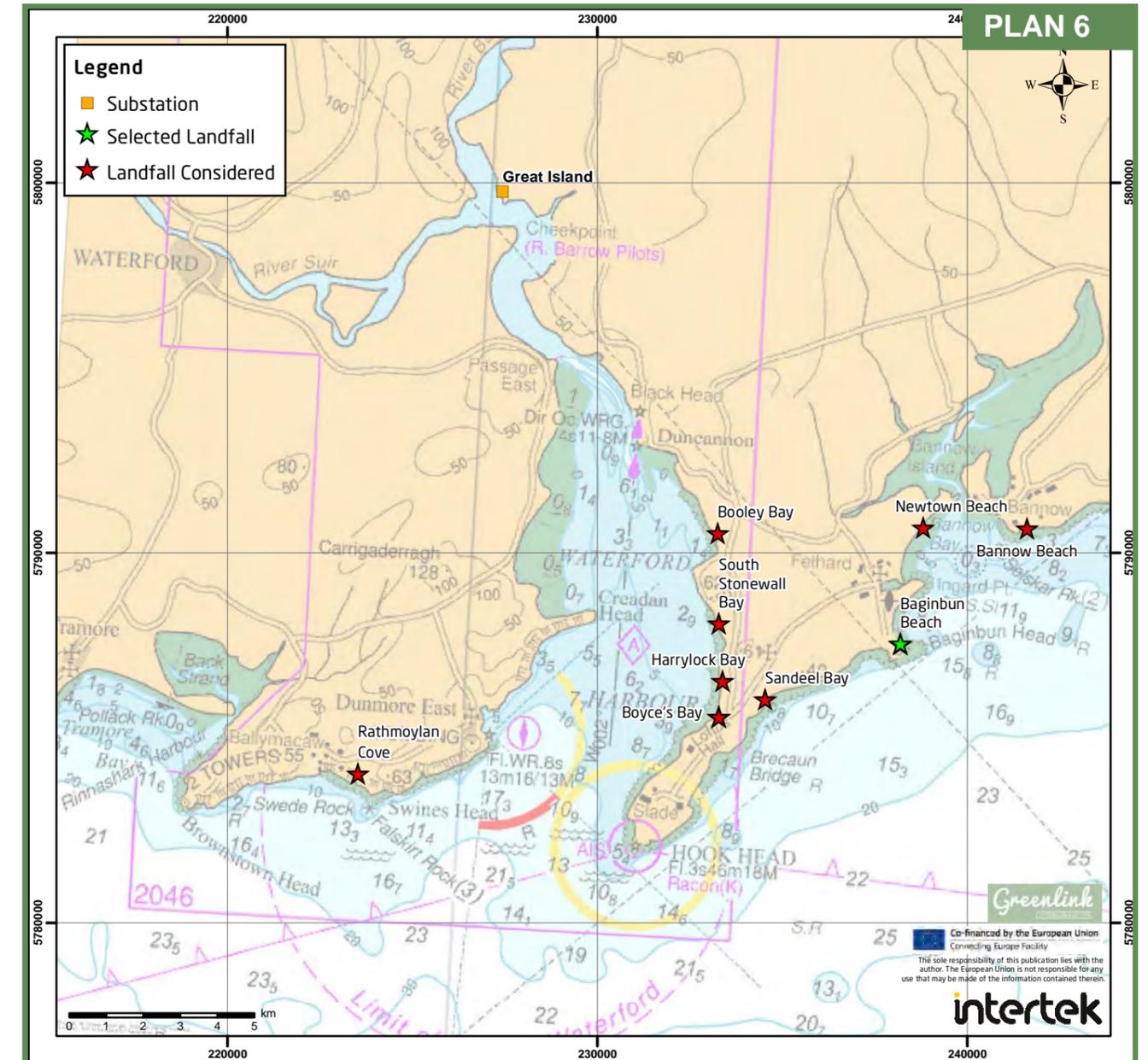




PHOTO COURTESY OF MMT

Technical viability

Marine surveys which commenced in September 2018 and included geophysical and geotechnical surveys, have now all been completed.

Geophysical

The geophysical survey mapped the seabed and sub-surface geology along the survey route corridors to identify marine habitats, optimise cable routing within the survey corridor and enable the assessment of cable target burial depth. It also provided the geophysical data from which a marine archaeological assessment was undertaken as part of the consenting process.

Geotechnical

The geotechnical surveys evaluated the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This was done using a number of techniques, including drilling boreholes and taking shallow core samples.

Marine environmental assessments

Greenlink will cross a number of European Marine Protected Sites: Special Areas of Conservation designated for the protection of habitats and species, and Special Protection Areas designated for the protection of wild birds. To determine if the project is likely to have a significant effect on the conservation objectives of the sites, a Habitats Regulations Assessment is being carried out in Wales and a Natura Impact Statement is being carried out in Ireland. These processes identify any potential impacts Greenlink may have on designated sites and assesses whether it is likely that the feature of the site will be affected.

Where Greenlink is likely to undermine the conservation objectives of the site e.g. it is possible that condition, characteristics, or distribution of the feature cannot be maintained, then mitigation measures are proposed to manage or reduce the potential negative impacts identified.

We are undertaking an Environmental Impact Assessment for Greenlink. An Environmental Statement will be completed for the marine components of the project in Wales and an Environmental Impact Assessment Report will be completed for marine components in Ireland. The Habitats Regulations Assessment (Wales) and Natura Impact Statement (Ireland) will form part of this larger environmental appraisal.

Topics covered by the environmental assessment will include:

- » Coastal processes
- » Protected sites
- » Benthic ecology
- » Fish and shellfish
- » Marine birds
- » Marine mammals and reptiles
- » Marine archaeology and unexploded ordnance
- » Fisheries
- » Shipping and navigation
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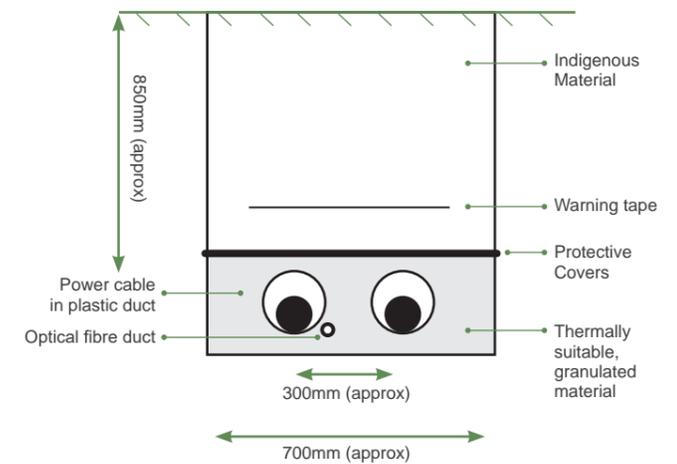
Onshore cable technology and installation techniques

The onshore HVDC cables will be buried underground in a single trench with a typical depth of cover of 850mm. These will be installed in plastic ducts to simplify the construction process. It is usual for the two ducts to be positioned close together (approximately 300mm). A protective cover and warning tape will also be buried along with marker posts at regular intervals at ground level. This arrangement is shown in Figure 1.

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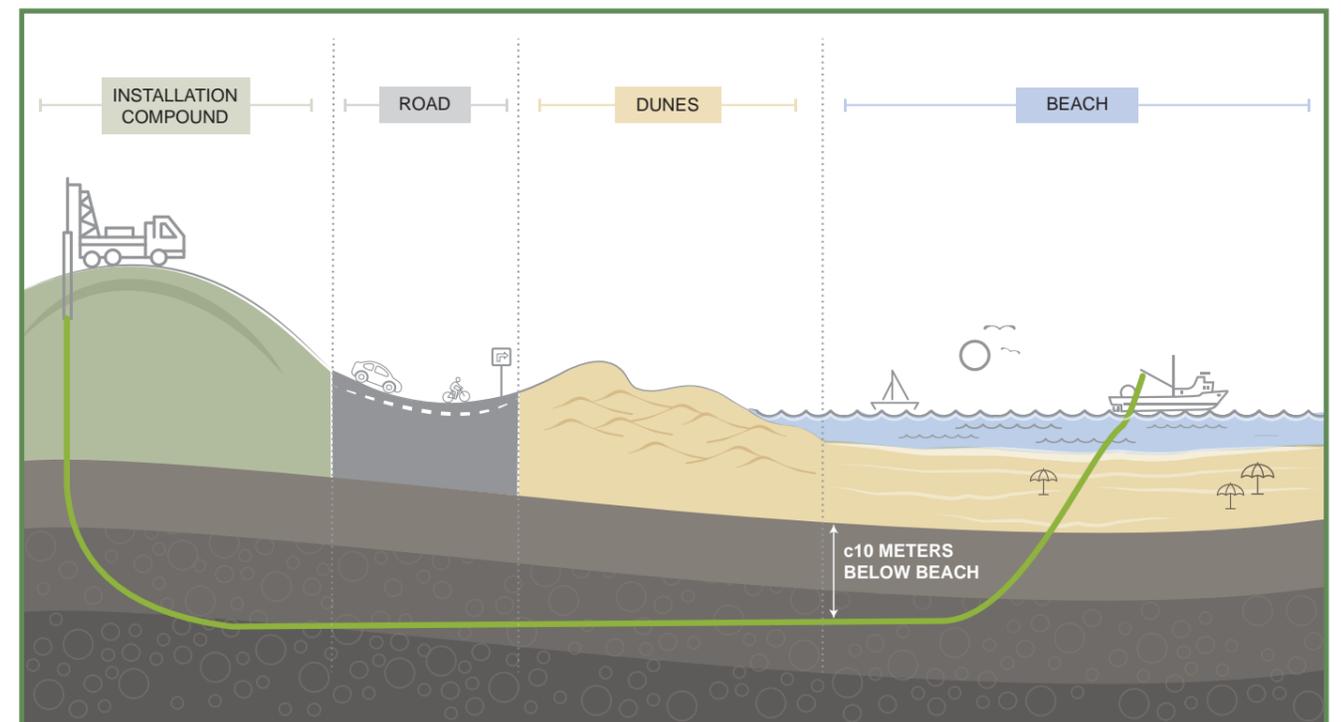
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Figure 1 : Indicative underground cable arrangement



Installation of Cables at Landfalls

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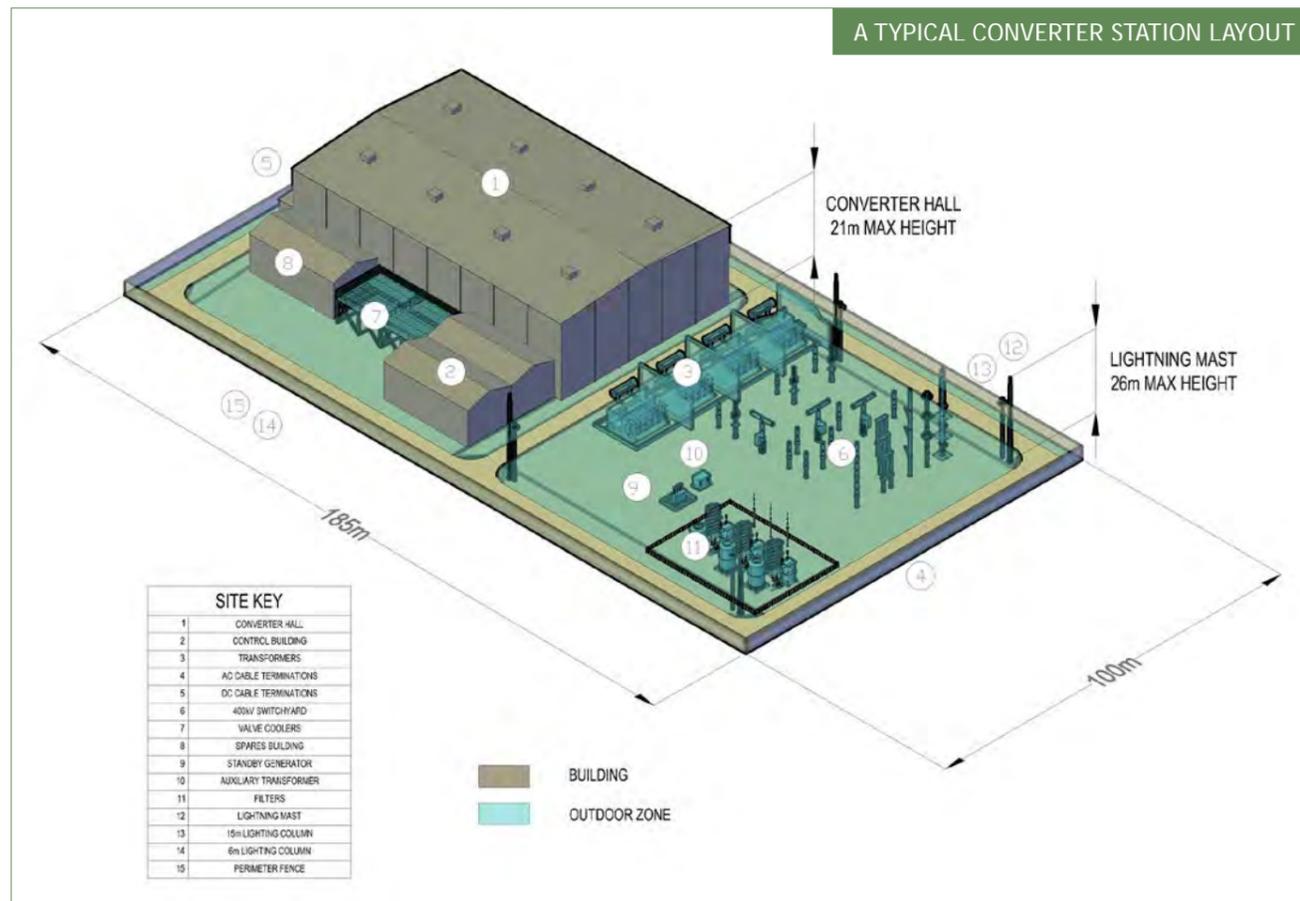


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The Greenlink Interconnector Converter Station

The indicative converter station site footprint would be circa 1.85 hectares (185m x 100m).

A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonic filters (if required), lightning towers, ancillary plant such as cooling bank and stand-by back-up emergency generators, and a control building. Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. The converter hall and main building are usually one continuous building with height difference. The layout of the converter station and final dimensions will depend on the local terrain, physical constraints, the results of environmental surveys, consultations and the supplier's technical requirements.

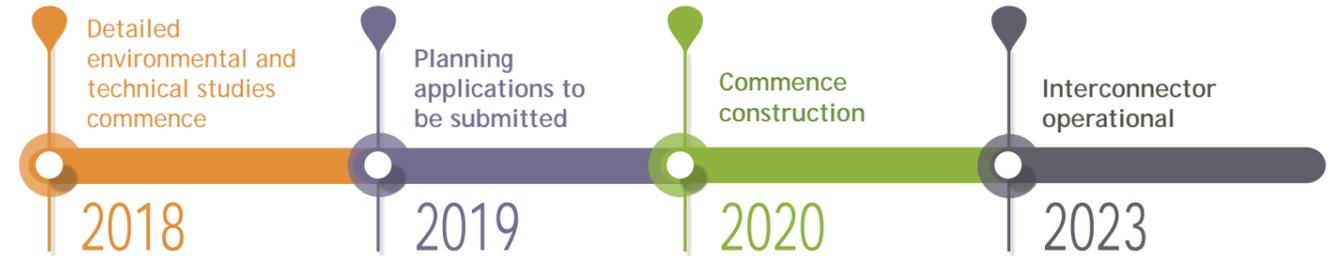


Tail Station

A tail station is a substation built adjacent to infrastructure such as a converter station and remote generation plant. Following consultation, EirGrid has confirmed that a tail station will need to be developed alongside the converter station in Ireland. We will now incorporate a tail station within the design to be assessed within the final planning application in Ireland.

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Project Timeline



A large infrastructure project such as Greenlink takes several years from concept to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have to be identified and fully assessed to ensure that they are considered within the final design of an infrastructure project. Detailed environmental and technical assessment surveys commenced in 2018. This followed the completion of desk-based assessments and consultation with statutory consultees.

Once a detailed proposal and design are completed, permits and licences will need to be obtained from: Pembrokeshire County Council, Pembrokeshire Coast National Park Authority, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government - Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will be constructed, which is expected to take approximately three years from start to finish.

The project is envisaged to commence on-site construction in 2020 and be fully operational in 2023.

An important energy infrastructure project

Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe's most important energy infrastructure projects.

The "Energy Union" launched by the European Commission on 25th February 2015 is driving a fundamental transition towards more innovative ways to produce, transport and consume energy, and to address different approaches to the design and implementation of energy policy.

Facilitating the Union requires a range of actions, chief amongst them being an increase in the physical interconnection of the EU and surrounding country energy grids (both gas and electricity) to meet a 10% interconnection target by 2020 and to reach 15% by 2030.

The EU, Irish and UK governments all agree that even after Brexit, an interconnected grid will help to ensure affordable, secure and sustainable energy, and also growth and jobs across Europe.

- » For information regarding the infrastructure transparency platform referred to in Article 18 of the TEN-E Regulation, please visit: http://ec.europa.eu/energy/infrastructure/transparency_platform/map-viewer/main.html
- » For information regarding the manual of procedures for each of UK and Ireland [https:// assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311184/uk_manual_procedures_ten_e_regulation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311184/uk_manual_procedures_ten_e_regulation.pdf) and www.pleanala.ie/publications/2014/pocimanual.pdf

Greenlink

INTERCONNECTOR

Greenlink is being developed by Greenlink Interconnector Limited.

Greenlink Interconnector Limited 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 programs under management in private equity, private real estate, private infrastructure and private debt.

Greenlink Interconnector Limited is bringing private capital to the project and will assume the majority of the project risks.

For more information on Greenlink, please visit our website: www.greenlink.ie



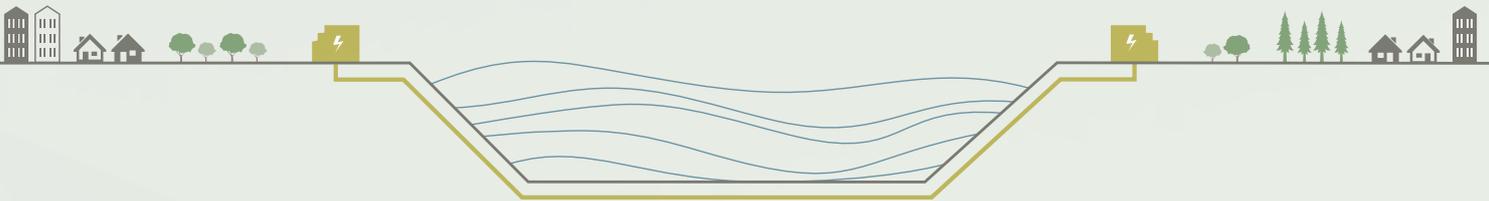
Annex 5

TEN-E Regulation Information
Brochure – December 2019

Greenlink

INTERCONNECTOR

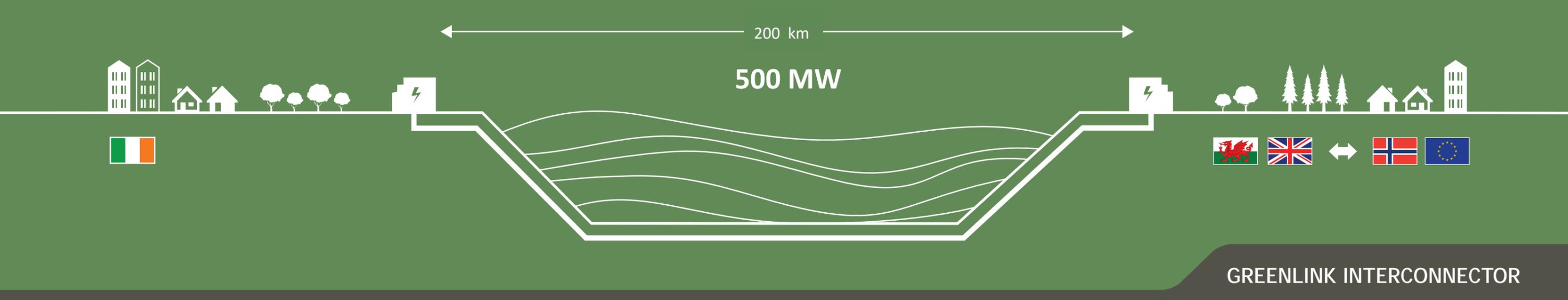
TEN-E REGULATION
INFORMATION BROCHURE



Connecting the power markets in Ireland and Great Britain for energy security, regional investment and value for money for consumers

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This Greenlink brochure provides an update of the project information contained within the brochures published in May 2018, November 2018 and June 2019 and forms part of the ongoing stakeholder consultation process.

Consents required to construct Greenlink are expected to include:

	Wales	Ireland
CONVERTER STATION	Major Development (Outline) - Pembrokeshire County Council	Strategic Infrastructure Development - An Bord Pleanála Authorisation to construct - Commission for the Regulation of Utilities
ONSHORE CABLE ROUTE	Major Development (Full) - Pembrokeshire County Council - Pembrokeshire Coast National Park Authority	Strategic Infrastructure Development - An Bord Pleanála Consent to lay electricity lines across lands - Commission for the Regulation of Utilities Consent to lay electricity lines under the public road - Commission for the Regulation of Utilities
MARINE CABLE	Marine Licence - Natural Resources Wales - Submitted Marine Works Licence - Milford Haven Port Authority - Submitted	Foreshore Licence - Department of Housing, Planning and Local Government (Foreshore Unit) - Submitted

IMPORTANT PLANNING UPDATE: MARINE APPLICATIONS SUBMITTED

Formal consultation has commenced on Greenlink's Marine Licence application (Wales) and Foreshore Licence application (Ireland). The consultation ends on 8th January 2020. The applications and details of how to respond can be found on the Greenlink website: www.greenlink.ie/marinelicenceapplicationwales and www.greenlink.ie/foreshorelicenceapplicationireland.

Greenlink is a proposed subsea and underground electricity interconnector cable between the existing electricity grids in Ireland and Great Britain (GB), with a nominal capacity of 500 megawatts (MW). Greenlink will provide a new grid connection between EirGrid's Great Island substation in County Wexford (Ireland) and the National Grid's Pembroke substation in Pembrokeshire (Wales). The power will be able to flow in either direction, depending on supply and demand in each country.

Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland and GB with onward connections to continental Europe. The construction and development of Greenlink will deliver: increased energy security; regional investment and value for money to consumers; and enable the further integration of low carbon renewable energy sources.

Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe's most important energy infrastructure projects and granting it the "highest national significance" possible.

Greenlink will consist of two converter stations - one located close to the Great Island substation in County Wexford and the other close to the Pembroke substation in Pembrokeshire - connected by two High Voltage Direct Current (HVDC) cables under the Irish Sea. A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa.

DC electricity is typically used for the transmission of electricity over long distances because it has lower losses, negligible heating effects and is therefore suitable to be buried underground. Accordingly, there will be no overhead lines between the two converter stations. Onshore, the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built.

Greenlink is planned for commissioning in 2023.

The project will require planning permission in Ireland and in Wales.

STATUS OF THE PROJECT:

The onshore components of the project are in the pre-planning phase, with planning submissions anticipated during Q1 2020. The applications for the marine components have now been submitted.



380,000

Potential to power 380,000 homes*



Investment

€400m/£350m of private capital investment for Ireland and Wales



Energy

Supports the growth and integration of low carbon energy



Security

Enhances the security of supply for electricity consumers



Value FOR Money

Downward pressure on electricity bills



Jobs

Jobs and knock-on economic benefits during construction

Regional investment and jobs

Greenlink represents around €400m/£350m of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid

Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

Security of supply

The construction of Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy

Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition

Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

* Approximate figure, based on value and conversion rate: €1=£0.88, November 2018

** Figure for number of homes is based on typical annual Irish 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.

Great Britain

National Grid is the Electricity System Operator for the whole of GB and operates the electricity transmission network in Wales and England including the 400kV network and substation at Pembroke. In its role as System Operator for GB, National Grid publishes plans and assessments for the economic and efficient development of the GB electricity transmission networks:

- » In Future Energy Scenarios (FES), National Grid considers different potential future impacts on the electricity system. In the 2017 FES the amount of interconnection capacity could reach 19GW by 2030 compared to 4GW today.
- » In the Network Options Assessment (NOA), National Grid carries out economic analyses to determine which transmission investments are efficient. The 2018/19 NOA recommends additional interconnection from GB to Ireland, beyond the 1.5GW capacity provided by Greenlink and the existing interconnectors (East West Interconnector (EWIC) and Moyle).
- » The Electricity Ten Year Statement (ETYS) includes data on the existing and planned transmission networks in GB and the ETYS 2017 references Greenlink as one of the planned interconnectors that has a connection agreement with National Grid.

Ireland

EirGrid is the Electricity System Operator for Ireland and with its subsidiary, SONI, operates the island of Ireland's electricity system. In its role as System Operator for Ireland, EirGrid publishes a ten year transmission development plan:

- » Greenlink is part of Transmission Development Plan 2016-2026, is referenced as part of the European Ten Year Network Development Plan 2018 (ENTSO-E TYNDP 2018) and as a PCI. The documents note that interconnection assists in increasing security of supply and competition.
- » The Irish regulator determined, in October 2018, that Greenlink passed the test to be part of the Irish transmission system paving the way for Greenlink to move to the permitting phase.

Offshore studies

The subsea cable route was expected to be up to 170km long. Following the completion of subsea surveys and consultation with key stakeholders the proposed cable route is circa 160km long.

Initial cable route selection centred on desk-based work and the assessment of known data and constraints. This work identified several route corridor options which required further assessment.

Subsea surveys commenced in September 2018 in order to identify and confirm the presence of any constraints facing the subsea cable routes. The environmental and technical constraints were assessed in conjunction with the Irish and Welsh foreshore authorities. **The route that offered the best solution to challenges identified while maintaining the shortest route solution was chosen as the preferred route.**

The results of the subsea surveys not only supported the selection of the preferred cable route but also the appropriate installation and protection methods to be adopted.

Technical and environment assessment

As part of the project development, a series of technical and environmental assessment studies have been completed to establish the viability of the proposed converter station sites and cable routes and to consider any potential impacts and opportunities arising from the project development. Greenlink is a cross-border project and no adverse cross-border impacts are expected.

Onshore studies and assessments

The following areas have been or are being assessed for potential impacts and mitigation measures, and the results will be set out in the onshore planning applications expected to be submitted during 2020



Biodiversity

Surveys have been completed to ensure that the final onshore elements of Greenlink are designed sympathetically to the local environment and wildlife. Where possible, enhancement measures will be employed.

Surveys cover the landfall sites, the cable routes under consideration and the possible converter station locations.

As well as birds, wildlife being considered includes badgers, bats, otters, water voles, reptiles, great crested newts and dormice. Consideration is also being given to local vegetation, including hedgerows, trees and important habitats.

Our surveys and assessments will be verified and consulted on by Natural Resources Wales and the National Parks and Wildlife Service in Ireland.

Historic environment

The potential effects of Greenlink on local archaeology and cultural heritage have been assessed by identifying, predicting and evaluating the significance of potential effects on designated and non-designated heritage assets.

To mitigate any potential impacts we will consider the predicted impacts of the proposed scheme and will aim to avoid adverse effects. Wherever possible, mitigation will be designed to deliver benefits, such as maintaining the visual setting of historic assets. We will aim to avoid undisturbed archaeological remains and preserve them in situ. Where this is not possible, preservation by record will be proposed as mitigation.

Landscape and visual impact

This assessment relates to changes in the physical landscape, brought about by the proposed development, which may alter its character and how this is experienced.

We are producing visualisations of the converter stations from viewpoints that will be selected to represent the character of the area and particularly important landscape and heritage sites. Suitable mitigation, such as landscaping, building finishes and design layout, will be proposed.

Flooding and hydrology

This assessment considers the existing surface and ground water resources in proximity to Greenlink. It assesses potential impacts to water bodies, surface water drainage and flood risk due to the proposed scheme during the construction and operational phases. The results of this assessment are being incorporated into the final design.

Geology and hydrogeology

This assessment considers the existing ground conditions present in the vicinity of the various scheme components and addresses the potential effects that the construction and operation of the project may have on the geological and hydrogeological characteristics of the study area.

The assessment includes consideration of possible effects on the superficial geology (soils), solid geology and geomorphology, including mineral resources beneath the proposed route of the scheme. The groundwater beneath the site and surrounding area is also considered. The results of this assessment are being incorporated into the final design and delivery of the proposal to mitigate any potential impact.



ILLUSTRATION: WSP

Noise and vibration

This assessment addresses potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors have been determined via noise surveys.

Noise sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship, etc) and open public spaces (including public footpaths).

The results of this assessment are being incorporated into the final design.



Traffic and transport

This assessment will address the traffic impacts on the local road network from the construction and operation of Greenlink.

The assessment includes the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce are also addressed.

Mitigation measures will be proposed to minimise any impacts on the local road network and users.

Electromagnetic fields (EMFs)

The Greenlink electrical infrastructure (converter stations and underground cables) are being designed to comply with the EC Directive relating to Occupational Exposure to Public Health and the EU 1999 recommendation on Public Exposure.



Use of agricultural land

Construction of the converter stations will result in the permanent loss of land from agricultural use. Land disturbed during the construction of the landfall and cable will be reinstated and therefore there will be no permanent loss of agricultural land associated with the landfall or cable route.

Socio-economics and human health

This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects on the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy. The results of this assessment are being incorporated into the final design and delivery of the proposal to mitigate any potential impact and maximise benefits.

Air quality

This assessment considers the potential impacts on air quality during construction, including dust emissions, on-site machinery and construction traffic travelling to and from the site. The potential impacts on air quality during the operational phase has also been considered.

Following the assessment of air quality effects during the construction phase, mitigation measures are being recommended to minimise the impact from dust. These measures, including dust suppressant measures, have been considered for both human and ecological receptors.

Greenlink in Wales

In Wales, Greenlink will connect to the Pembroke 400kV substation in Pembrokeshire. The Pembroke substation was identified as the connection point for Greenlink following the completion of assessments and consultation with National Grid. AC cables will connect the HVDC converter station to the substation. Three sites, in close proximity to the substation, were assessed as potential locations to locate the HVDC converter station.

A preferred cable route and converter station site have been selected following consultation with stakeholders and analysis of the results of environmental and technical work.

The preferred cable route and converter station site are shown in Plan 1 along with alternatives that were considered.

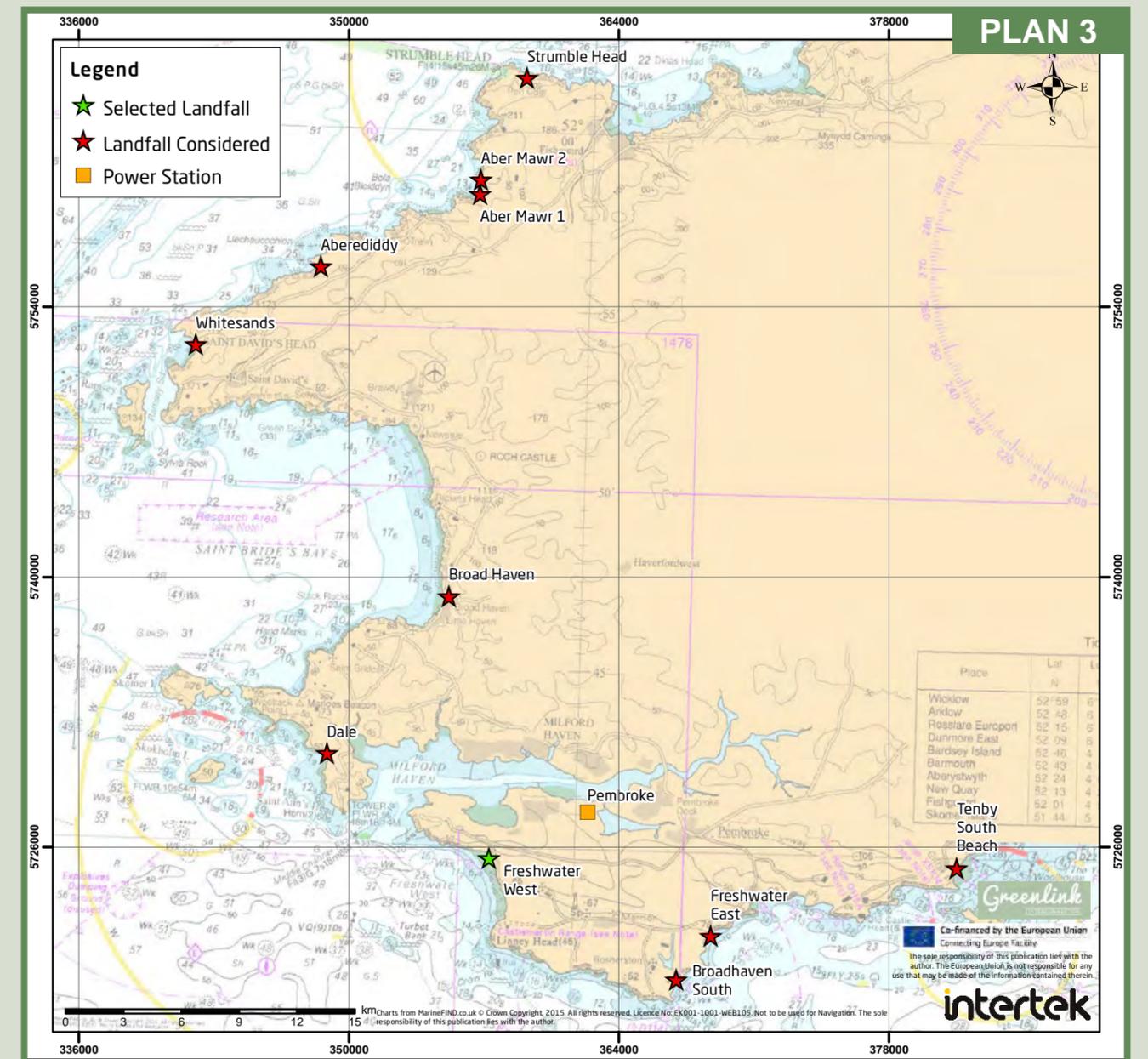
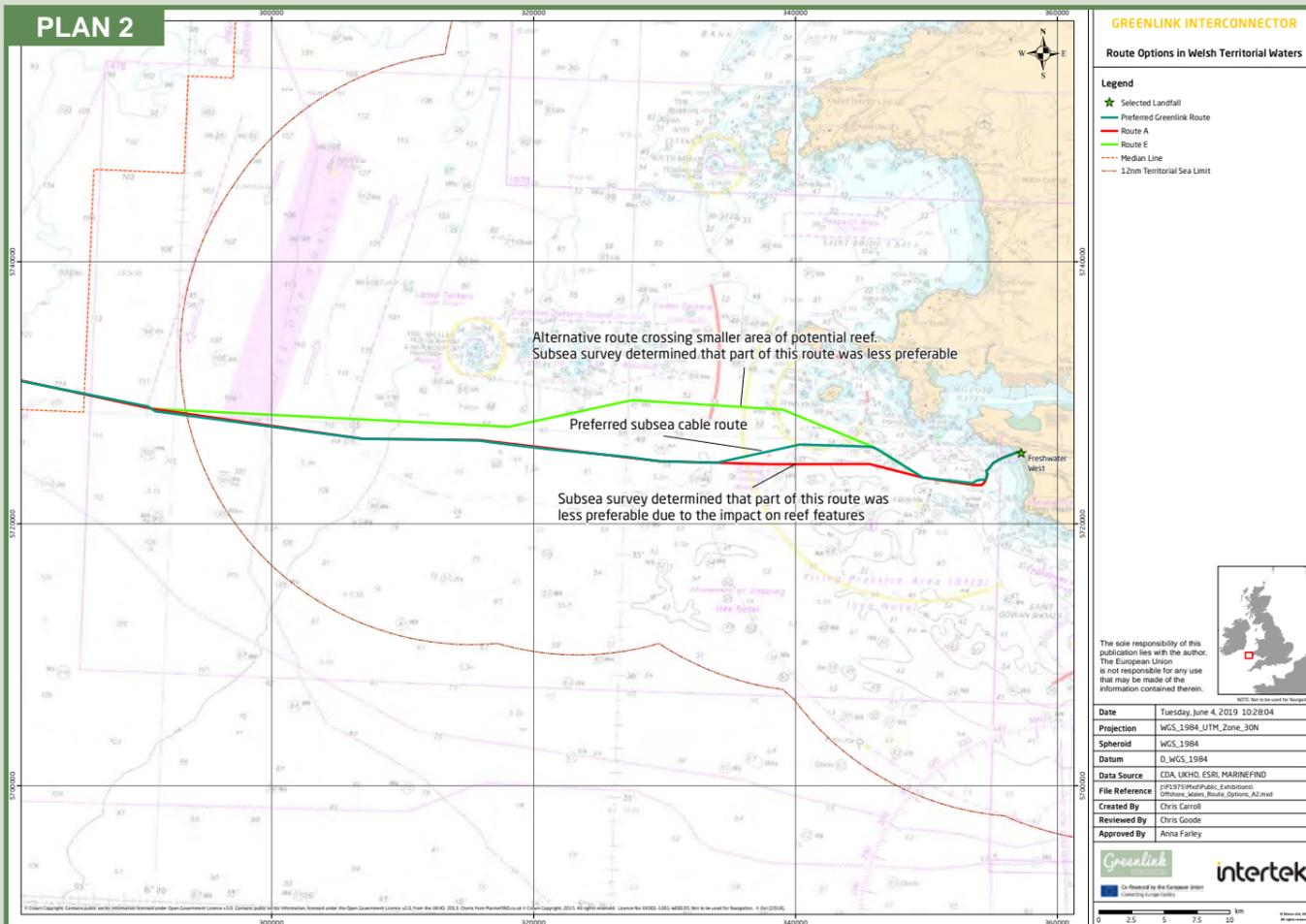
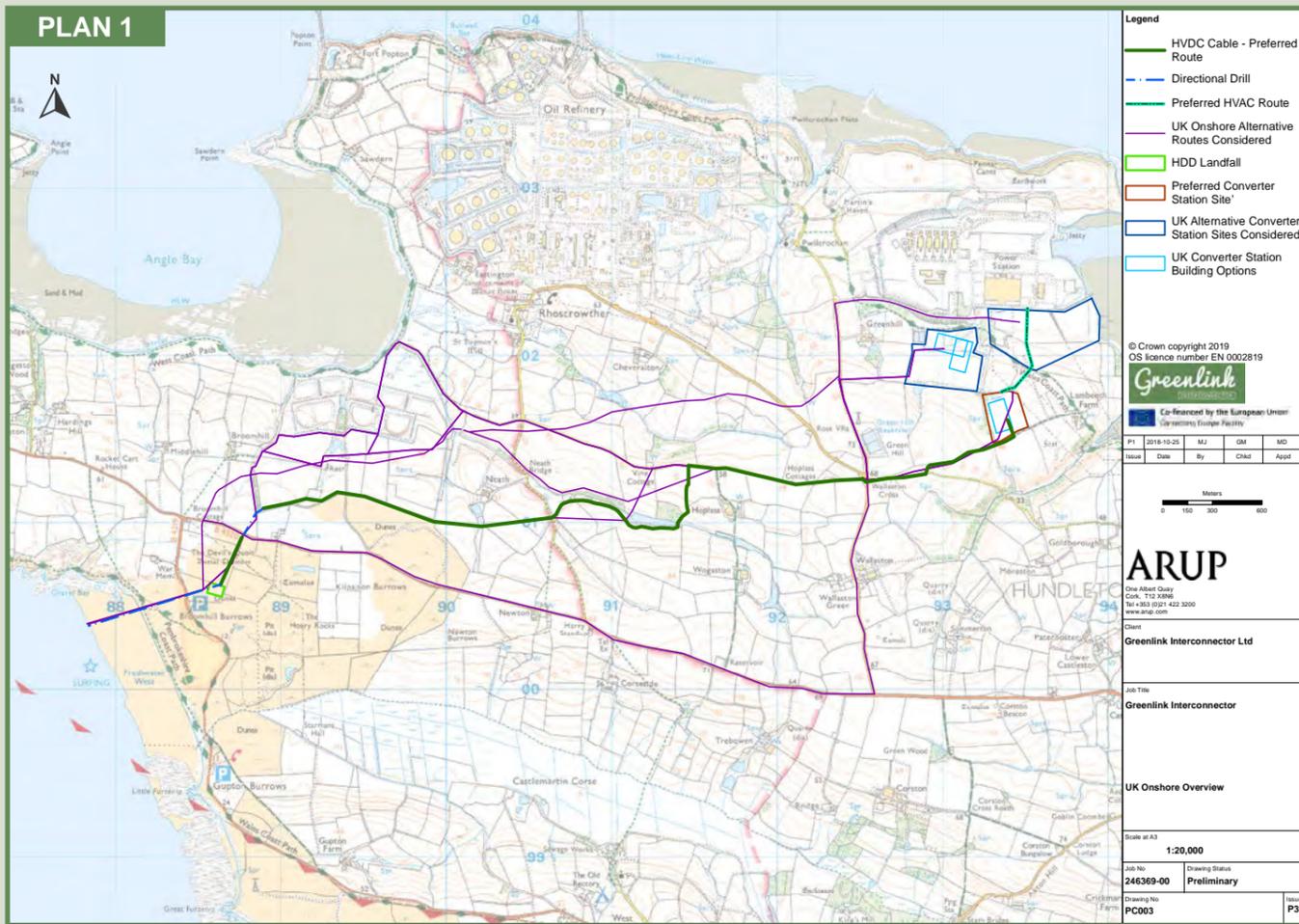
To minimise environmental impact, the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the dunes and beach at Freshwater West.

HDD is a trenchless method of installing underground cables, as detailed on page 13.

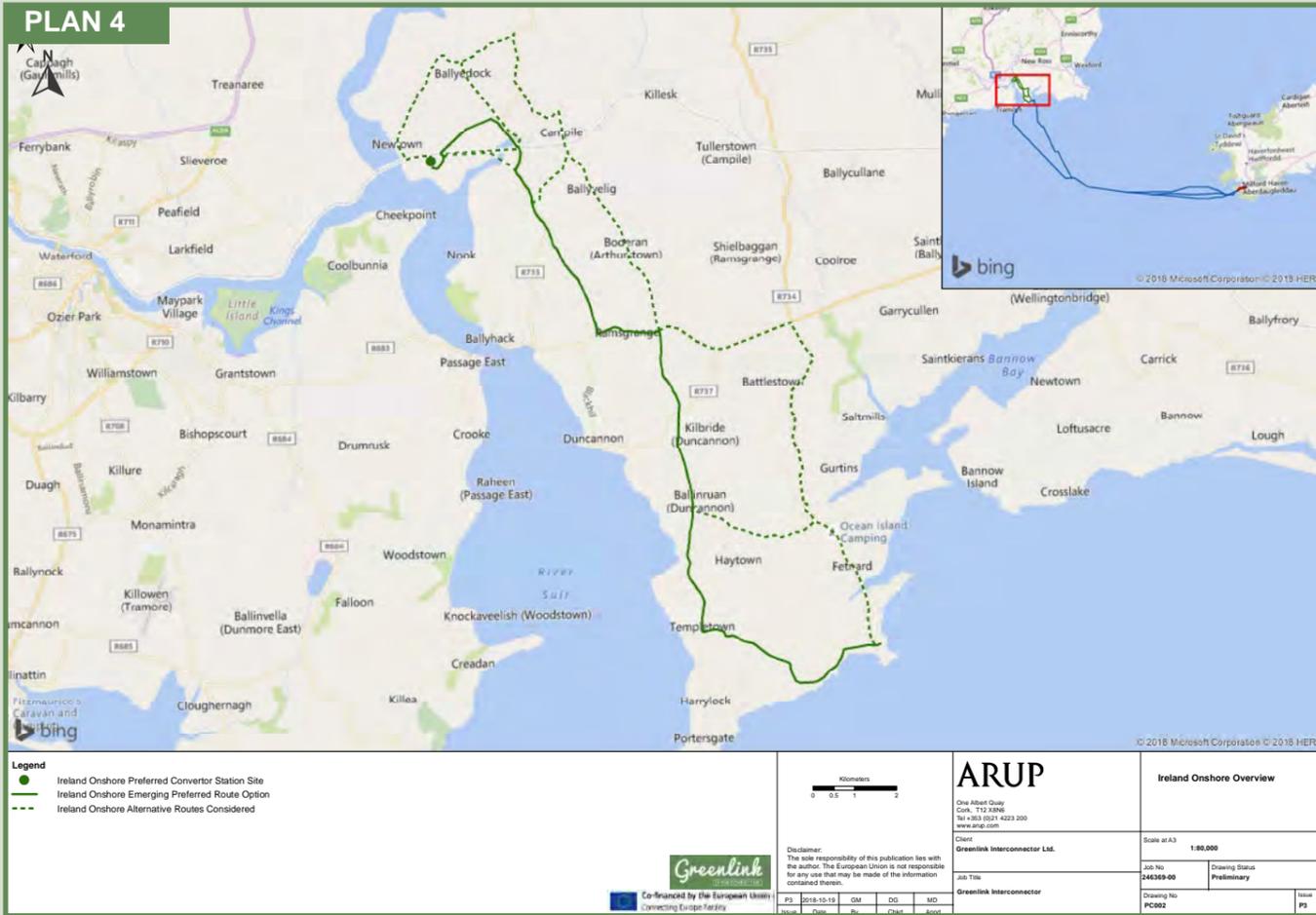
The final subsea route was selected following the conclusion of subsea surveys and consultation with stakeholders.

Two initial routes were subject to subsea surveys. Following the results of surveys confirming the presence of reef habitats a third route was identified and assessed in partnership with Natural Resources Wales. The third route assessed has been confirmed as the preferred subsea cable route. The final subsea route and the two other routes assessed are shown in Plan 2.

The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in Plan 3.



PLAN 4



Greenlink in Ireland

In Ireland, Greenlink will connect into the Great Island 220kV substation in County Wexford. The substation at Great Island was identified as the connection point for Greenlink following the completion of assessments and consultation with EirGrid.

AC cables will connect the HVDC converter station to the substation. A site adjacent to the substation has been identified as the most suitable location to construct the HVDC converter station.

The proposed converter station site is shown in Plan 4 along with potential onshore underground cable routes linking the landfall at Baginbun Beach.

The preferred converter station site and cable route options were identified following environmental and technical assessments and consultation with key stakeholders.

The length of the underground onshore cable route could be circa 22km.

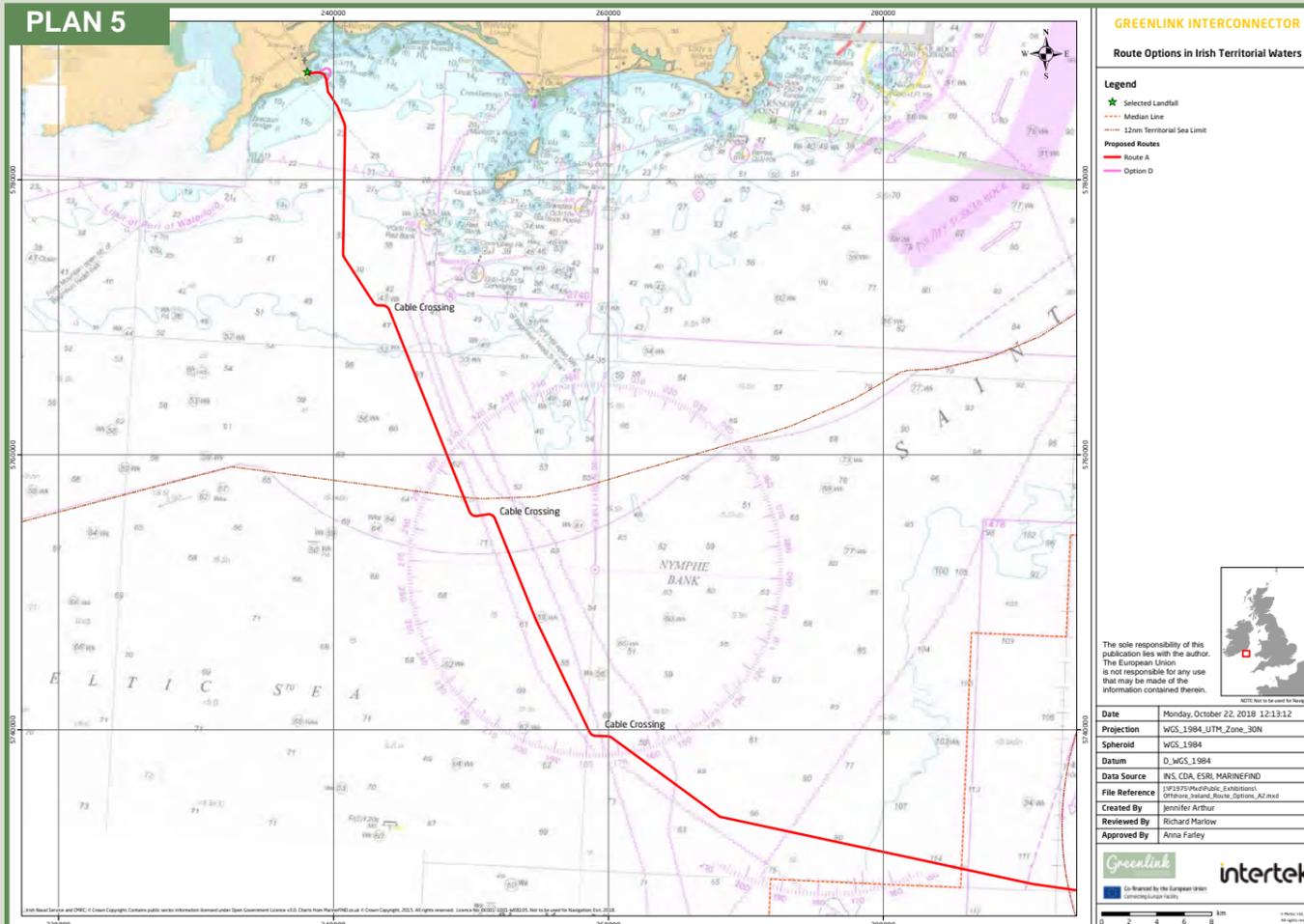
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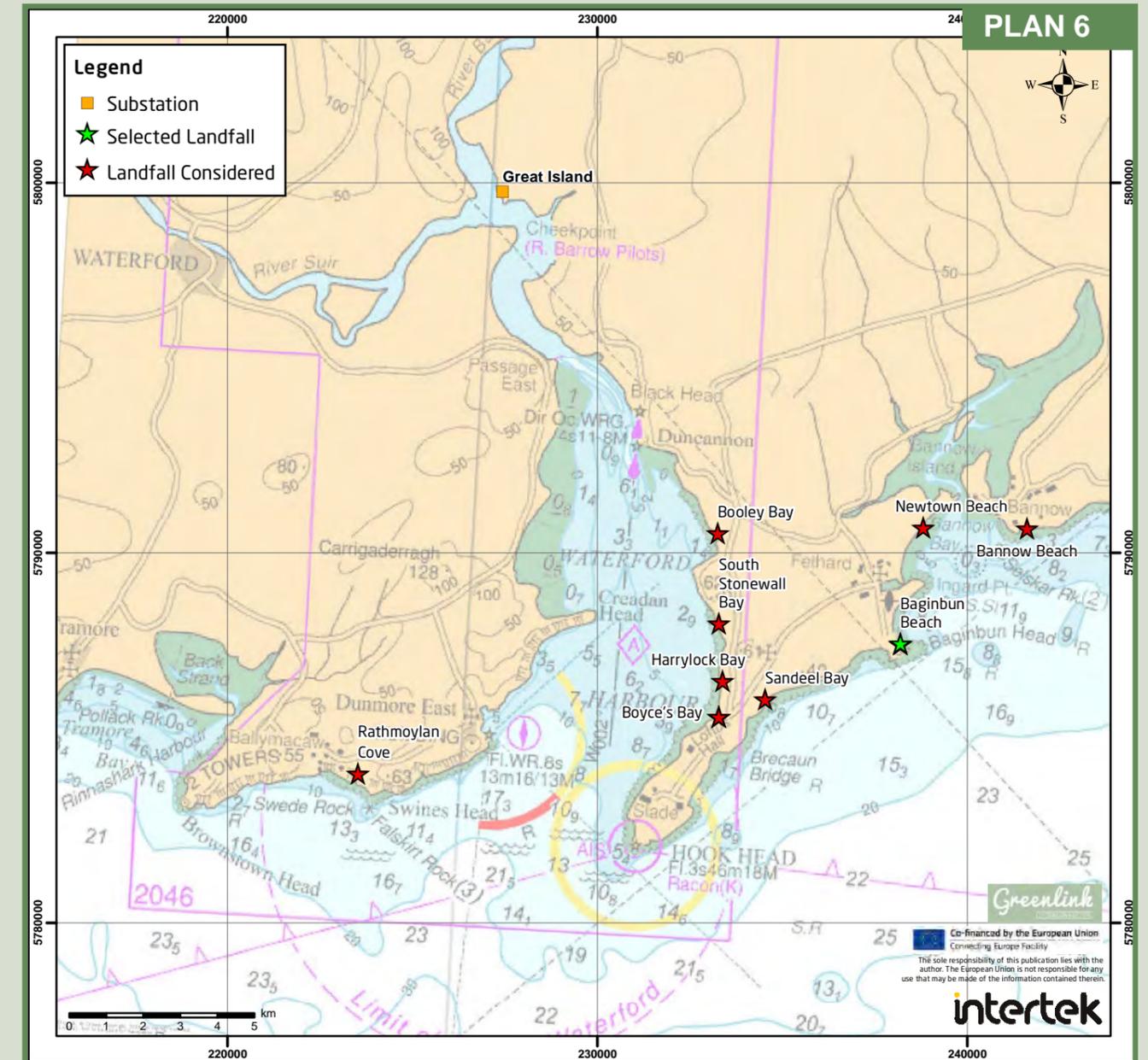
The preferred subsea route was identified following desk-based assessments supported by the results of subsea surveys. The preferred route is shown in Plan 5.

The landfall at Baginbun Beach was selected as the landfall site following a review of potential landfalls in the region. The landfalls assessed are shown in Plan 6.

PLAN 5



PLAN 6





Technical viability

Marine surveys, which commenced in September 2018 and included geophysical and geotechnical surveys, have now all been completed.

Geophysical

The geophysical survey mapped the seabed and sub-surface geology along the survey route corridors to identify marine habitats, optimise cable routing within the survey corridor and enable the assessment of cable target burial depth. It also provided the geophysical data from which a marine archaeological assessment was undertaken as part of the consenting process.

Geotechnical

The geotechnical surveys evaluated the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This was done using a number of techniques, including drilling boreholes and taking shallow core samples.

Marine environmental assessments

Greenlink will cross a number of European Marine Protected Sites: Special Areas of Conservation designated for the protection of habitats and species, and Special Protection Areas designated for the protection of wild birds. To determine if the project is likely to have a significant effect on the conservation objectives of the sites, a Habitats Regulations Assessment (HRA) has been carried out in Wales and a Natura Impact Statement (NIS) has been carried out in Ireland. These processes aim to identify any potential impacts Greenlink may have on designated sites and assesses whether it is likely that the feature of the site will be affected.

Where Greenlink is likely to undermine the conservation objectives of the site e.g. it is possible that condition, characteristics, or distribution of the feature cannot be maintained, then mitigation measures have been proposed to manage or reduce the potential negative impacts identified.

We have completed an Environmental Impact Assessment for Greenlink. An Environmental Statement has been completed for the marine components of the project in Wales and an Environmental Impact Assessment Report has been completed for marine components in Ireland.

The HRA and NIS form part of this larger environmental appraisal. To date, the HRA and NIS conclude that for sites screened as ‘significant effects are likely’, ‘uncertain’ or ‘cannot be ruled out’, that through the implementation of mitigation measures (prescribed at Appropriate Assessment stage) Greenlink will not affect the integrity of the designated sites, either alone or in combination with other plans or projects.

Topics covered by the environmental assessment have included:

- » Coastal processes
- » Protected sites
- » Benthic ecology
- » Fish and shellfish
- » Marine birds
- » Marine mammals and reptiles
- » Marine archaeology and unexploded ordnance
- » Shipping and navigation
- » Recreation and other sea users
- » Cumulative effects

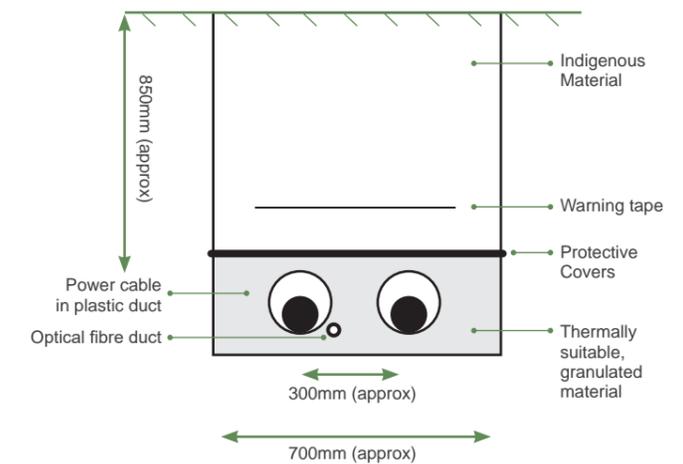
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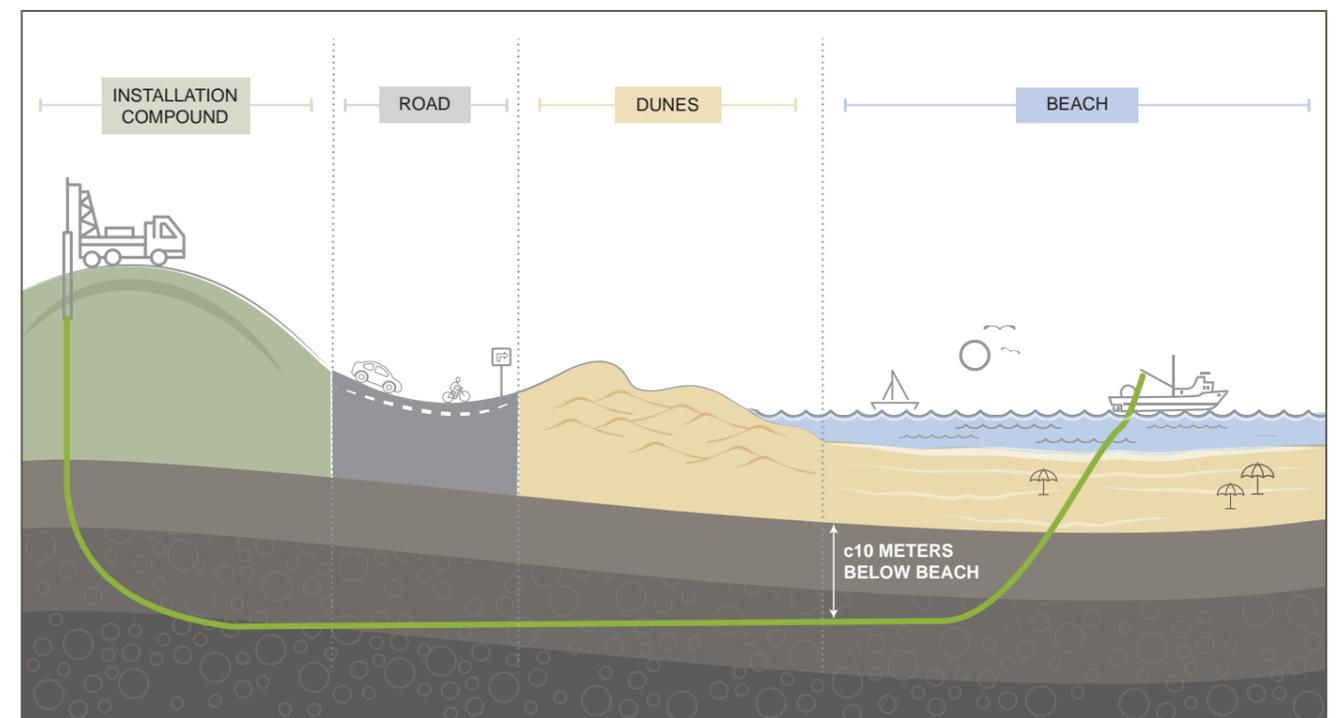
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Figure 1 : Indicative underground cable arrangement



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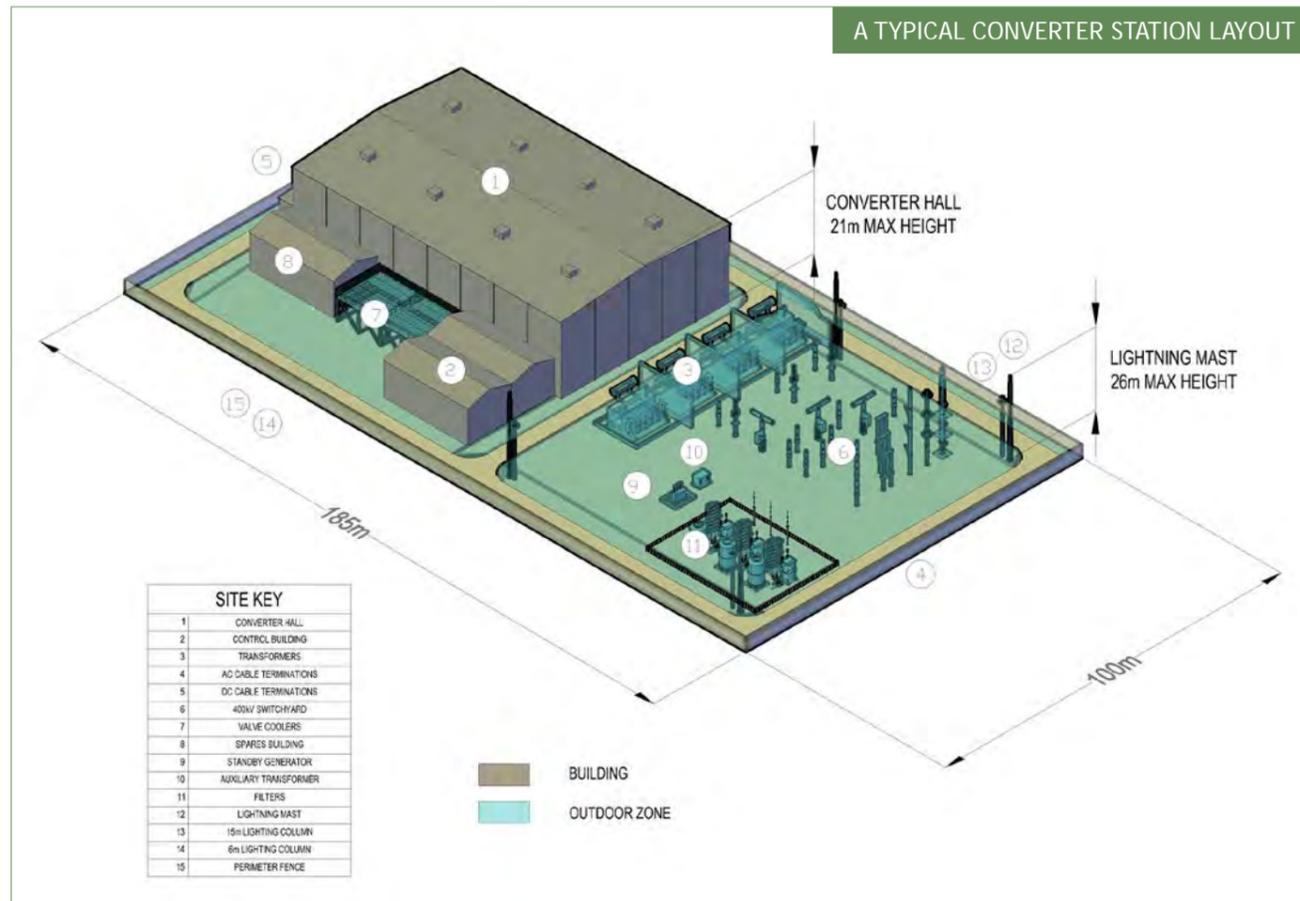


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Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe's most important energy infrastructure projects.

The "Energy Union" launched by the European Commission on 25th February 2015 is driving a fundamental transition towards more innovative ways to produce, transport and consume energy, and to address different approaches to the design and implementation of energy policy.

Facilitating the Union requires a range of actions, chief amongst them being an increase in the physical interconnection of the EU and surrounding country energy grids (both gas and electricity) to meet a 10% interconnection target by 2020 and to reach 15% by 2030.

The EU, Irish and UK governments all agree that even after Brexit, an interconnected grid will help to ensure affordable, secure and sustainable energy, and also growth and jobs across Europe.

- » For information regarding the infrastructure transparency platform referred to in Article 18 of the TEN-E Regulation, please visit: http://ec.europa.eu/energy/infrastructure/transparency_platform/map-viewer/main.html
- » For information regarding the manual of procedures for each of UK and Ireland [https:// assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311184/uk_manual_procedures_ten_e_regulation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/311184/uk_manual_procedures_ten_e_regulation.pdf) and www.pleanala.ie/publications/2014/pocimanual.pdf

Annex 6

Public Exhibition – May 2018

PROJECT BENEFITS



380,000
Potential to power 380,000 homes*



£350m
of private capital investment for Ireland and Wales



Energy
Supports the growth and integration of low carbon energy



Security
Enhances the security of supply for electricity consumers



Value FOR Money
Downward pressure on electricity bills



Jobs
Jobs and knock-on economic benefits during construction

Inward investment and jobs
Greenlink represents c£350m of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid
Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

For more information about opportunities for local businesses, please see our 'Local Supply Chain' board later in this exhibition

Security of supply
Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy
Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition
Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

Benefits for Wales and Pembrokeshire
Greenlink will provide additional transmission network capacity, reinforcing electricity grid in southern Wales. It will also offer valuable inward investment to Wales and Pembrokeshire, including jobs and knock-on economic benefits during construction.

*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.

THE PROPOSAL



Greenlink is a proposed 500 megawatt (MW) subsea and underground cable electricity interconnector (with associated converter stations) between the existing electricity grids in Ireland and Great Britain, allowing for electricity to flow both ways between the two countries. The project will provide a new grid connection between EirGrid's Great Island substation in County Wexford (Ireland) and the National Grid's Pembroke substation in Pembrokeshire (Wales).

Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland, GB and continental Europe. The construction and development of Greenlink will deliver increased energy security, inward investment and value for money for consumers and enable the further integration of low carbon renewable energy sources.

Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe's most important energy infrastructure projects and granting it the "highest national significance" possible.

Greenlink will consist of two converter stations, each located close to the identified existing substations: Great Island Substation in County Wexford (Ireland) and Pembroke Substation in Pembrokeshire (Wales).

The converter stations will be connected to each other by two electricity cables and a fibre optic cable that will enable the two converter stations to communicate for control purposes.

There will be no overhead lines between the two converter stations and the respective substations. Onshore the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

The project will require planning permission in Ireland and Wales. Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built. The Greenlink interconnector is planned for commissioning in 2023.



Sources: Ofgem, TEC Register, 3rd PCI, TYNDP 2016w



WALES



250
jobs in Wales during construction



Jobs
5 permanent Welsh jobs



Grid
Reinforce electricity grid

WHY GREENLINK?

Greenlink
INTERCONNECTOR

Greenlink is a new 500 MW interconnector between Ireland and Wales

Great Britain is currently connected to the island of Ireland by two electricity interconnectors, which provide a means of transferring electricity between the two countries - the East West Interconnector (EWIC), which connects County Dublin to North Wales, and the Moyle interconnector between County Antrim, Northern Ireland and Ayrshire, Scotland.

However, the challenges faced by the British, Irish and wider European energy systems are driving the need for additional interconnectors between Great Britain and Ireland and within Europe as a whole. This will allow electricity to flow more easily between where it is generated and where it is needed, improving the security and reliability of our energy supplies and supporting the integration of greener, low carbon energy sources in an affordable way.

There is a strong need and significant support within Europe for additional interconnection. The 'Energy Union' is a strategy launched by the European Commission in 2015 with the aim of ensuring that European countries have access to secure, affordable and climate-friendly energy.

Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe's most important energy infrastructure projects.

supporting the integration of greener, low carbon energy sources in an affordable way



For more information please visit: www.greenlinkinterconnector.eu

GREENLINK COMPONENTS

Greenlink
INTERCONNECTOR

The key components of the scheme are:

- **Two converter stations** - one near the Great Island Substation in County Wexford (Ireland) and one near the Pembroke Substation in Pembrokeshire (Wales)
- **Two subsea HVDC cables and a fibre optic cable** - the onshore cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

What is an HVDC cable?

- High Voltage Direct Current (HVDC) cables allow for efficient transportation of electricity over large distances and in particular for subsea cables.
- HVDC cables have lower electricity losses than comparable AC cables.
- HVDC cables are suitable for undergrounding both onshore and offshore. There will be no overground cables between the two converter stations.
- One of the benefits of HVDC cables is the relatively small footprint required to install them underground onshore.



What is a converter station?

A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa. DC electricity is used for the transmission of electricity over long distances between two converter stations and AC electricity is used within the national transmission and distribution networks.



What is a fibre optic cable?

A fibre optic cable is installed to provide communication between the converter stations for system monitoring and safety purposes.

For more information please visit: www.greenlinkinterconnector.eu

CONSULTATION

Greenlink
INTERCONNECTOR



Contact details

If you would like the Greenlink team to keep you directly updated on project news and future consultation events, please leave us your name and contact details on the comment sheet provided.

Public consultation is a core part of the development process and ensures that communities in the vicinity of a new proposal have timely and transparent access to information and can engage with developers to influence the final proposal coming forward. We would like to hear what your thoughts and views are on this proposal.

The Greenlink project team wants to ensure that the local community is consulted and involved throughout the development process of the interconnector project.

During the development process we will be looking to fully engage with local residents, councillors, businesses and members of the local community to discuss the proposal and any potential impacts and to obtain feedback on key issues.

We intend to make sure the local community can see that its views have been fully considered and incorporated within the final proposal.

This public exhibition is to allow local residents and stakeholders to view our initial plans, share their views with us, meet the project team and ask questions. We would welcome any feedback that you have now or in the future.

Additional events will be held in due course as the project progresses.



For more information please visit: www.greenlinkinterconnector.eu

LOCAL SUPPLY CHAIN

Greenlink
INTERCONNECTOR

Greenlink is committed to maximising the use of locally-based contractors and personnel during the construction and operational phases of the project.

Construction work on Greenlink is expected to lead to significant expenditure in both Ireland and Wales. A significant amount of work is due to take place at the landfall, cable and converter station sites and will require skills and experience available from contractors found in the local area.

The types of services that could be locally sourced include:

- Transportation - equipment and personnel
- Materials, e.g. supplying and pouring concrete
- Electrical connection
- Hospitality and catering for civil engineering activities and earthworks.
- Office and cleaning supplies
- Site security
- Site services, e.g. portacabins and porta-loos
- Fencing
- Waste disposal



Your Views

Do you know of a local business that could benefit from the Greenlink interconnector project?

Let us know if you want to be added to our list of local suppliers!



For more information please visit: www.greenlinkinterconnector.eu

SITE ASSESSMENT - OVERVIEW

Greenlink
INTERCONNECTOR

As part of the development process, a series of environmental and technical assessment studies are being carried out to establish the viability of all the proposed sites and cable routes and to consider any potential impacts and opportunities arising from the development.

Onshore studies include assessments on:

- Biodiversity
- Historic environment
- Landscape & visual impact
- Flooding & hydrology
- Geology & hydrogeology
- Noise & vibration
- Traffic & transport
- Electromagnetic fields (EMFs)
- Agricultural land
- Socio-economics & human health
- Air quality & climate change
- Cumulative & transboundary effects

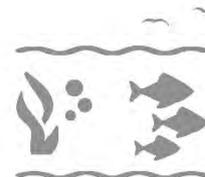
Offshore studies include assessments on:

- Geophysical & geotechnical surveys
- Marine biodiversity (benthic/seabed environment, fish and shellfish, marine birds, marine mammals and reptiles etc)
- Protected designations
- Commercial fisheries
- Shipping & navigation
- Aviation & military
- Marine archaeology & UXOs

Further information on the nature of these assessments is available within the project Environmental Scoping documents.



Noise & vibration



Marine biodiversity



Landscape & visual impact

For more information please visit: www.greenlinkinterconnector.eu

LANDSCAPE & VISUAL IMPACT

Greenlink
INTERCONNECTOR

Landscape

This assessment relates to changes in the physical landscape, brought about by Greenlink, which may alter its character and how this is experienced.

Visual

Visual impact assessment relates to changes in the composition of views as a result of changes to the landscape, how these are perceived and the effects on visual amenity.

We will produce visualisations of the converter stations from viewpoints to be agreed with Pembrokeshire County Council. Viewpoints will be selected to represent the character of the area and particularly important landscape and heritage sites.

Impacts and mitigation

Converter station



A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonics filters, lightning towers, ancillary plant and a control building.

Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. However, the layout of the converter station and final dimensions will depend on the local terrain, physical constraints, the results of environmental surveys, consultations and the supplier's technical requirements.

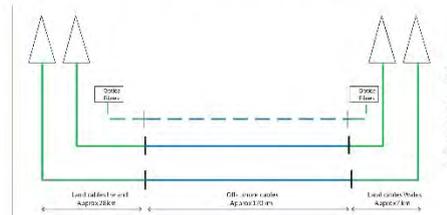
The landscape and visual impact of this will be carefully considered and suitable mitigation, such as landscaping, building finishes, among others, will be proposed.

Cable route

There is the potential for impact from the cable route from vegetation clearance during construction, particularly where the cable route diverges from the road network.

Landscape and visual impacts during cable installation are predicted to be minor and not significant due to the temporary and reversible nature of the change (vegetation clearance) which can be adequately mitigated through replanting.

Following installation and restoration there are not predicted to be any residual landscape and visual effects from the cable route.



“ Your views ... Do you have any suggestions for viewpoints to be assessed? What sort of landscaping planting would you like to see in and around the converter station? ”

PHOTO: www.siemens.com/press

For more information please visit: www.greenlinkinterconnector.eu

WATER AND SOIL

Greenlink
INTERCONNECTOR

Flooding & hydrology

This assessment considers the existing surface and ground water resources in the proximity of Greenlink from the landfall in Freshwater West to the proposed converter station location.

It will assess potential impacts to water bodies, surface water drainage and flood risk due to Greenlink during the construction and operational phases.

Geology & hydrogeology

This assessment considers the existing ground conditions present in the vicinity of the various scheme components and addresses the potential effects that the construction and operation of the project may have on the geological and hydrogeological characteristics of the study area.

The assessment will include consideration of possible effects on the superficial geology (soils), solid geology and geomorphology, including mineral resources beneath the proposed route of the scheme. The groundwater beneath the site and surrounding area will be considered.

The assessment will also consider potential effects posed by any potentially contaminated land along the proposed route.



For more information please visit: www.greenlinkinterconnector.eu

NOISE & VIBRATION

Greenlink
INTERCONNECTOR

This assessment will address potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The proposed underground cable routes pass through predominantly rural areas which are likely to experience low ambient existing noise levels. The converter station locations are also located in a rural area but are all adjacent to an existing substation with its associated operating noise levels.

Noise surveys and assessment

- The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors will be determined via noise surveys.
- Noise-sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship etc) and public open spaces (including public footpaths).
- A study area of 300m around the cable route corridor and converter station locations will be considered for potential construction noise impacts and an area of 50m will be considered for potential construction vibration impacts.
- For operational noise, an assessment will be undertaken at sensitive receptors within 300m of the converter station.

Impacts and mitigation

The construction of the converter station has the potential to give rise to temporary noise and vibration impacts. However, given the distance between the converter station locations and sensitive receptors it is likely that any impact will be low.

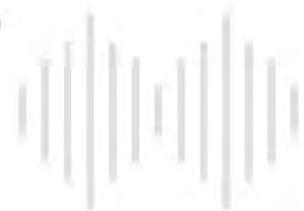
The construction of the cable route has the potential to give rise to temporary noise and vibration impacts in isolated locations along the route, particularly where directional drilling is required at watercourses and road crossings.

There will be noise from the electrical and mechanical plant during the operation of the converter station, most of which will be located indoors in the converter hall.



Your views

Do you have concerns regarding noise and vibration you wish to be assessed?



For more information please visit: www.greenlinkinterconnector.eu

BIODIVERSITY

Greenlink

INTERCONNECTOR

Surveys will be carried out and the data assessed to ensure that the final onshore elements of the proposal are designed sympathetically to the local environment and wildlife and where possible enhancement measures will be employed.

Studies will cover the landfall site and the various cable routes under consideration and the possible converter station locations.

Studies commenced in 2018 include:

- Extended Phase 1 Habitat Survey
- Breeding Bird Surveys

As well as birds, wildlife to be considered by these assessments also include badgers, bats, otters, water voles, reptiles, great crested newts and dormice.

Consideration is also being given to local vegetation, including hedgerows, trees and important habitats.

The surveys will be used to avoid, reduce and offset any impacts on biodiversity through sensitive design and mitigation measures as required.



Your views

Do you know of any local environmental groups that Greenlink should consult?

Are there specific issues you feel should be assessed that aren't currently being assessed?



For more information please visit: www.greenlinkinterconnector.eu

HISTORIC ENVIRONMENT

Greenlink

INTERCONNECTOR

The potential effects of Greenlink on local archaeology and cultural heritage will be assessed by seeking to identify, predict and evaluate the significance of potential effects on designated and non-designated heritage assets within a study area of 1.5 km from the possible converter station locations and within a 200m study area from the cable route corridor.

Cultural heritage encompasses valued features and remains, including buildings, monuments and archaeological remains. It can also include landscapes shaped by human occupation and design, such as historic parks and gardens.

The importance of cultural heritage is recognised in legislation and planning policy.

The converter station locations under review are located within the Milford Haven Waterway Historic Landscape Area but are also located in such a way as to complement the existing industrial surrounds.

A number of archaeological interest features are present in the vicinity of the landfall site at Freshwater West, including a weapons pit and gun emplacement adjacent to the Grade II Listed War Memorial on the far side of the highway from the

landfall site and the Devil's Quoit Burial Chamber Scheduled Monument located within c.100m of the proposed cable alignment from the landfall site.

Given the large number of sites relating to prehistoric activity in this region, there is also a potential for the development to uncover as yet unknown archaeological remains, especially in terms of prehistoric flint scatters.

Impacts and mitigation

During construction the potential impact of the onshore cables, landfall site and the converter station could be the loss or interference with a site or feature of archaeological, architectural and cultural heritage significance caused by excavations or by construction related vibrations.

The importance of cultural heritage is recognised in legislation and planning policy

Greenlink will consider the predicted impacts of the proposed scheme and will aim to avoid adverse effects on archaeology and heritage assets within the study area. Wherever possible, mitigation will be designed to deliver benefits, such as enhancing the visual setting of historic assets.

Greenlink will aim to avoid undisturbed archaeological remains and preserve them in situ. Where this is not possible, preservation by record will be proposed as mitigation.

For more information please visit: www.greenlinkinterconnector.eu

TRAFFIC & TRANSPORT

Greenlink
INTERCONNECTOR



The traffic impact assessment will address the traffic impacts on the road network from the construction and operation of the Greenlink project. The assessment will include the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce will also be addressed.

A Transport Assessment (TA) or Transport Statement (TS) will be produced in accordance with best practice.

The methodology for the TA or TS will be agreed with Pembrokeshire County Council. It will include a review of the existing traffic patterns and an estimation of the traffic volumes which will be generated by the construction of the onshore cable, the landfall site and the converter station. The traffic generated by the construction workforce and by the transport of materials and equipment will also be predicted.

The potential disruption to the road network during the installation of the cables and the availability of alternative routes will be assessed. The traffic distribution pattern on the local road network during construction will be examined and impacts determined.

We will work hard to limit the impact of traffic and transport on local residents and businesses as much as possible and recommendations will be made to mitigate any potential traffic impacts on the road network.

Potential impacts and mitigation

There is potential for traffic impact from Greenlink during the construction phase which will temporarily give rise to additional traffic on the road network.

Installation of the cables may require partial or full road closures and traffic may have to use alternative routes. Where the cable route diverges from the road, the impacts will be reduced.

Once the Greenlink project is in operation, the potential for a traffic impact is minimal. The level of operations and maintenance workforce will be low, so that the impact on any particular road will be insignificant.



Traffic Management Plan (TMP)

As part of the planning application process a Traffic Management Plan (TMP) will be put together that will outline measures for managing and mitigating the construction traffic caused by Greenlink.

Greenlink will consult the local community on a draft TMP to ensure that all considerations of local amenity have been incorporated and that members of the local communities are satisfied with the mitigation measures being proposed.

“

Your views

Do you have any specific concerns? Are there local organisations (businesses, schools etc) that we need to involve in the Traffic Management Plan?

”

For more information please visit: www.greenlinkinterconnector.eu

AGRICULTURAL LAND

Greenlink
INTERCONNECTOR

This assessment considers the impact of the scheme on agricultural land.

Much of the landfall and initial cable corridor is Grade 3b land (moderate quality agricultural land).

The eastern sectors of the cable corridor and the proposed converter station locations are predominantly Grade 2 (best and most versatile agricultural land), interspersed with Grade 3b (moderate quality agricultural land) and non-agricultural land.

Impacts

Construction of the converter station will result in the permanent loss of land from agricultural use. Land disturbed during the construction of the landfall and cable will be reinstated and therefore there will be no permanent loss of agricultural land associated with the landfall or cable route.

Cable heat

The impact of heat generated by the cables on the above-ground crops is not considered sufficient to cause 'sterile strips'. The underground cables which will be used in Wales are designed to have a low resistance, and hence low losses to prevent the cable heating up under normal operating conditions. During events when there is a fault or an outage, there is potential for heat to be generated, however the heat would not be sufficient in scale or in duration to cause sterile strips.

Mitigation

Apart from the converter station, the majority of land take for the project (access tracks, compound sites, cable installations corridor etc) will be temporary, with land excluded from agricultural use for the duration of construction operations only. Temporary land take areas will be reinstated to agricultural use.



Mitigation is likely to include, but will not be limited to, the avoidance of development in arable land (including mixed use and silage fields) in preference of permanent pasture, where practicable; and the informed and sensitive positioning of temporary land take within fields (considerate micro-siting).

Where possible, access tracks and compound sites will be located to the edges of fields, in field boundaries, or less productive areas of individual fields, ensuring that the maximum area of productive land remains in agricultural use.

Consideration of farm activities to minimise disruption to local landholdings and farming businesses will also be a key factor during construction.

“

Your views

Do you have any concerns or observations that should be addressed by Greenlink?

”



For more information please visit: www.greenlinkinterconnector.eu

ELECTROMAGNETIC FIELDS

Greenlink
INTERCONNECTOR

Electric and Magnetic Fields (EMFs) are produced both naturally (Earth has both an electric and a magnetic field) and by humans - wherever electricity is used, both in the home and from the equipment that makes up the UK electricity system.

For example, there are background EMFs present in all houses that come from the house wiring, electrical appliances, and the distribution cables that carry electricity along streets.

Electric fields depend on the operating voltage of the equipment. The operating voltage of transmission equipment is generally constant and so the electric field produced is also nearly constant. Magnetic fields, on the other hand, depend on the electrical currents flowing, which vary according to the electrical power requirement at any given time.

In order to protect members of the public, in locations where people spend significant time, the Council of the European Union passed Recommendation 1999/519/EC on limiting public exposure to electromagnetic fields.

The policy of both National Grid (UK) and ESB (Ireland) is to design and operate their equipment in compliance with the EU recommendation and subsequent legislation.

There are a number of existing sources of EMF in the vicinity of the Greenlink study area.

These include:

- The local electricity distribution system
- Wiring and appliances in nearby homes and other buildings
- Pembroke Substation
- Overhead transmission lines

The Greenlink electrical infrastructure (converter station and underground cables) will be designed to comply with the EC Directive relating to Occupational Exposure to Public Health and the EU 1999 recommendation on Public Exposure.

A National Grid booklet on EMFs is available at this public consultation.

For more information please visit: www.greenlinkinterconnector.eu

SOCIO-ECONOMICS

Greenlink
INTERCONNECTOR

This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects to the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy.

Local tourism

The Wales Coast Path, incorporating the Pembrokeshire Coast Path, runs along the cliff top within the Pembrokeshire Coast National Park. The cable route does not cross the Wales Coast Path; however, the Wales Coast Path will need to be considered in relation to the proposed converter station.

Freshwater West is a popular beach with water sports enthusiasts, local fishermen and nearby tourist facilities.

Several undesignated footpaths are also within the study area. Further consultation with the Local Planning Authority should clarify the status of paths and any constraints during construction.



Potential impacts

Temporary impacts may be incurred on the Wales Coast Path; similarly, temporary disruption may be felt depending on the requirement to install cables within the highway.

Direct and indirect employment will be created for both the construction and operational phase.

The construction of the cables and converter station have the potential to have a negative impact on residential amenity in the immediate vicinity of the construction activities. Once the cables and converter station are operational, the potential for negative impact on residential amenity is minimal.



Your views

Please let us know of any local tourism business or group we need to consider and involve in project discussions.

Are there any particular local events that attract tourists that Greenlink needs to be aware of?



Jobs

Jobs and knock-on economic benefits during construction

For more information please visit: www.greenlinkinterconnector.eu

AIR QUALITY

Greenlink
INTERCONNECTOR



This assessment considers the potential impacts on air quality during construction, including dust emissions, on-site machinery and construction traffic travelling to and from the site. The potential impacts on air quality during the operational phase will also be addressed.

The construction phase of Greenlink has the potential to generate dust emissions, which could give rise to nuisance for local residents. Construction plant and equipment, and the traffic generated by the construction process, have the potential to give temporary rise to emissions of oxides of nitrogen and particulate matter, which could impact on local air quality.

Following the assessment of air quality effects during the construction phase, mitigation measures will be recommended to minimise the impact from dust. These measures, including dust suppressant measures, will be considered for both human and ecological receptors.

The operational phase of Greenlink is not expected to adversely affect local air quality as no new sources of emission to air will be introduced and additional road traffic associated with maintenance of the converter station is anticipated to be minimal.

Consideration of the impact of the Greenlink project on the climate (e.g. greenhouse gas emissions) and its vulnerability to climate change is also factored in.



For more information please visit: www.greenlinkinterconnector.eu

MARINE SURVEYS

Greenlink
INTERCONNECTOR

The proposed marine cable will run from Freshwater West, Pembrokeshire, Wales to the Hook Head Peninsula in County Wexford, Ireland. There are 3 possible routes being considered as the cable approaches Freshwater West. All three routes are being assessed for technical viability and potential environmental impacts.

Technical viability

Marine surveys are taking place in the summer of 2018 and will include geophysical and geotechnical surveys.

Geophysical

The geophysical survey will look to map the seabed and sub-surface geology along the proposed route in order to be able to optimise cable routing within the survey corridor and to enable assessment of cable target burial depth along the route.

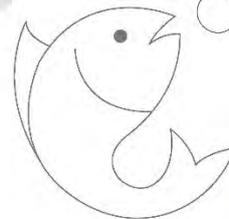
It will also look to provide the geophysical data from which a marine archaeological assessment can be undertaken as part of the consenting process.

Geotechnical

The purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This will be done using a number of techniques, including drilling boreholes and digging trial pits.

Environmental impacts

The initial marine survey aims to map the distribution and extent of marine habitats within the proposed cable corridor. Data from this survey will then be used to inform the environmental assessment.



For more information please visit: www.greenlinkinterconnector.eu

MARINE ENVIRONMENTAL ASSESSMENTS

Greenlink
INTERCONNECTOR

The aims of the environmental assessment will be to identify potential impacts, including:

- Penetration and/or disturbance of the substrate below the surface of the seabed
- Visual disturbance
- Underwater noise changes
- Siltation rate changes
- Hydrological changes
- Physical loss (permanent change)
- Electromagnetic changes
- Possible in-combination effects

Topics covered by the environmental assessment will include:

- Protected sites
- Benthic ecology
- Fish and shellfish
- Marine birds
- Marine mammals and reptiles
- Marine archaeology and UXOs
- Coastal processes
- Fisheries
- Shipping and navigation
- Recreation
- Cumulative effects

Mitigation

Once potential impacts have been established, mitigation measures will be proposed to ensure that impacts are minimised or removed.

“

Your views

Greenlink has appointed a Fisheries Liaison officer to liaise with local fishing interests. Do you want our Fisheries Liaison officer to contact you?

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For more information please visit: www.greenlinkinterconnector.eu

PROJECT TIMELINE

Greenlink
INTERCONNECTOR

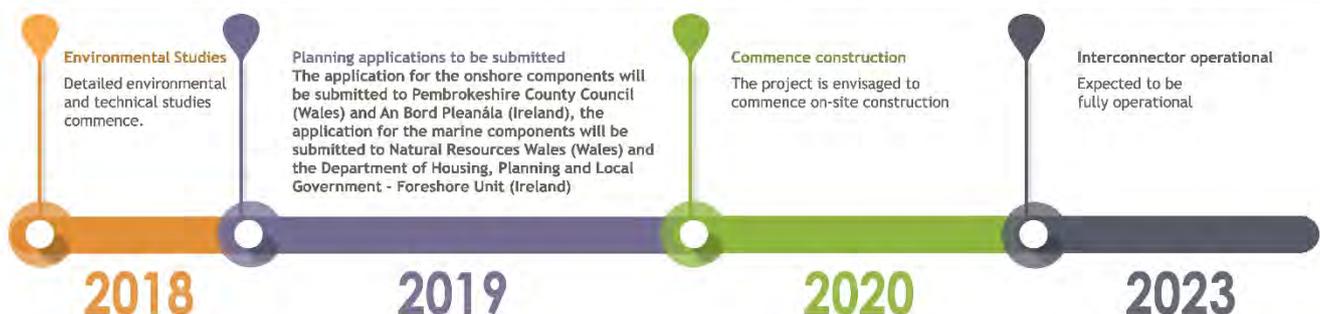
A large infrastructure project such as the Greenlink interconnector takes several years from development to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have to be identified and fully assessed to ensure that they are considered within the final design of an infrastructure project. Detailed environmental and technical assessment surveys commenced in 2018. This follows the completion of desk-based assessments and consultation with statutory consultees.

Once a detailed proposal and design have been put together, permits and licences will need to be obtained from: Pembrokeshire County Council, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government - Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will need to be constructed, which could take around 36 months from start to finish.

The project is envisaged to commence on-site construction in 2020 and be fully operational in 2023



For more information please visit: www.greenlinkinterconnector.eu

THE PLANNING PROCESS (WALES)



Following consultation with statutory consultees, Greenlink is of the view that the interconnector does not require the completion of an Environmental Impact Assessment (EIA).

However, Greenlink is committed to carrying out a comprehensive and thorough development process and will therefore be producing a non-statutory Environmental Report with a structure that aligns with the EIA process. This will ensure that all environmental issues are addressed effectively.



Onshore components in Wales

Due to the nature and size of the proposed converter station and associated access arrangements, the planning application will likely constitute a 'major development' as defined by the Town and Country Planning (Development Management Procedure) (Wales) Order 2016. As such, it will undergo a standard planning application schedule, accompanied by an Environmental Report and will include statutory pre-application consultation; including a public consultation element.

The planning application for the converter station is expected to be submitted to Pembrokeshire County Council in March 2019, once all the technical and environmental assessments have been completed and the choice of sites/cable routes and the designs finalised.

In accordance with Schedule 2, Part 17, Class G of the Town and Country Planning (General Permitted Development) Order 1995 (as amended) (GPDO) the landfall site and underground HVDC cabling constitute 'permitted development' and as such are not anticipated to require planning permission. To confirm the planning status of the cable installation, Greenlink will apply for a Certificate of Lawful Development (CoLD). This is expected to take place prior to the converter station planning application.

It is important to note that, despite the 'permitted development' status of the cabling and landfall, Greenlink is committed to completing a detailed environmental assessment of the cable route and landfall to ensure that the design and installation fully considers the local environment.

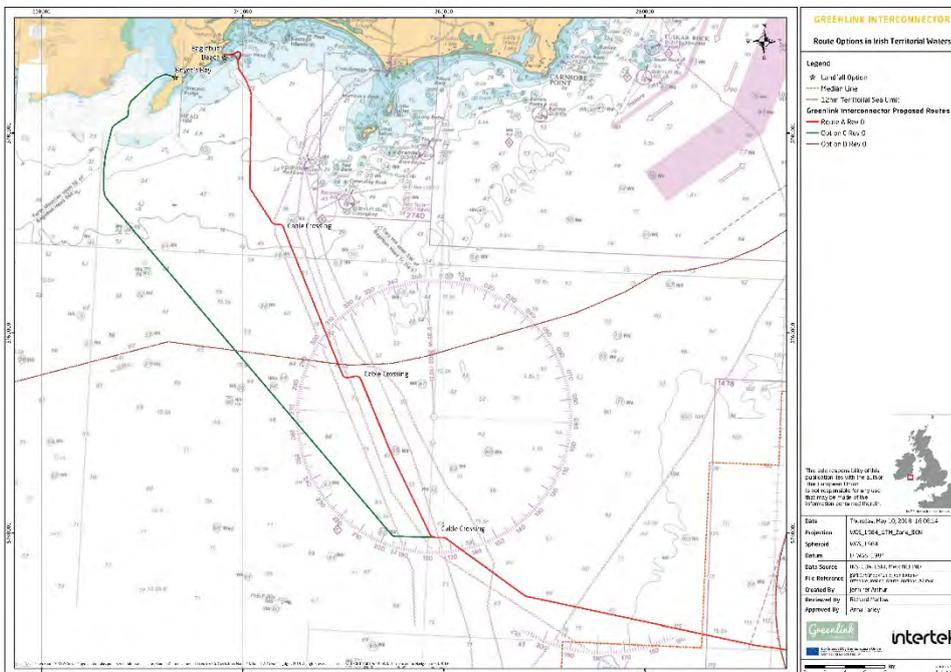
Marine components in Wales

Subsea surveys are scheduled to be undertaken during the summer of 2018. The results of these surveys will be used to finalise the subsea cable route and be incorporated into a Marine Licence application submitted to Natural Resources Wales and a Marine Works Licence submitted to Milford Haven Port Authority. Both applications are expected to be submitted in March 2019.



For more information please visit: www.greenlinkinterconnector.eu

OFFSHORE IRELAND ROUTE OPTIONS

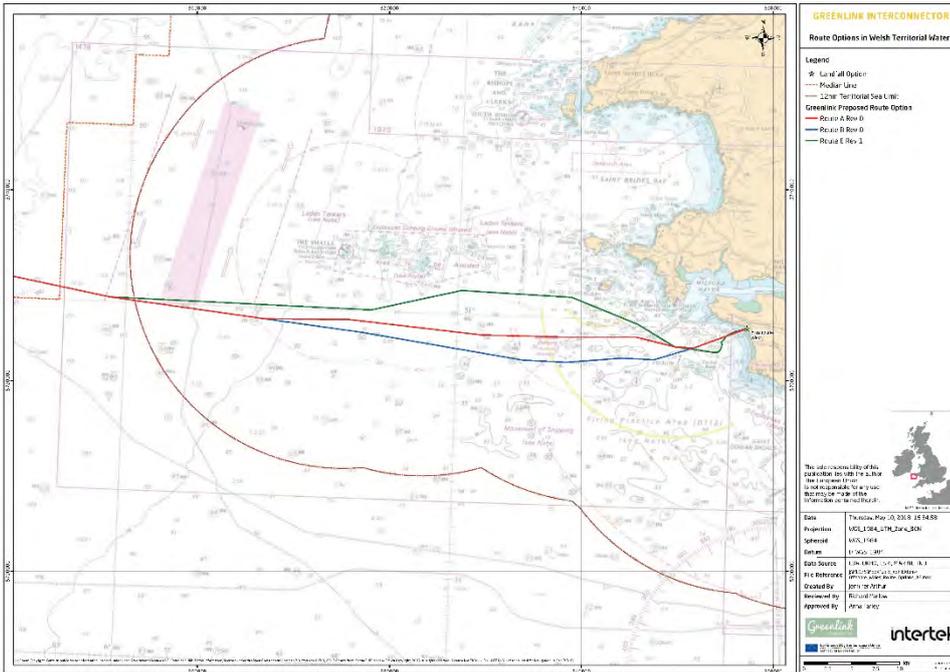


There are currently two subsea routes being assessed off the Irish coast. The routes under assessment are shown in this plan.

The final route will be selected following the conclusion of subsea surveys and consultation with stakeholders.

For more information please visit: www.greenlinkinterconnector.eu

OFFSHORE WALES ROUTE OPTIONS

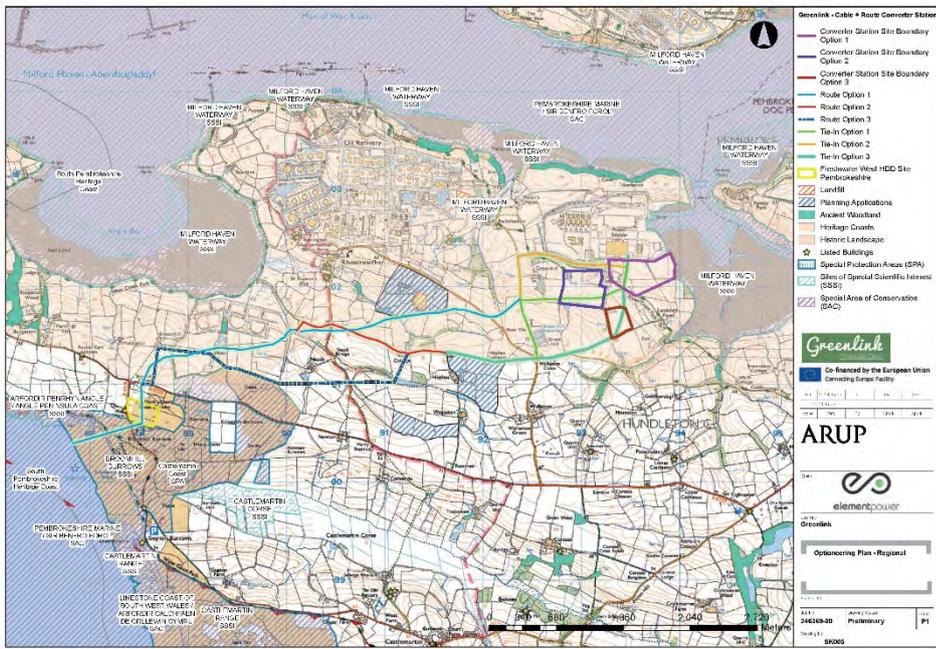


There are currently three subsea routes being assessed off the Welsh coast. The routes under assessment are shown in his plan.

The final route will be selected following the conclusion of subsea surveys and consultation with stakeholders.

For more information please visit: www.greenlinkinterconnector.eu

OPTIONEERING PLAN - REGIONAL

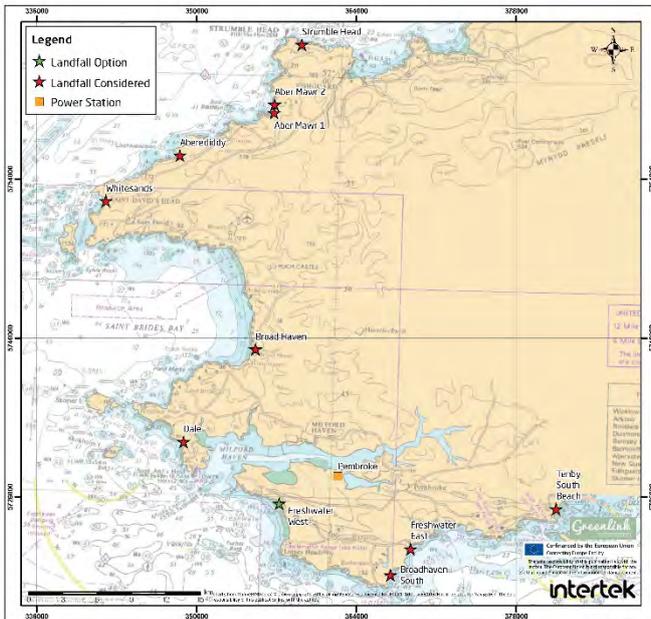


Three sites, in close proximity to the substation, are currently being assessed as potential locations to locate the HVDC converter station. The sites under investigation are shown in his plan along with potential onshore underground cable routes linking the proposed landfall site at Freshwater West with the converter station sites.

For more information please visit: www.greenlinkinterconnector.eu

WELSH LANDFALLS

Greenlink
INTERCONNECTOR



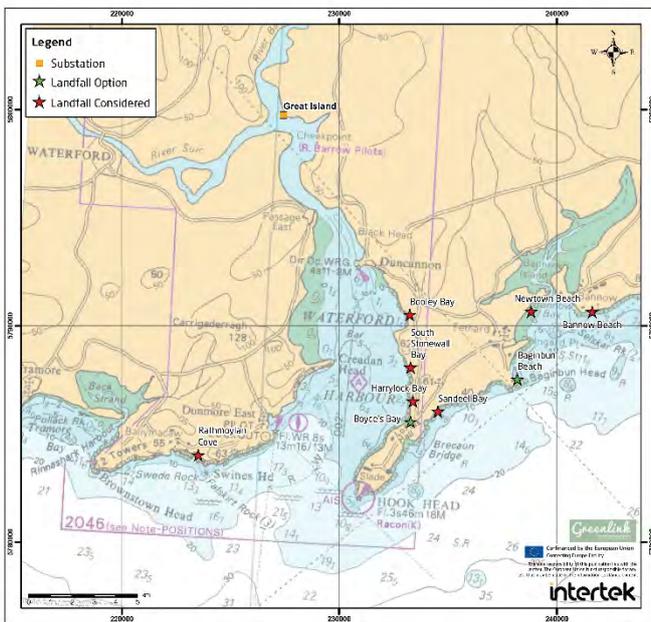
The final converter station site and cable route will be selected following environmental and technical assessments and consultation with key stakeholders. The length of the onshore cable route could be circa. 7km.

The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in this plan.

For more information please visit: www.greenlinkinterconnector.eu

IRISH LANDFALLS

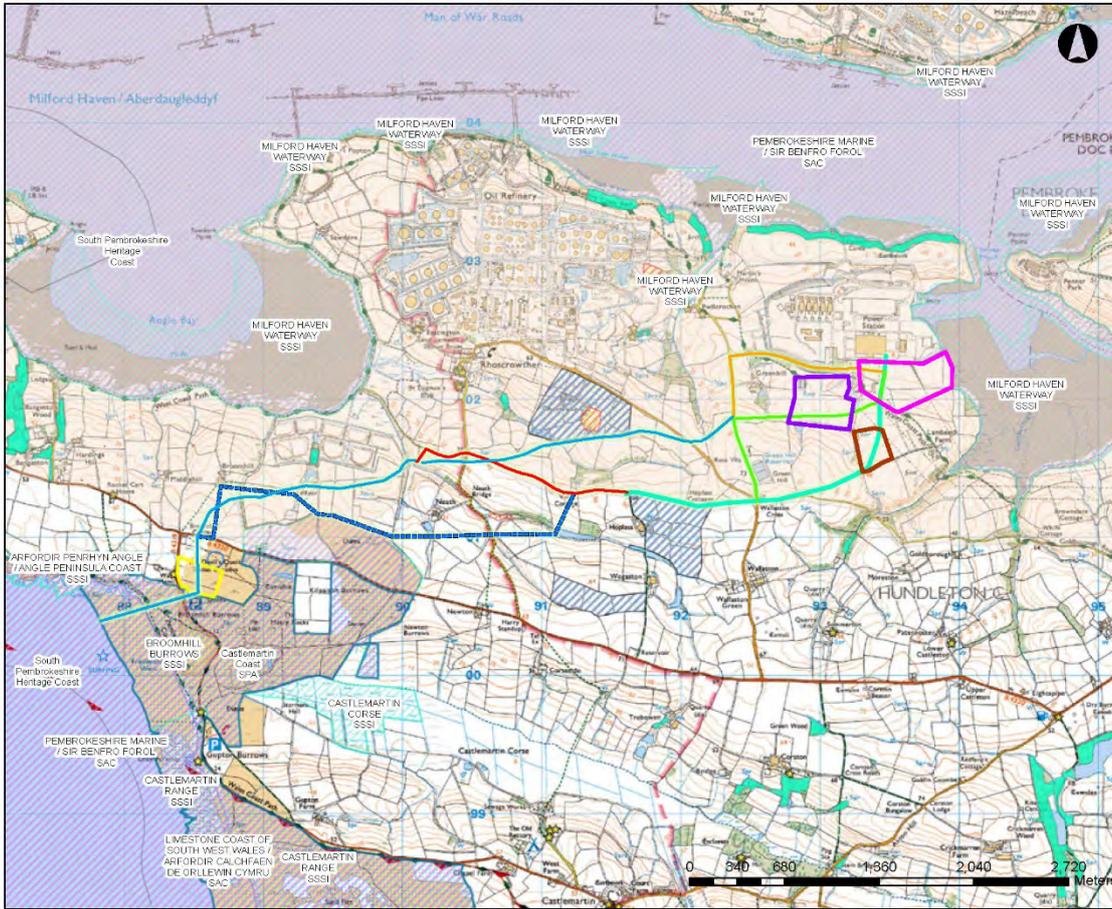
Greenlink
INTERCONNECTOR



The final converter station site and cable route will be selected following environmental and technical assessments and consultation with key stakeholders. The length of the onshore cable route could be circa. 28km.

The landfalls at Boyce's Bay and Baginbun Beach were selected for further investigation following a review of potential landfall sites in the region. The landfalls assessed are shown in this plan.

For more information please visit: www.greenlinkinterconnector.eu



Greenlink
Co-financed by the European Union
Connecting Europe Facility

PE	2019/05/02	LL	TR	SR
Issue	Date	Dr	Chg	App
246389-00				P1

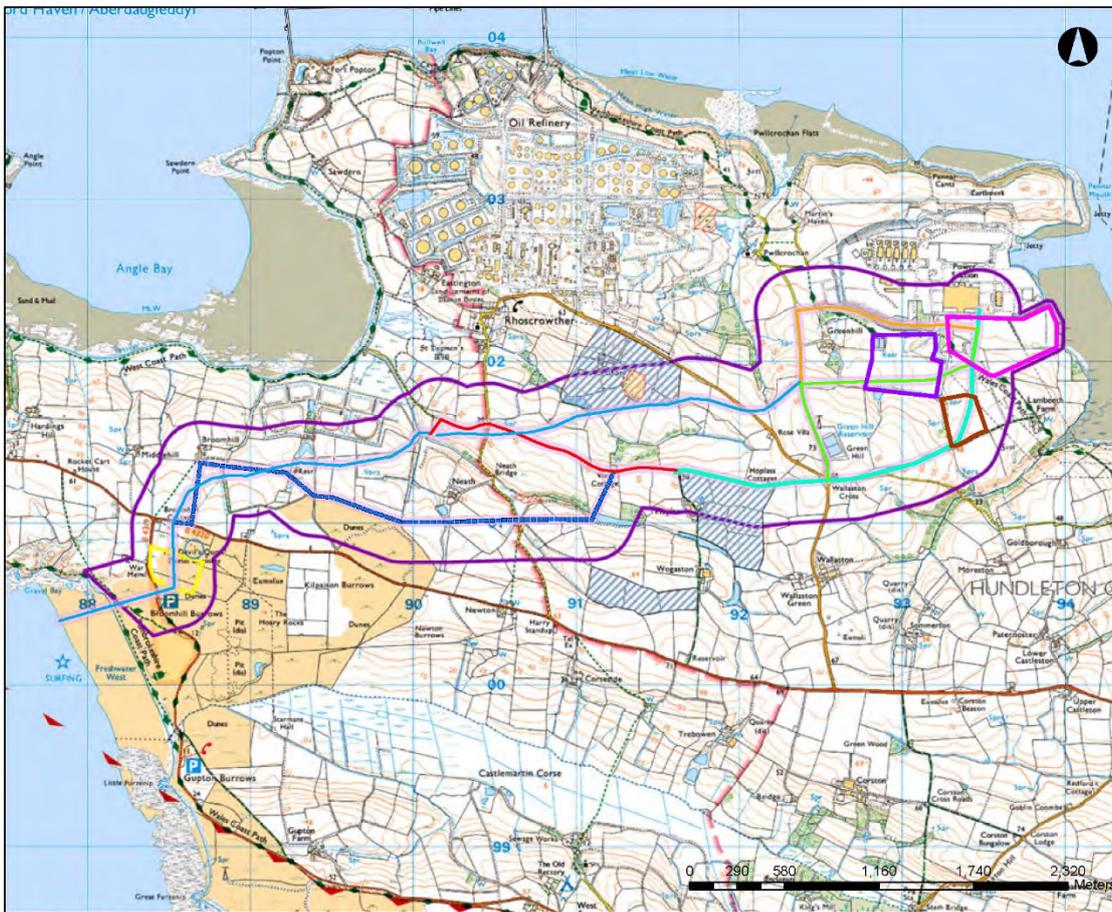
ARUP

Client: **elementpower**

Project: **Greenlink**

Study Title: **Optioning Plan - Regional**

Scale: A3	Issue No:	Drawing Status:	Issue:
	246389-00	Preliminary	P1
Drawing No:	SK005		



Greenlink
Co-financed by the European Union
Connecting Europe Facility

PE	2019/05/14	MJ	MJ	OM
Issue	Date	Dr	Chg	App
246389-00				P1

ARUP

Client: **elementpower**

Project: **Greenlink**

Study Title: **Ecological Survey Area**

Scale: A3	Issue No:	Drawing Status:	Issue:
	246389-00	Preliminary	P1
Drawing No:	SK005		



PUBLIC EXHIBITIONS

Greenlink is a proposed electricity interconnector that will link the GB electricity transmission system in Pembrokeshire with that of Ireland via underground and subsea cables.

It is proposed that the subsea cables will come onshore underground at Freshwater West (under the existing dunes and beach), carry on underground in the direction of Pembroke Substation, where they will connect to a new purpose-built converter station located nearby.

Greenlink brings significant benefits on both sides of the Irish Sea for employment, energy security and the integration of low carbon energy sources.

We are committed to working with local residents and stakeholders to design and develop a project that is of the highest standard. To that end we would welcome your input throughout the development process.



To find out more about the proposal, and to share your views, please come along to one of our public exhibitions.

Further information is also available on the project website:
www.greenlinkinterconnector.eu

When & Where

29TH MAY 2018
2PM TO 8PM

Pembroke Dock
Pater Hall
Dimond Street
Pembroke Dock
SA72 6DD

30TH MAY 2018
2PM TO 8PM

Hundleton
Sports Pavillion
Hundleton
Pembroke

31ST MAY 2018
2PM TO 8PM

Angle Village Hall
Angle,
Pembroke
SA71 5AS



Annex 7

Public Exhibition - December
2018

WELCOME TO THE EXHIBITION



Welcome

Welcome and thank you for taking the time to come to this public exhibition for the Greenlink Interconnector project (Greenlink).

We have prepared the information on display here today to help you find out more about our work on Greenlink.

Members of the project team are here to answer your questions.

About the developer

Greenlink is being developed by Greenlink Interconnector Limited. Greenlink Interconnector Limited is 100% owned by Element Power Holdings, a leading global developer of renewable energy, energy storage, flexible generation and interconnection projects.

For more information please visit:
www.greenlinkinterconnector.eu



Your Views

We are very interested to hear your views, so please feel free to fill in a comments form and drop it in the box provided before you leave.



PROJECT BENEFITS



380,000
Potential to power 380,000 homes*



Investment
€400m/£350m of private capital investment for Ireland and Wales



Energy
Supports the growth and integration of low carbon energy



Security
Enhances the security of supply for electricity consumers



Value FOR Money
Downward pressure on electricity bills



Jobs
Jobs and knock-on economic benefits during construction

Regional investment and jobs
Greenlink represents €450m/£350m of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid
Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

Security of supply
Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy
Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition
Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

Benefits for Wales and Pembrokeshire
Greenlink will provide additional transmission network capacity, reinforcing the electricity grid in southern Wales. It will also offer valuable regional investment to Wales and Pembrokeshire, including jobs and knock-on economic benefits during construction.

For more information about opportunities for local businesses, please see our 'Local Supply Chain' board later in this exhibition

*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.

WALES



250
jobs in Wales during construction



Jobs
5 permanent Welsh jobs



Grid
Reinforce electricity grid



WHY GREENLINK?



Greenlink is a new 500 MW interconnector between Ireland and Wales

Great Britain is currently connected to the island of Ireland by two electricity interconnectors, which provide a means of transferring electricity between the two countries - the East West Interconnector (EWIC), which connects County Dublin to North Wales, and the Moyle interconnector between County Antrim, Northern Ireland and Ayrshire, Scotland.

However, the challenges faced by the British, Irish and wider European energy systems are driving the need for additional interconnectors between Great Britain and Ireland and within Europe as a whole. This will allow electricity to flow more easily between where it is generated and where it is needed, improving the security and reliability of our energy supplies and supporting the integration of greener, low carbon energy sources in an affordable way.

There is a strong need and significant support within Europe for additional interconnection. The 'Energy Union' is a strategy launched by the European Commission in 2015 with the aim of ensuring that European countries have access to secure, affordable and climate-friendly energy.

Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe's most important energy infrastructure projects.

supporting the integration of greener, low carbon energy sources in an affordable way



Supporting Renewable Energy



Improving Energy Security



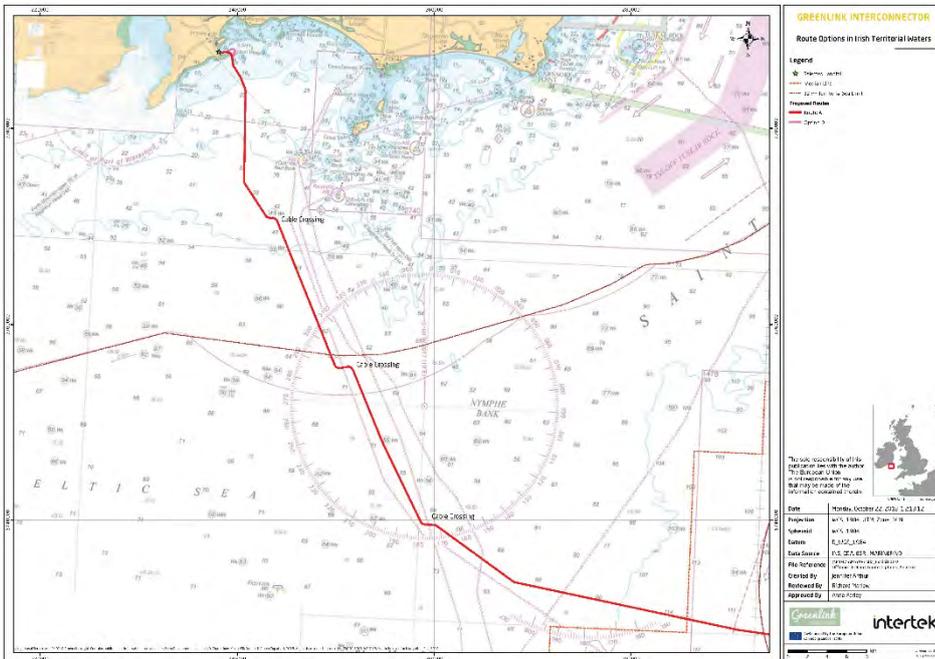
Fighting Climate Change



Benefitting Consumers

For more information please visit: www.greenlinkinterconnector.eu

OFFSHORE IRELAND ROUTE OPTIONS



A preferred subsea route has been identified following desk-based assessments supported by the results of early subsea surveys.

For more information please visit: www.greenlinkinterconnector.eu

THE PROPOSAL



Greenlink is a proposed 500 megawatt (MW) subsea and underground cable electricity interconnector (with associated converter stations) between the existing electricity grids in Ireland and Great Britain, allowing for electricity to flow both ways between the two countries. The project will provide a new grid connection between EirGrid's Great Island substation in County Wexford (Ireland) and the National Grid's Pembroke substation in Pembrokeshire (Wales).

Greenlink will have key strategic importance, as it will provide significant additional interconnection capacity between Ireland, GB and continental Europe. The construction and development of Greenlink will deliver increased energy security, regional investment and value for money for consumers and enable the further integration of low carbon renewable energy sources.

Greenlink has been awarded Project of Common Interest (PCI) status, making it one of Europe's most important energy infrastructure projects and granting it the "highest national significance" possible.

Greenlink will consist of two converter stations, each located close to the identified existing substations: Great Island Substation in County Wexford (Ireland) and Pembroke Substation in Pembrokeshire (Wales).

The converter stations will be connected to each other by two electricity cables and a fibre optic cable that will enable the two converter stations to communicate for control purposes.

There will be no overhead lines between the two converter stations and the respective substations. Onshore the cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

The project will require planning permission in Ireland and Wales. Constructing and commissioning an interconnector requires the completion of a thorough programme of environmental and technical assessment to ensure that the final interconnector design fully considers the environment in which it is built. Greenlink is planned for commissioning in 2023.



Sources: Ofgem, TEC Register, 3rd PCI, TYNDP 2016w



CONVERTER STATION SITES

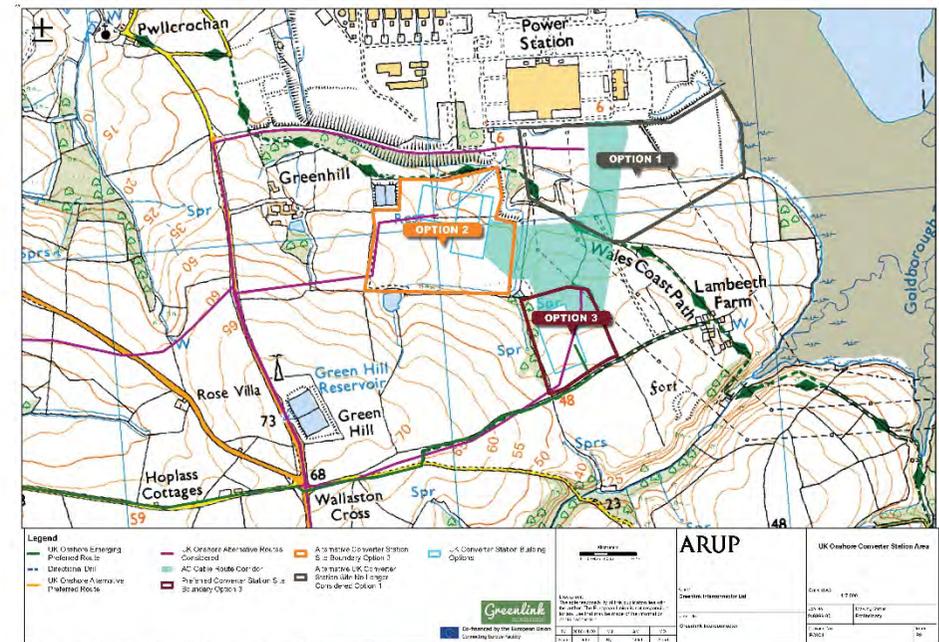


Preferred Converter Station Site

Following environmental surveys, landowner discussions and investigation of technical requirements, Converter Station Option 3 has emerged as the preferred location for the converter station. However, Option 2 is currently retained as an alternative. The investigations to date have demonstrated that Converter Station Option 3 has substantially fewer constraints when compared to Converter Station Option 2. Constraints identified for Converter Station Option 2 include: European and Nationally Protected Species (otter, badger, bats and dormice), an historic borrow pit, historic landfills, immediate proximity to the Wales Coast Path, habitat removal and watercourse crossing for AC cable connection and the need for a new section of access road to connect the site to the public highway.

Constraints relevant to Converter Station Option 3 relate primarily to landscape and visual effects and focus on the need to provide a design suitable to its setting, potentially incorporating parameter rules to the outline design, sensitive operational lighting and effective landscape screening mitigation to reduce visual impacts from key viewpoints.

Environmental and technical assessments will initially continue on both sites. However, it is proposed that only one site will be submitted for planning approval. At this stage in the process it is anticipated that Converter Station Option 3, as the preferred site, will be submitted for planning approval and the Environmental Statement will focus on Converter Station Option 3.

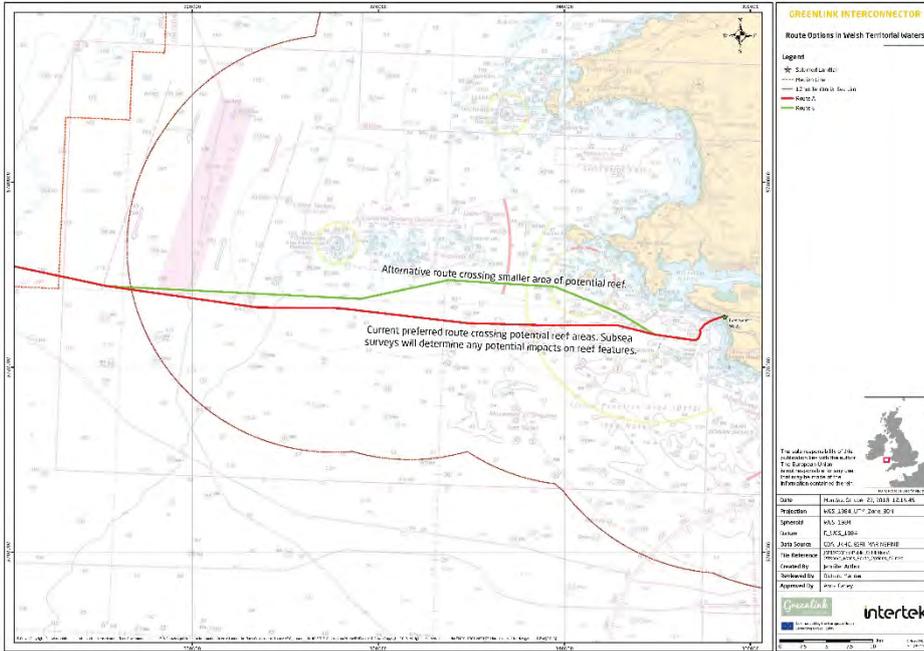


OPTION 1
Following assessment work and consultation it is considered that Converter Station Option 1 is too constrained by existing overhead and underground infrastructure as well as being identified as a key strategic area of land. As a result, we are no longer proposing to consider this site as a potential converter station location. Two sites are currently under consideration and are described further here.

OPTION 2
Converter Station Option 2 is located directly to the south of the Pembroke B Power Station with a Public Right of Way (PROW) ["Green Lane and Wales Coast Path] directly adjacent to the site and woodland screening to the east; this site provides circa 15 hectares in which to locate the converter station. A small supply reservoir is present in the northwest corner of the site and a small waterbody to the south; a small tributary also runs through the northeast corner toward a pond to the northern edge of the screening woodland.

OPTION 3
Converter Station Option 3, on a circa 6.2 hectare site, lies furthest to the south of the three options with a PROW to the southern edge, woodland and a tributary to the west. This location is set back from the main industrial area of the power station and maintains limited natural screening such that landscaping would be a key consideration.

OFFSHORE WALES ROUTE OPTIONS



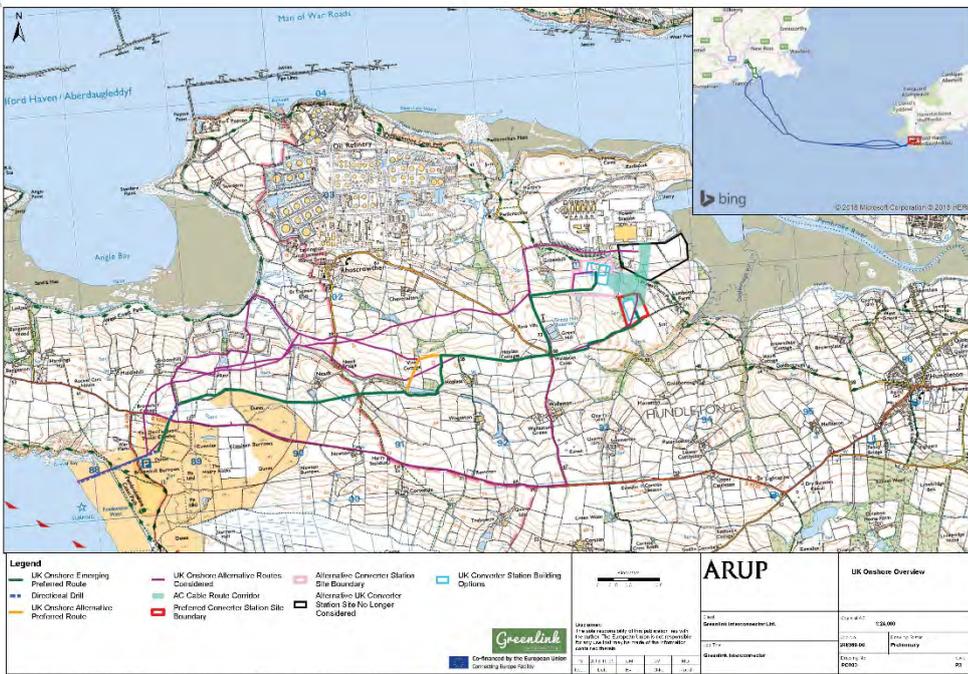
There are currently two subsea routes being assessed off the Welsh coast. The red and green routes under assessment are shown here.

Initial survey data suggests that both routes have environmental constraints and consultation and additional survey work is being undertaken to see if there is an alternative route between the two options.

The final route will be selected following the conclusion of subsea surveys and consultation with stakeholders.

For more information please visit: www.greenlinkinterconnector.eu

GREENLINK IN WALES



A preferred cable route and converter station site have been identified following consultation with stakeholders and analysis of the results of ongoing environmental and technical work. The preferred cable route and converter station site are shown here along with alternatives still under consideration.

For more information please visit: www.greenlinkinterconnector.eu

GREENLINK COMPONENTS

Greenlink
INTERCONNECTOR

The key components of the scheme are:

- **Two converter stations** - one near the Great Island Substation in County Wexford (Ireland) and one near the Pembroke Substation in Pembrokeshire (Wales)
- **Two subsea HVDC cables and a fibre optic cable** - the onshore cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

What is an HVDC cable?

- High Voltage Direct Current (HVDC) cables allow for efficient transportation of electricity over large distances and in particular for subsea cables.
- HVDC cables have lower electricity losses than comparable AC cables.
- HVDC cables are suitable for undergrounding both onshore and offshore. There will be no overground cables between the two converter stations.
- One of the benefits of HVDC cables is the relatively small footprint required to install them underground onshore.



IMAGE: PRYSMIAN

What is a converter station?

A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa. DC electricity is used for the transmission of electricity over long distances between two converter stations and AC electricity is used within the national transmission and distribution networks.



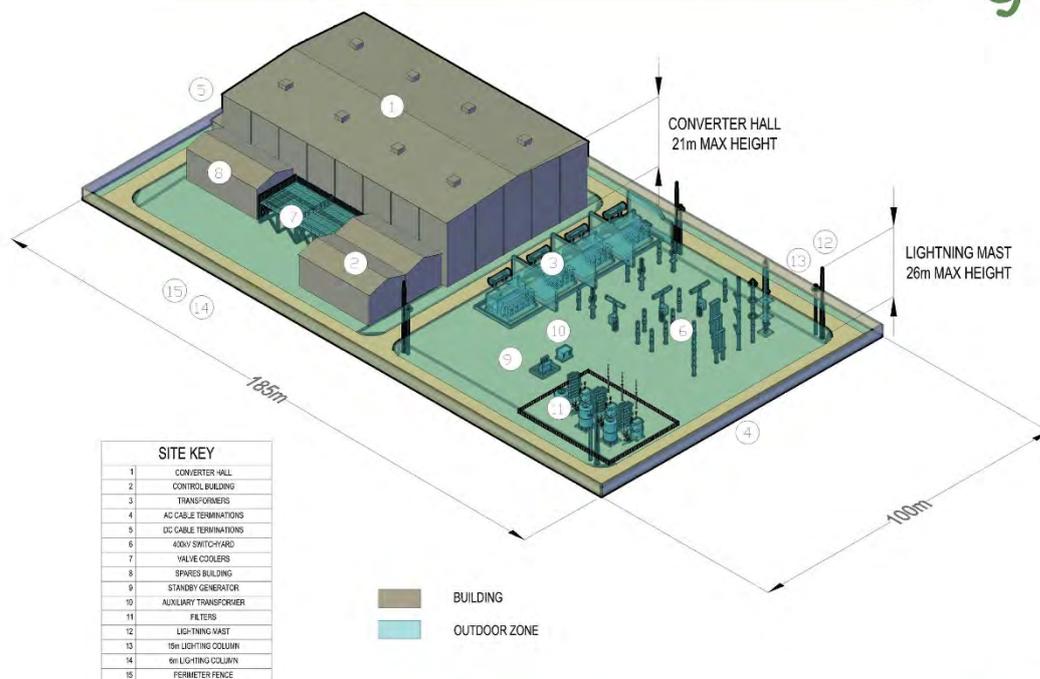
What is a fibre optic cable?

A fibre optic cable is installed to provide communication between the converter stations for system monitoring and safety purposes.

For more information please visit: www.greenlinkinterconnector.eu

INDICATIVE CONVERTER STATION

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For more information please visit: www.greenlinkinterconnector.eu

CONSULTATION

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Public consultation is a core part of the development process and ensures that communities in the vicinity of a new proposal have timely and transparent access to information and can engage with developers to influence the final proposal coming forward. We would like to hear what your thoughts and views are on this proposal.

The Greenlink project team wants to ensure that the local community is consulted and involved throughout the development process of the interconnector project.

During the development process we will be looking to fully engage with local residents, councillors, businesses and members of the local community to discuss the proposal and any potential impacts and to obtain feedback on key issues.

We intend to make sure the local community can see that its views have been fully considered and incorporated within the final proposal.

This public exhibition is to allow local residents and stakeholders to view our current plans, hear about project progress, share their views with us, meet the project team and ask questions. We would welcome any feedback that you have now or in the future.

Additional events will be held in due course as the project progresses.



Contact details

If you would like the Greenlink team to keep you directly updated on project news and future consultation events, please leave us your name and contact details on the comment sheet provided.



For more information please visit: www.greenlinkinterconnector.eu

LOCAL SUPPLY CHAIN

Greenlink
INTERCONNECTOR

Greenlink is committed to maximising the use of locally-based contractors and personnel during the construction and operational phases of the project.

Construction work on Greenlink is expected to lead to significant expenditure in both Ireland and Wales. A significant amount of work is due to take place at the landfall, cable and converter station sites and will require skills and experience available from contractors found in the local area.

The types of services that could be locally sourced include:

- Transportation - equipment and personnel
- Materials, e.g. supplying and pouring concrete
- Electrical connection
- Hospitality and catering for civil engineering activities and earthworks.
- Office and cleaning supplies
- Site security
- Site services, e.g. portacabins and porta-loos
- Fencing
- Waste disposal



Your Views

Do you know of a local business that could benefit from the Greenlink interconnector project?

Let us know if you want to be added to our list of local suppliers!



For more information please visit: www.greenlinkinterconnector.eu

SITE ASSESSMENT - OVERVIEW

Greenlink
INTERCONNECTOR

As part of the development process, a series of environmental and technical assessment studies are being carried out to establish the viability of all the proposed sites and cable routes and to consider any potential impacts and opportunities arising from the development.

Onshore studies include assessments on:

- Biodiversity
- Historic environment
- Landscape & visual impact
- Flooding & hydrology
- Geology & hydrogeology
- Noise & vibration
- Traffic & transport
- Electromagnetic fields (EMFs)
- Agricultural land
- Socio-economics & human health
- Air quality & climate change
- Cumulative & transboundary effects

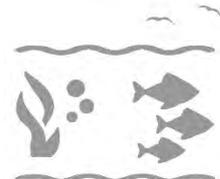
Offshore studies include assessments on:

- Geophysical & geotechnical surveys
- Marine biodiversity (benthic/seabed environment, fish and shellfish, marine birds, marine mammals and reptiles etc)
- Protected designations
- Commercial fisheries
- Shipping & navigation
- Aviation & military
- Marine archaeology & UXOs

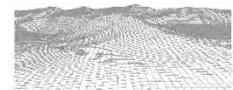
Further information on the nature of these assessments is available within the project Environmental Scoping documents.



Noise & vibration



Marine biodiversity



Landscape & visual impact

For more information please visit: www.greenlinkinterconnector.eu

LANDSCAPE & VISUAL IMPACT

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INTERCONNECTOR

Landscape

This assessment relates to changes in the physical landscape, brought about by Greenlink, which may alter its character and how this is experienced.

Visual

Visual impact assessment relates to changes in the composition of views as a result of changes to the landscape, how these are perceived and the effects on visual amenity.

We will produce visualisations of the converter stations from viewpoints to be agreed with Pembrokeshire County Council. Viewpoints will be selected to represent the character of the area and particularly important landscape and heritage sites. Proposed locations can be seen on the 'viewpoint locations' board.

Impacts and mitigation

Converter station



A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonics filters, lightning towers, ancillary plant and a control building.

Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. However, the layout of the converter station and final dimensions will depend on the local terrain, physical constraints, the results of environmental surveys, consultations and the supplier's technical requirements.

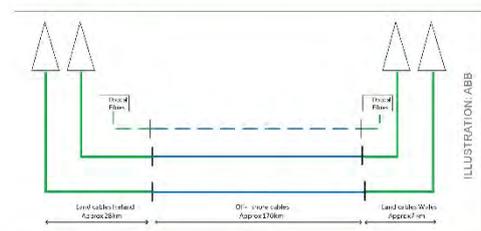
The landscape and visual impact of this will be carefully considered and suitable mitigation, such as landscaping, building finishes, among others, will be proposed.

Cable route

There is the potential for impact from the cable route from vegetation clearance during construction, particularly where the cable route diverges from the road network.

Landscape and visual impacts during cable installation are predicted to be minor and not significant due to the temporary and reversible nature of the change (vegetation clearance) which can be adequately mitigated through replanting.

Following installation and restoration there are not predicted to be any residual landscape and visual effects from the cable route.



Your views ... Do you have any suggestions for viewpoints to be assessed?
What sort of landscaping planting would you like to see in and around the converter station?

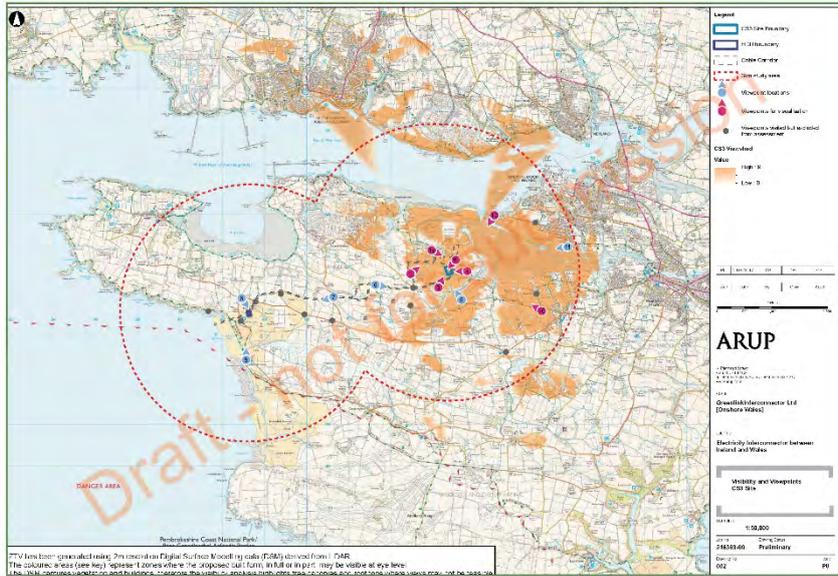


PHOTO: www.siemens.com/press

For more information please visit: www.greenlinkinterconnector.eu

VIEWPOINT LOCATIONS

Greenlink
INTERCONNECTOR



“

Your views

Do you have any other suggestions for a viewpoint location?

”

For more information please visit: www.greenlinkinterconnector.eu

TRAFFIC & TRANSPORT

Greenlink
INTERCONNECTOR



The traffic assessment will address the traffic impacts on the road network from the construction and operation of the Greenlink project. The assessment will include the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce will also be addressed.

A Transport Assessment (TA) or Transport Statement (TS) will be produced in accordance with best practice. The methodology for the TA or TS will be agreed with Pembrokeshire County Council. It will include a review of the existing traffic patterns and an estimation of the traffic volumes which will be generated by the construction of the onshore cable, the landfall site and the converter station. The traffic generated by the construction workforce and by the transport of materials and equipment will also be predicted.

The potential disruption to the road network during the installation of the cables and the availability of alternative routes will be assessed. The traffic distribution pattern on the local road network during construction will be examined and impacts determined.

We will work hard to limit the impact of traffic and transport on local residents and businesses as much as possible and recommendations will be made to mitigate any potential traffic impacts on the road network.

Potential impacts and mitigation

There is potential for traffic impact from Greenlink during the construction phase which will temporarily give rise to additional traffic on the road network.

Installation of the cables may require partial or full road closures and traffic may have to use alternative routes. Where the cable route diverges from the road, the impacts will be reduced.

Once the Greenlink project is in operation, the potential for a traffic impact is minimal. The level of operations and maintenance workforce will be low, so that the impact on any particular road will be insignificant.



Traffic Management Plan (TMP)

As part of the planning application process, an outline Traffic Management Plan (TMP) will be put together that will outline measures for managing and mitigating the construction traffic caused by Greenlink.

Greenlink will consult the local community on a draft TMP to ensure that all considerations of local amenity have been incorporated and that members of the local communities are satisfied with the mitigation measures being proposed.

“

Your views

Do you have any specific concerns? Are there local organisations (businesses, schools etc) that we need to involve in the Traffic Management Plan?

”

For more information please visit: www.greenlinkinterconnector.eu

TRANSPORT ROUTES

Greenlink
INTERCONNECTOR



“
Your views
Do you have any issues you would like us to consider along the access routes?
”

For more information please visit: www.greenlinkinterconnector.eu

NOISE & VIBRATION

Greenlink
INTERCONNECTOR

This assessment will address potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The proposed underground cable routes pass through predominantly rural areas which are likely to experience low ambient existing noise levels. The converter station locations are also located in a rural area but are all adjacent to an existing substation with its associated operating noise levels.

Noise surveys and assessment

- The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors will be determined via noise surveys.
- Noise-sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship etc) and public open spaces (including public footpaths).
- A study area of 300m around the cable route corridor and converter station locations will be considered for potential construction noise impacts and an area of 50m will be considered for potential construction vibration impacts.
- For operational noise, an assessment will be undertaken at sensitive receptors within 300m of the converter station.

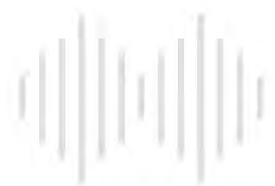
Impacts and mitigation

The construction of the converter station has the potential to give rise to temporary noise and vibration impacts. However, given the distance between the converter station locations and sensitive receptors it is likely that any impact will be low.

The construction of the cable route has the potential to give rise to temporary noise and vibration impacts in isolated locations along the route, particularly where directional drilling is required at watercourses and road crossings.

There will be noise from the electrical and mechanical plant during the operation of the converter station, most of which will be located indoors in the converter hall.

“
Your views
Do you have concerns regarding noise and vibration you wish to be assessed?
”



For more information please visit: www.greenlinkinterconnector.eu

BIODIVERSITY



Surveys will be carried out and the data assessed to ensure that the final onshore elements of the proposal are designed sympathetically to the local environment and wildlife and where possible enhancement measures will be employed.

Studies cover the landfall site, the preferred cable route and the possible converter station locations.

As well as birds, wildlife to be considered by these assessments also include badgers, bats, otters, water voles, reptiles, great crested newts and dormice. Consideration is also being given to local vegetation, including hedgerows, trees and important habitats.

The surveys will be used to avoid, reduce and offset any impacts on biodiversity through sensitive design and mitigation measures as required.



Your views

Do you know of any local environmental groups that Greenlink should consult?

Are there specific issues you feel should be assessed that aren't currently being assessed?



For more information please visit: www.greenlinkinterconnector.eu

PLANNING



	Wales	Ireland
Converter station	Major Development - Pembrokeshire County Council	Strategic Infrastructure Development - An Bord Pleanála Authorisation to construct - Commission for the Regulation of Utilities
Onshore cable route	Major Development - Pembrokeshire County Council - Pembrokeshire Coast National Park Authority	Strategic Infrastructure Development - An Bord Pleanála Consent to lay electricity lines across lands - Commission for the Regulation of Utilities Consent to lay electricity lines under the public road - Commission for the Regulation of Utilities
Marine cable	Marine Licence - Natural Resources Wales Marine Works Licence - Milford Haven Port Authority	Foreshore Licence - Department of Housing, Planning and Local Government (Foreshore Unit)

IMPORTANT PLANNING UPDATE:

ENVIRONMENTAL IMPACT ASSESSMENT

Since the previous round of public consultations Greenlink Interconnector Limited has decided to undertake a voluntary Environmental Impact Assessment (EIA) in support of the Greenlink project. This will result in the application documents facing an increased level of scrutiny from stakeholders. While it is recognised that Greenlink does not require an EIA, we have decided to undertake a voluntary EIA in recognition of the length of the permitting process and the evolving interpretation of the EIA regulations within Ireland. As a result of this decision the onshore cable route in Wales will now seek planning permission rather than being developed as permitted development.

For more information please visit: www.greenlinkinterconnector.eu

HISTORIC ENVIRONMENT

Greenlink
INTERCONNECTOR



The potential effects of Greenlink on local archaeology and cultural heritage are being assessed by identifying, predicting and evaluating the significance of potential effects on designated and non-designated heritage assets.

To mitigate any potential impacts we will consider the predicted impacts of the proposed scheme and will aim to avoid adverse effects. Wherever possible, mitigation will be designed to deliver benefits, such as maintaining the visual setting of historic assets. We will aim to avoid undisturbed archaeological remains and preserve them in situ. Where this is not possible, preservation by record will be proposed as mitigation.

The geophysical surveys are being undertaken to identify buried historic assets. The areas to be surveyed are shown in the adjacent plan.

For more information please visit: www.greenlinkinterconnector.eu

PROJECT TIMELINE

Greenlink
INTERCONNECTOR

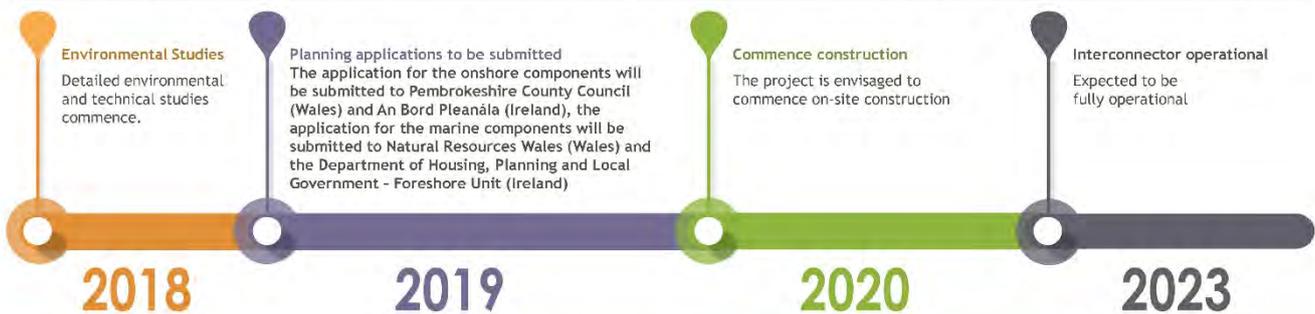
A large infrastructure project such as Greenlink takes several years from development to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have to be identified and fully assessed to ensure that they are considered within the final design of an infrastructure project. Detailed environmental and technical assessment surveys commenced in 2018. This follows the completion of desk-based assessments and consultation with statutory consultees.

Once a detailed proposal and design have been put together, permits and licences will need to be obtained from: Pembrokeshire County Council, Pembrokeshire Coast National Park, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government - Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will need to be constructed, which could take around 36 months from start to finish.

The project is envisaged to commence on-site construction in 2020 and be fully operational in 2023



For more information please visit: www.greenlinkinterconnector.eu

SOCIO-ECONOMICS

Greenlink
INTERCONNECTOR

This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects to the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy.

Local tourism

The Wales Coast Path, incorporating the Pembrokeshire Coast Path, runs along the cliff top within the Pembrokeshire Coast National Park. The cable route does not cross the Wales Coast Path; however, the Wales Coast Path will need to be considered in relation to the proposed converter station.

Freshwater West is a popular beach with water sports enthusiasts, local fishermen and nearby tourist facilities.

Several undesignated footpaths are also within the study area. Further consultation with the Local Planning Authority should clarify the status of paths and any constraints during construction.



Potential impacts

Temporary impacts may be incurred on the Wales Coast Path; similarly, temporary disruption may be felt depending on the requirement to install cables within the highway.

Direct and indirect employment will be created for both the construction and operational phase.

The construction of the cables and converter station have the potential to have a negative impact on residential amenity in the immediate vicinity of the construction activities. Once the cables and converter station are operational, the potential for negative impact on residential amenity is minimal.



“ Your views

Please let us know of any local tourism business or group we need to consider and involve in project discussions.

Are there any particular local events that attract tourists that Greenlink needs to be aware of?

”



Jobs

Jobs and knock-on economic benefits during construction

For more information please visit: www.greenlinkinterconnector.eu

MARINE SURVEYS

Greenlink
INTERCONNECTOR

The proposed marine cable will run from Freshwater West, Pembrokeshire, Wales to the Hook Head Peninsula in County Wexford, Ireland.

Technical viability

Marine surveys are currently being undertaken and include geophysical and geotechnical surveys.

Geophysical

The geophysical survey will map the seabed and sub-surface geology along the proposed route in order to be able to optimise cable routing within the survey corridor and to enable assessment of cable target burial depth along the route.

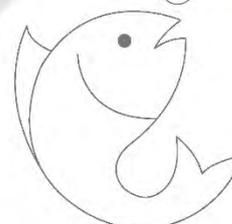
It will also provide the geophysical data from which a marine archaeological assessment can be undertaken as part of the consenting process.

Geotechnical

The purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This is being done using a number of techniques, including drilling boreholes.

Environmental impacts

The marine survey aims to map the distribution and extent of marine habitats within the proposed cable corridor. Data from this survey is being used to inform the Environmental Impact Assessment.



For more information please visit: www.greenlinkinterconnector.eu

MARINE ENVIRONMENTAL ASSESSMENTS



The aims of the Environmental Impact Assessment will be to identify potential impacts, including:

- Penetration and/or disturbance of the substrate below the surface of the seabed
- Visual disturbance
- Underwater noise changes
- Siltation rate changes
- Hydrological changes
- Physical loss (permanent change)
- Electromagnetic changes
- Possible in-combination effects

Topics covered by the Environmental Impact Assessment will include:

- Protected sites
- Benthic ecology
- Fish and shellfish
- Marine birds
- Marine mammals and reptiles
- Marine archaeology and UXOs
- Coastal processes
- Fisheries
- Shipping and navigation
- Recreation
- Cumulative effects



Your views

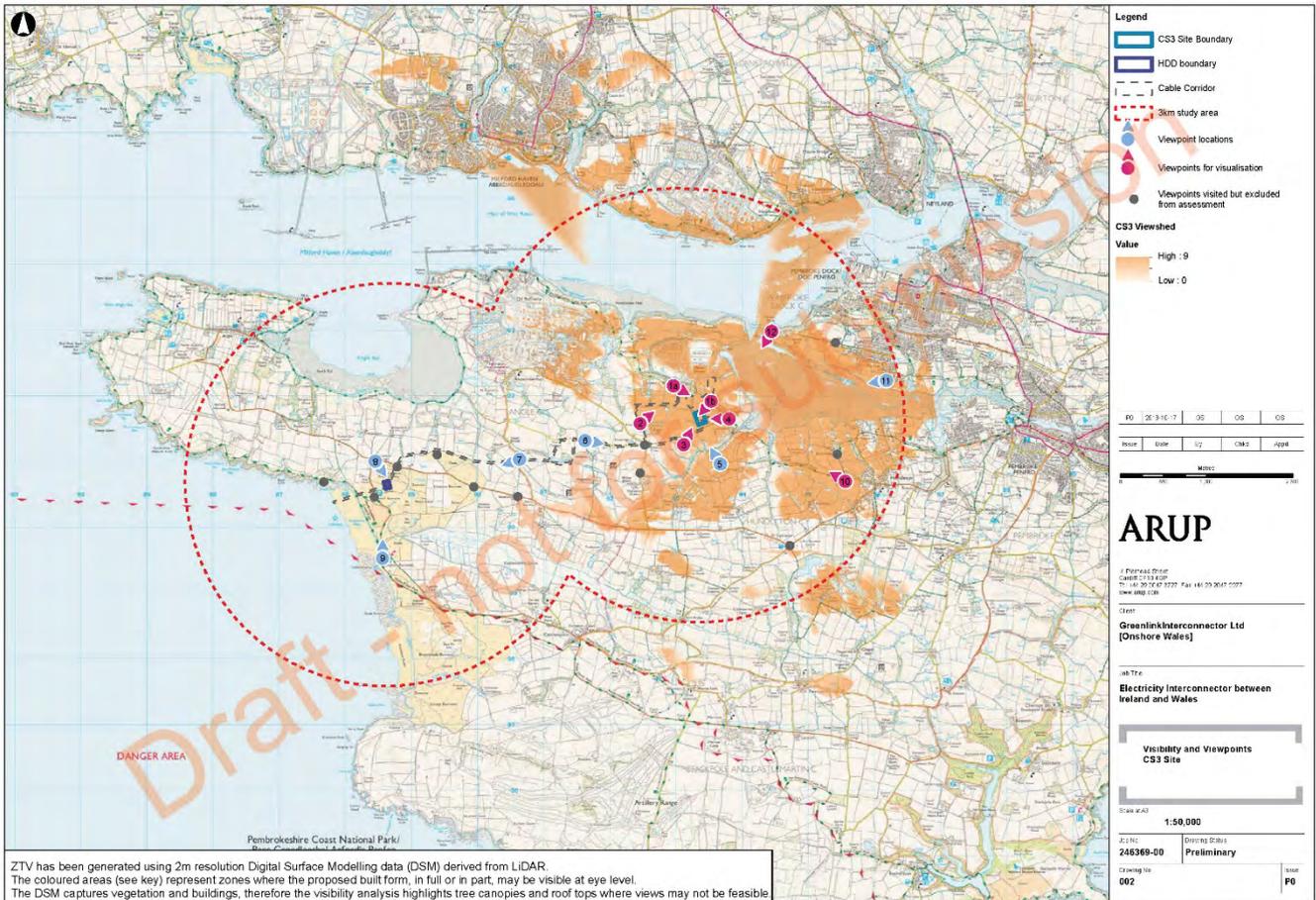
Greenlink has appointed a Fisheries Liaison officer to liaise with local fishing interests. Do you want our Fisheries Liaison officer to contact you?



Mitigation - Once potential impacts have been established, mitigation measures will be proposed to ensure that impacts are minimised or removed.



For more information please visit: www.greenlinkinterconnector.eu





PUBLIC EXHIBITIONS

Greenlink is a proposed electricity interconnector that will link the GB electricity transmission system in Pembrokeshire with that of Ireland via underground and subsea cables.

The Greenlink team would like to discuss the progress of the design and feasibility work and listen to your views.

It is proposed that the subsea cables will come onshore underground at Freshwater West (under the existing dunes and beach), carry on underground in the direction of Pembroke Substation, where they will connect to a new purpose-built converter station located nearby.

Greenlink brings significant benefits on both sides of the Irish Sea for employment, energy security and the integration of low carbon energy sources.

We are committed to working with local residents and stakeholders to design and develop a project that is of the highest standard. To that end we would welcome your input throughout the development process.

When & Where

**3RD DECEMBER
2PM TO 6:30PM**

Pembroke Dock
Pater Hall
Dimond Street
Pembroke Dock
SA72 6DD

**4TH DECEMBER
2PM TO 8PM**

Angle Village Hall
Angle
Pembroke
SA71 5AS

**5TH DECEMBER
2PM TO 8PM**

Hundleton
Sports Pavillion
Hundleton
Pembroke

To find out more about the proposal, and to share your views, please come along to one of our public exhibitions.

Further information is also available on the project website: www.greenlinkinterconnector.eu



Annex 8

Public Exhibition – June 2019

WHY GREENLINK?

Greenlink
INTERCONNECTOR

Greenlink is a new interconnector between Ireland and Wales with a nominal capacity of 500MW

Great Britain is currently connected to the island of Ireland by two electricity interconnectors, which provide a means of transferring electricity between the two countries - the East West Interconnector (EWIC), which connects County Dublin to North Wales, and the Moyle interconnector between County Antrim, Northern Ireland and Ayrshire, Scotland.

However, the challenges faced by the British, Irish and wider European energy systems are driving the need for additional interconnectors between Great Britain and Ireland and within Europe as a whole.

This will allow electricity to flow more easily between where it is generated and where it is needed, improving the security and reliability of our energy supplies and supporting the integration of greener, low carbon energy sources in an affordable way.

There is a strong need and significant support within Europe for additional interconnection.

The 'Energy Union' is a strategy launched by the European Commission in 2015 with the aim of ensuring that European countries have access to secure, affordable and climate-friendly energy.

Greenlink has been given the status of a European Union Project of Common Interest (PCI), making it one of Europe's most important energy infrastructure projects.



Supporting
Renewable
Energy



Improving
Energy
Security



Fighting
Climate
Change



Benefiting
Consumers

supporting the integration of greener, low carbon energy sources in an affordable way

For more information please visit: www.greenlink.ie

BIODIVERSITY

Greenlink
INTERCONNECTOR

Surveys have been carried out and the data assessed to ensure that the final onshore elements of the proposal are designed sympathetically to the local environment and wildlife and where possible enhancement measures employed.

Studies cover the landfall site, the preferred cable route and the possible converter station locations.

As well as birds, wildlife considered by these assessments also include badgers, bats, otters, water voles, reptiles, great crested newts and dormice. Consideration has also been given to local vegetation, including hedgerows, trees and important habitats.

The surveys are being used to avoid, reduce and offset any impacts on biodiversity through sensitive design and mitigation measures as required.



Your views

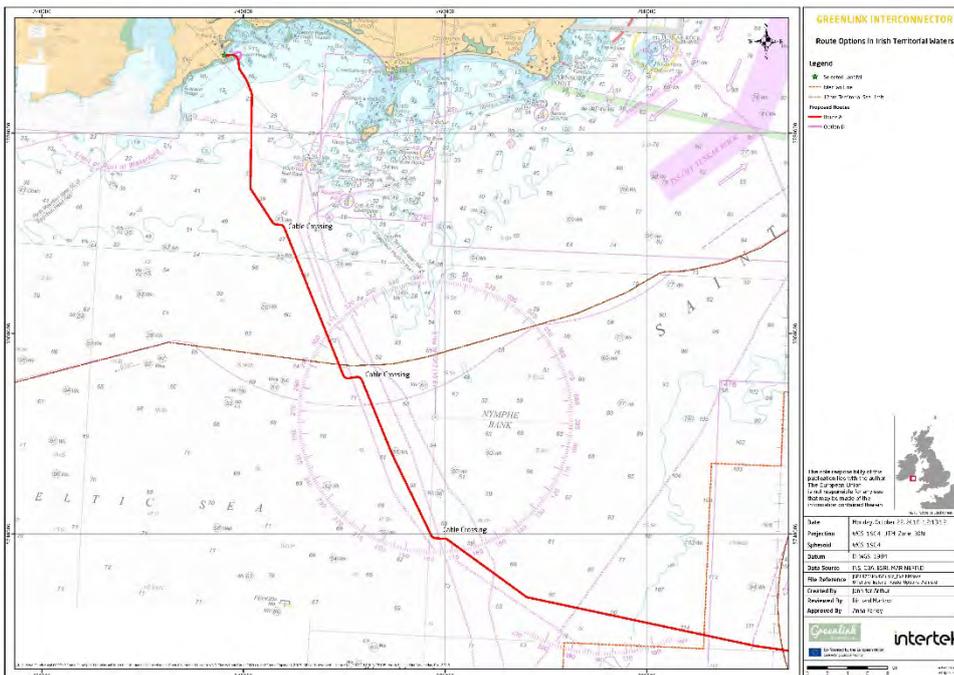
Do you know of any local environmental groups that Greenlink should consult?

Are there specific issues you feel should be assessed that aren't currently being assessed?



For more information please visit: www.greenlink.ie

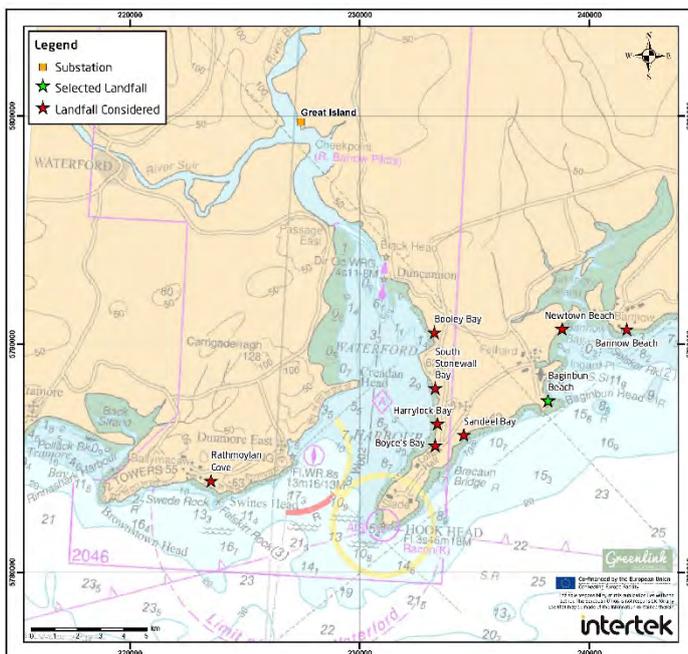
OFFSHORE IRELAND ROUTE OPTIONS



A preferred subsea route has been identified following desk-based assessments supported by the results of early subsea surveys.

For more information please visit: www.greenlink.ie

IRISH LANDFALLS



The landfall at Baginbun Beach was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in this plan.

For more information please visit: www.greenlink.ie

GREENLINK COMPONENTS

Greenlink
INTERCONNECTOR

The key components of the scheme are:

- **Two converter stations** - one near the Great Island Substation in County Wexford (Ireland) and one near the Pembroke Substation in Pembrokeshire (Wales)
- **Two subsea HVDC cables and a fibre optic cable** - the onshore cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

What is an HVDC cable?

- High Voltage Direct Current (HVDC) cables allow for efficient transportation of electricity over large distances and in particular for subsea cables.
- HVDC cables have lower electricity losses than comparable AC cables.
- HVDC cables are suitable for undergrounding both onshore and offshore. There will be no overground cables between the two converter stations.
- One of the benefits of HVDC cables is the relatively small footprint required to install them underground onshore.



IMAGE: PRYSMIAN

What is a converter station?

A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa. DC electricity is used for the transmission of electricity over long distances between two converter stations and AC electricity is used within the national transmission and distribution networks.



What is a fibre optic cable?

A fibre optic cable is installed to provide communication between the converter stations for system monitoring and safety purposes.

For more information please visit: www.greenlink.ie

LOCAL SUPPLY CHAIN

Greenlink
INTERCONNECTOR

Greenlink is committed to maximising the use of locally-based contractors and personnel during the construction and operational phases of the project.

Construction work on Greenlink is expected to lead to significant expenditure in both Ireland and Wales. A significant amount of work is due to take place at the landfall, cable and converter station sites and will require skills and experience available from contractors found in the local area.

The types of services that could be locally sourced include:

- Transportation - equipment and personnel
- Materials, e.g. supplying and pouring concrete
- Electrical connection
- Hospitality and catering for civil engineering activities and earthworks.
- Office and cleaning supplies
- Site security
- Site services, e.g. portacabins and porta-loos
- Fencing
- Waste disposal



“ Your Views

Do you know of a local business that could benefit from the Greenlink interconnector project?

Let us know if you want to be added to our list of local suppliers!



For more information please visit: www.greenlink.ie

SITE ASSESSMENT - OVERVIEW



As part of the development process, a series of environmental and technical assessment studies are being carried out to establish the viability of all the proposed sites and cable routes and to consider any potential impacts and opportunities arising from the development.

Onshore studies include assessments on:

- Biodiversity
- Historic environment
- Landscape & visual impact
- Flooding & hydrology
- Geology & hydrogeology
- Noise & vibration
- Traffic & transport
- Electromagnetic fields (EMFs)
- Agricultural land
- Socio-economics & human health
- Air quality & climate change
- Cumulative & transboundary effects

Offshore studies include assessments on:

- Geophysical & geotechnical surveys
- Marine biodiversity (benthic/seabed environment, fish and shellfish, marine birds, marine mammals and reptiles etc)
- Protected designations
- Commercial fisheries
- Shipping & navigation
- Aviation & military
- Marine archaeology & UXOs

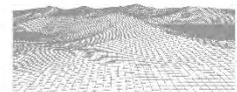
Further information on the nature of these assessments is available within the project Environmental Scoping documents.



Noise & vibration



Marine biodiversity



Landscape & visual impact

For more information please visit: www.greenlink.ie

LANDSCAPE & VISUAL IMPACT



Landscape

This assessment relates to changes in the physical landscape, brought about by Greenlink, which may alter its character and how this is experienced.

Visual

Visual impact assessment relates to changes in the composition of views as a result of changes to the landscape, how these are perceived and the effects on visual amenity.

We will produce visualisations of the converter stations from viewpoints to be agreed with Pembrokeshire County Council. Viewpoints will be selected to represent the character of the area and particularly important landscape and heritage sites. Proposed locations can be seen on the 'viewpoint locations' board.

PHOTO: www.siemens.com/press

Impacts and mitigation

Converter station



A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonics filters, lightning towers, ancillary plant and a control building.

Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. However, the layout of the converter station and final dimensions will depend on the local terrain, physical constraints, the results of environmental surveys, consultations and the supplier's technical requirements.

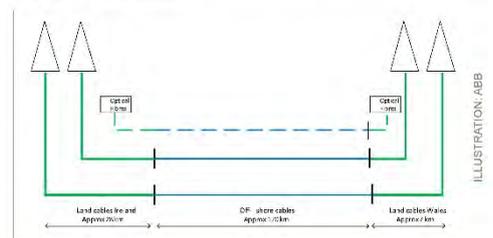
The landscape and visual impact of this will be carefully considered and suitable mitigation, such as landscaping, building finishes, among others, will be proposed.

Cable route

There is the potential for impact from the cable route from vegetation clearance during construction, particularly where the cable route diverges from the road network.

Landscape and visual impacts during cable installation are predicted to be minor and not significant due to the temporary and reversible nature of the change (vegetation clearance) which can be adequately mitigated through replanting.

Following installation and restoration there are not predicted to be any residual landscape and visual effects from the cable route.



“ **Your views** ... Do you have any suggestions for viewpoints to be assessed? What sort of landscaping planting would you like to see in and around the converter station? ”

For more information please visit: www.greenlink.ie

NOISE & VIBRATION

Greenlink
INTERCONNECTOR

This assessment will address potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The proposed underground cable routes pass through predominantly rural areas which are likely to experience low ambient existing noise levels. The converter station locations are also located in a rural area but are all adjacent to an existing substation with its associated operating noise levels.

Noise surveys and assessment

- The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors will be determined via noise surveys.
- Noise-sensitive receptors include residential properties, sensitive commercial and community uses (including educational premises, medical facilities, places of worship etc) and public open spaces (including public footpaths).
- A study area of 300m around the cable route corridor and converter station locations will be considered for potential construction noise impacts and an area of 50m will be considered for potential construction vibration impacts.
- For operational noise, an assessment will be undertaken at sensitive receptors within 300m of the converter station.

Impacts and mitigation

The construction of the converter station has the potential to give rise to temporary noise and vibration impacts. However, given the distance between the converter station locations and sensitive receptors it is likely that any impact will be low.

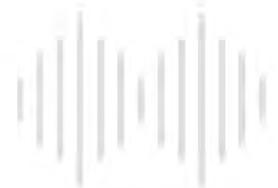
The construction of the cable route has the potential to give rise to temporary noise and vibration impacts in isolated locations along the route, particularly where directional drilling is required at watercourses and road crossings.

There will be noise from the electrical and mechanical plant during the operation of the converter station, most of which will be located indoors in the converter hall.



Your views

Do you have concerns regarding noise and vibration you wish to be assessed?



For more information please visit: www.greenlink.ie

PROJECT TIMELINE

Greenlink
INTERCONNECTOR

A large infrastructure project such as Greenlink takes several years from development to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have to be identified and fully assessed to ensure that they are considered within the final design of an infrastructure project. Detailed environmental and technical assessment surveys commenced in 2018. This follows the completion of desk-based assessments and consultation with statutory consultees.

Once a detailed proposal and design have been put together, permits and licences will need to be obtained from: Pembrokeshire County Council, Pembrokeshire Coast National Park, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government – Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will need to be constructed, which could take around 36 months from start to finish.

The project is envisaged to commence on-site construction in 2020 and be fully operational in 2023



For more information please visit: www.greenlink.ie

SOCIO-ECONOMICS

This study will provide an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects to the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy.

Local tourism

The Wales Coast Path, incorporating the Pembrokeshire Coast Path, runs along the cliff top within the Pembrokeshire Coast National Park. The cable route does not cross the Wales Coast Path; however, the Wales Coast Path will need to be considered in relation to the proposed converter station.

Freshwater West is a popular beach with water sports enthusiasts, local fishermen and nearby tourist facilities.

Several undesignated footpaths are also within the study area. Further consultation with the Local Planning Authority should clarify the status of paths and any constraints during construction.



Potential impacts

Temporary impacts may be incurred on the Wales Coast Path; similarly, temporary disruption may be felt depending on the requirement to install cables within the highway.

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The construction of the cables and converter station have the potential to have a negative impact on residential amenity in the immediate vicinity of the construction activities. Once the cables and converter station are operational, the potential for negative impact on residential amenity is minimal.



Greenlink
INTERCONNECTOR

Your views

Please let us know of any local tourism business or group we need to consider and involve in project discussions.

Are there any particular local events that attract tourists that Greenlink needs to be aware of?



Jobs

Jobs and knock-on economic benefits during construction

For more information please visit: www.greenlink.ie

CONSULTATION



Public consultation is a core part of the development process and ensures that communities in the vicinity of a new proposal have timely and transparent access to information and can engage with developers to influence the final proposal coming forward. We would like to hear what your thoughts and views are on this proposal.

The Greenlink project team wants to ensure that the local community is consulted and involved throughout the development process of the interconnector project.

During the development process we will be looking to fully engage with local residents, councillors, businesses and members of the local community to discuss the proposal and any potential impacts and to obtain feedback on key issues.

We intend to make sure the local community can see that its views have been fully considered and incorporated within the final proposal.

This public exhibition is to allow local residents and stakeholders to view our current plans, hear about project progress, share their views with us, meet the project team and ask questions. We would welcome any feedback that you have now or in the future.

Public exhibitions will be held as the project progresses.



Greenlink
INTERCONNECTOR

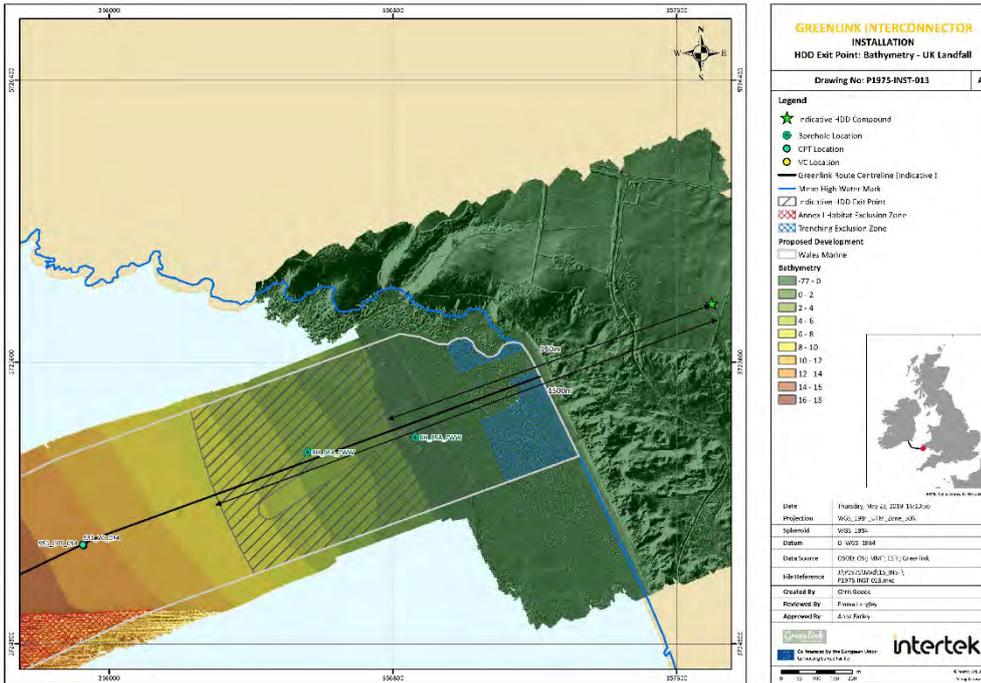
Your Views

We are particularly interested in hearing your views on ways that Greenlink can be designed to provide additional benefits to the local community.



For more information please visit: www.greenlink.ie

INSTALLATION AT FRESHWATER WEST



To avoid impacts on the Broomhill Burrows SSSI dunes and the beach at Freshwater West it is proposed to install the cables using a Horizontal Directional Drill under the dune system and beach and beyond the low water mark.

This is the proposed installation method contained within the Marine Licence Application submitted to Natural Resources Wales.

Once the cables emerge the proposed cable route has been designed to avoid the most sensitive marine habitats.

For more information please visit: www.greenlink.ie

FRESHWATER WEST CABLE INSTALLATION



We are proposing to use a Horizontal Directional Drill (HDD) to install the cables at both Baginbun Beach (Ireland) and Freshwater West (Wales). Using this method of installation will ensure that cables can be installed without any impact on the beaches at both locations and will avoid any impact on the dune system at Freshwater West. The cable will emerge below the low water mark so no work will take place on either beach.

While the construction programme for the full project is anticipated to take around three years, construction work around each landfall would last for approximately 3 months and be scheduled to avoid the most popular periods of use.

Once the cables emerge the proposed cable route has been designed to avoid the most sensitive marine habitats.

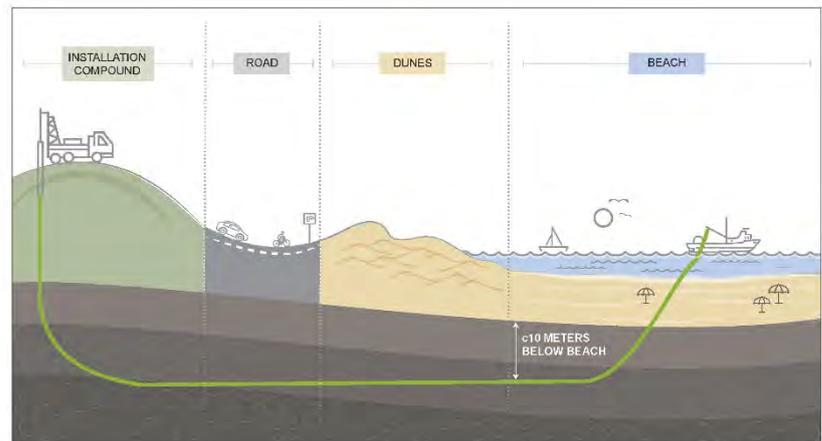


ILLUSTRATION OF HOW AN HDD MIGHT WORK

For more information please visit: www.greenlink.ie

PLANNING

	Wales	Ireland
Converter station	Major Development - Pembrokeshire County Council	Strategic Infrastructure Development - An Bord Pleanála Authorisation to construct - Commission for the Regulation of Utilities
Onshore cable route	Major Development - Pembrokeshire County Council - Pembrokeshire Coast National Park Authority	Strategic Infrastructure Development - An Bord Pleanála Consent to lay electricity lines across lands - Commission for the Regulation of Utilities Consent to lay electricity lines under the public road - Commission for the Regulation of Utilities
Marine cable	Marine Licence - Natural Resources Wales Marine Works Licence - Milford Haven Port Authority	Foreshore Licence - Department of Housing, Planning and Local Government (Foreshore Unit)

IMPORTANT PLANNING UPDATE:

MARINE LICENCE APPLICATION

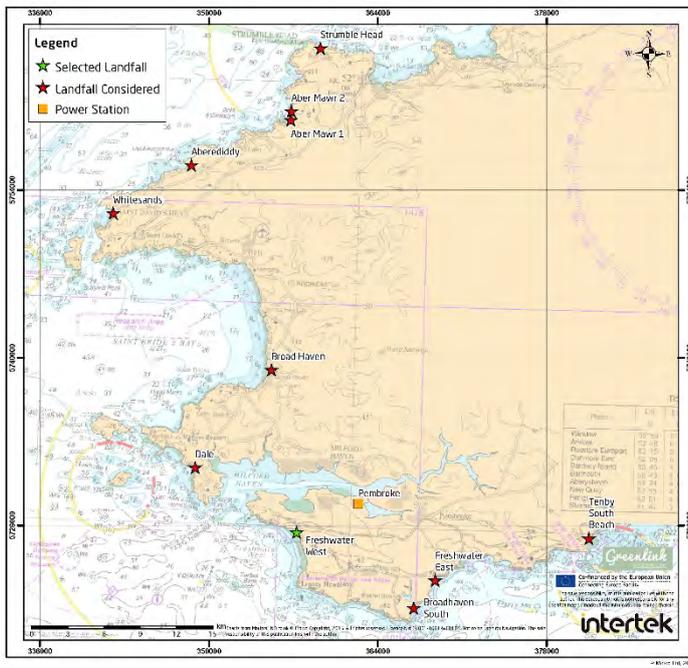
The Marine Licence Application has now been submitted to Natural Resources Wales.

The Application is currently being validated and formal consultation on the application will commence shortly.

Copies of the Non-Technical Summary are available to view at this public exhibition.

For more information please visit: www.greenlink.ie

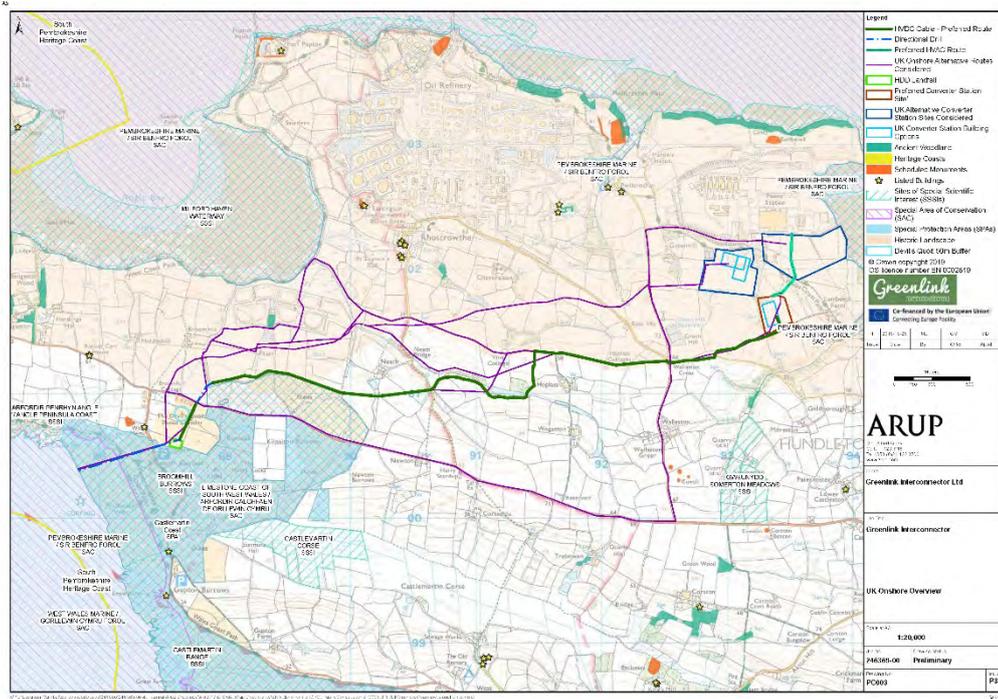
WELSH LANDFALLS



The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in this plan.

For more information please visit: www.greenlink.ie

GREENLINK IN WALES

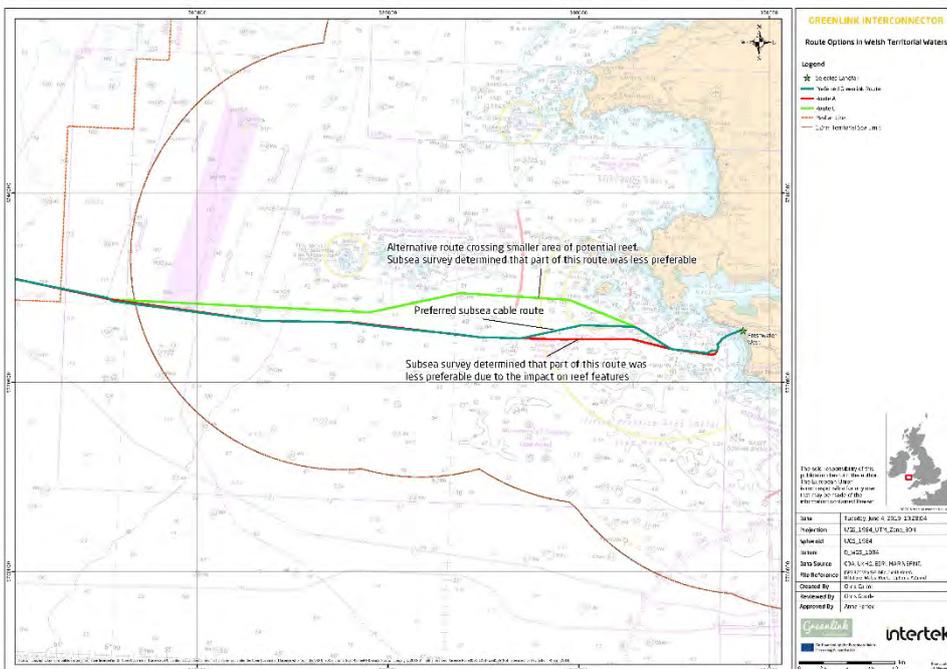


A preferred cable route and converter station site have been selected following consultation with stakeholders and analysis of the results of environmental and technical work.

To minimise environmental impact, it is proposed that the cables between the landfall and the sea will be installed using a Horizontal Directional Drill (HDD) underneath the dunes and beach at Freshwater West.

For more information please visit: www.greenlink.ie

OFFSHORE WALES ROUTE OPTIONS



The final subsea route was selected following the conclusion of subsea surveys and consultation with stakeholders.

Two initial routes were subject to subsea surveys. Following the results of surveys confirming the presence of reef habitats a third route was identified and assessed in partnership with Natural Resources Wales. The third route assessed has been confirmed as the preferred subsea cable route.

For more information please visit: www.greenlink.ie

TRAFFIC & TRANSPORT



The traffic assessment will address the traffic impacts on the road network from the construction and operation of the Greenlink project. The assessment will include the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station. Traffic arising from the construction and operations workforce will also be addressed.

A Transport Assessment (TA) or Transport Statement (TS) will be produced in accordance with best practice. The methodology for the TA or TS will be agreed with Pembrokeshire County Council. It will include a review of the existing traffic patterns and an estimation of the traffic volumes which will be generated by the construction of the onshore cable, the landfall site and the converter station. The traffic generated by the construction workforce and by the transport of materials and equipment will also be predicted.

The potential disruption to the road network during the installation of the cables and the availability of alternative routes will be assessed. The traffic distribution pattern on the local road network during construction will be examined and impacts determined.

We will work hard to limit the impact of traffic and transport on local residents and businesses as much as possible and recommendations will be made to mitigate any potential traffic impacts on the road network.

Potential impacts and mitigation

There is potential for traffic impact from Greenlink during the construction phase which will temporarily give rise to additional traffic on the road network.

Installation of the cables may require partial or full road closures and traffic may have to use alternative routes. Where the cable route diverges from the road, the impacts will be reduced.

Once the Greenlink project is in operation, the potential for a traffic impact is minimal. The level of operations and maintenance workforce will be low, so that the impact on any particular road will be insignificant.



Outline Traffic Management Plan

As part of the planning application process, an outline Traffic Management Plan (TMP) will be put together that will outline measures for managing and mitigating the construction traffic caused by Greenlink.

Greenlink will consult the local community on a draft TMP to ensure that all considerations of local amenity have been incorporated and that members of the local communities are satisfied with the mitigation measures being proposed.

“
Your views
Do you have any specific concerns? Are there local organisations (businesses, schools etc) that we need to involve in the Traffic Management Plan?
”

For more information please visit: www.greenlink.ie

TRAFFIC AND TRANSPORT ROUTES



“
Your views
Do you have any issues you would like us to consider along the access routes?
”

For more information please visit: www.greenlink.ie

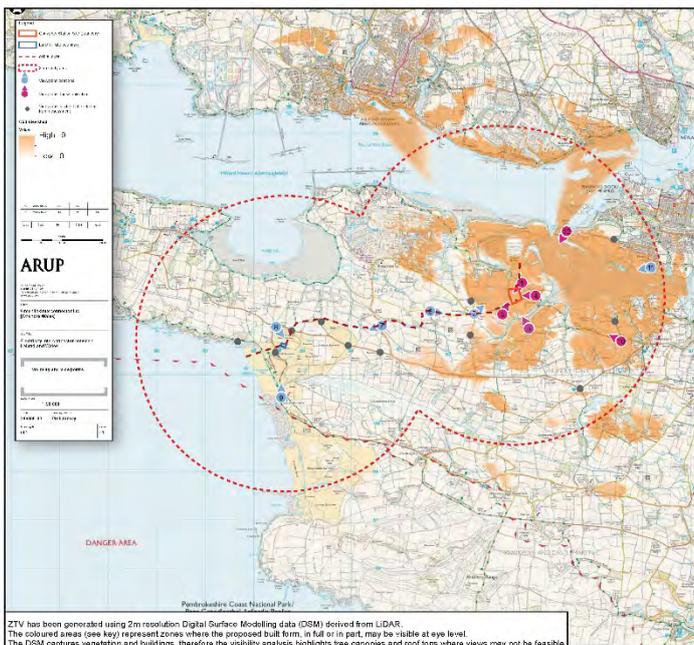
TRAFFIC AND TRANSPORT ROUTES

“
Your views
Do you have any
issues you would
like us to consider
along the access
routes?
”



For more information please visit: www.greenlink.ie

VIEWPOINT LOCATIONS



Please note these visualisations do not include any mitigation. We welcome your feedback on potential landscaping, planting and colour schemes. The selected mitigation will be included within the planning application.

For more information please visit: www.greenlink.ie

WELCOME TO THE EXHIBITION



Welcome

Welcome and thank you for taking the time to come to this public exhibition for the Greenlink Interconnector project (Greenlink).

We have prepared the information on display here today to help you find out more about our work on Greenlink.

Members of the project team are here to answer your questions.

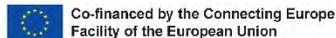
About the developer

Greenlink is being developed by Greenlink Interconnector Limited.

Greenlink Interconnector Limited 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 programs under management in private equity, private real estate, private infrastructure and private debt.

Greenlink Interconnector Limited is bringing private capital to the project and will assume the majority of the project risks.

For more information please visit:
www.greenlink.ie



*The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.

PROJECT BENEFITS



380,000
Potential to power 380,000 homes*



Investment
€400m/£350m of private capital investment for Ireland and Wales



Energy
Supports the growth and integration of low carbon energy



Security
Enhances the security of supply for electricity consumers



Value for Money
Downward pressure on electricity bills



Jobs
Jobs and knock-on economic benefits during construction



Your Views

We are very interested to hear your views, so please feel free to fill in a comments form and drop it in the box provided before you leave.



Regional investment and jobs
Greenlink represents €450m/£350m of private capital investment in Ireland and Wales and will create jobs during construction and operation as well as knock-on economic benefits.

An integrated European grid
Interconnection has a vital role to play in connecting energy generation between countries to provide reliable and affordable power for all. Greenlink will have strategic importance, by doubling the interconnection capacity between Ireland and GB and contribute to each country's interconnection targets.

Security of supply
Greenlink will deliver increased security of supply for electricity consumers, by diversifying energy sources and providing additional import and export capacity in both countries.

Integration of renewable energy
Greenlink improves the integration of renewable technologies in Ireland and GB supporting the growth of the green energy sector, which offers significant economic and environmental benefits to both countries.

Better energy price competition
Greenlink will deliver greater market integration and competition in the provision of electricity, ultimately providing significant benefits to consumers in Ireland, GB and continental Europe.

Benefits for Wales and Pembrokeshire
Greenlink will provide additional transmission network capacity, reinforcing the electricity grid in southern Wales. It will also offer valuable regional investment to Wales and Pembrokeshire, including jobs and knock-on economic benefits during construction.

For more information about opportunities for local businesses, please see our 'Local Supply Chain' board later in this exhibition

*Figure for number of homes is based on typical annual household use of 4,200 kWh (CFR, 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.

WALES



250
jobs in Wales during construction



Jobs
5 permanent Welsh jobs



Grid
Reinforce electricity grid



PUBLIC EXHIBITIONS

Greenlink is a proposed electricity interconnector that will link the GB electricity transmission system in Pembrokeshire with that of Ireland via underground and subsea cables.

The Greenlink team would like to discuss the progress of the design and feasibility work and listen to your views.

It is proposed that the subsea cables will come onshore underground at Freshwater West (under the existing dunes and beach), carry on underground in the direction of Pembroke Substation, where they will connect to a new purpose-built converter station located nearby.

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When & Where

MONDAY 24TH JUNE
2PM TO 8PM

Pembroke Town Hall
Main Street
Pembroke SA71 4JS

TUESDAY 25TH JUNE
2PM TO 8PM

Angle Village Hall
Angle, Pembroke
SA71 5AS

WEDNESDAY 26TH JUNE
2PM TO 8PM

Pater Hall, Dimond Street
Pembroke Dock SA72 6DD

THURSDAY 27TH JUNE
4PM TO 8PM

Hundleton Sports Pavillion
Hundleton, Pembroke

Annex 9

Public Exhibition – December
2019

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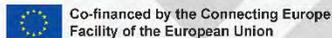
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Co-financed by the Connecting Europe Facility of the European Union

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*Approximate figure, based on value and conversion rate: €1=€0.88, November 2018
**Figure for number of homes is based on typical annual Irish household use of 4,200 kWh (CES, Review of Typical Consumption Figures - Decision Paper 12, March 2017) (CES10142) and estimated total flows from UK to EEA of 1,600,000 MWh/yr

WALES



250
jobs in Wales during construction

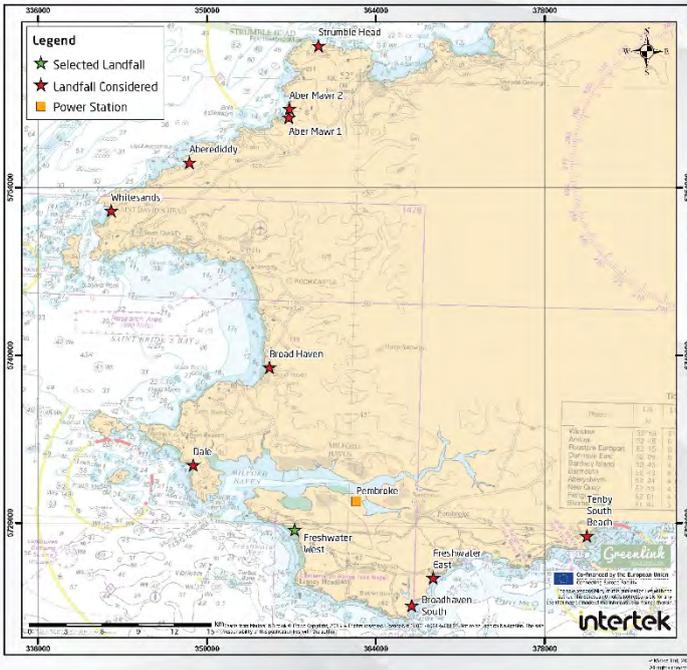


Jobs
5 permanent Welsh jobs



Grid
Reinforce electricity grid

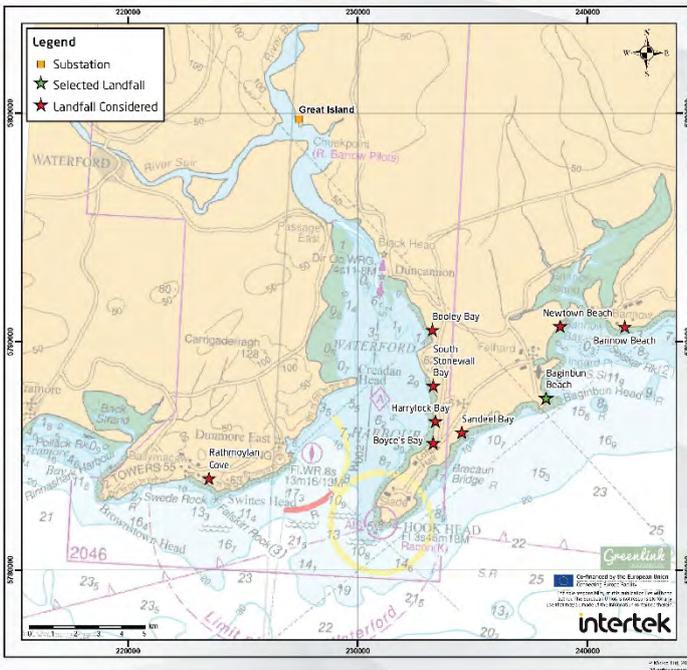
WELSH LANDFALLS



The landfall at Freshwater West was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in this plan.

For more information please visit: www.greenlink.ie

IRISH LANDFALLS



The landfall at Baginbun Beach was selected following a review of potential landfall sites in the region. The landfalls assessed are shown in this plan.

For more information please visit: www.greenlink.ie

The key components of the scheme are:

- **Two converter stations** - one near the Great Island Substation in County Wexford (Ireland) and one near the Pembroke Substation in Pembrokeshire (Wales)
- **Two subsea HVDC cables and a fibre optic cable** - the onshore cables will be buried underground and offshore the cables will be buried in the seabed or laid on the seabed with protection, if burial is not practicable.

What is an HVDC cable?

- High Voltage Direct Current (HVDC) cables allow for efficient transportation of electricity over large distances and in particular for subsea cables.
- HVDC cables have lower electricity losses than comparable AC cables.
- HVDC cables are suitable for undergrounding both onshore and offshore. There will be no overground cables between the two converter stations.
- One of the benefits of HVDC cables is the relatively small footprint required to install them underground onshore.



IMAGE: PRYSMIAN

What is a converter station?

A converter station converts electricity from Alternating Current (AC) to Direct Current (DC) and vice versa. DC electricity is used for the transmission of electricity over long distances between two converter stations and AC electricity is used within the national transmission and distribution networks.



What is a fibre optic cable?

A fibre optic cable is installed to provide communication between the converter stations for system monitoring and safety purposes.

For more information please visit: www.greenlink.ie

LOCAL SUPPLY CHAIN

Greenlink is committed to maximising the use of locally-based contractors and personnel during the construction and operational phases of the project.

Construction work on Greenlink is expected to lead to significant expenditure in both Ireland and Wales. A significant amount of work is due to take place at the landfall, cable and converter station sites and will require skills and experience available from contractors found in the local area.



The types of services that could be locally sourced include:

- Transportation - equipment and personnel
- Materials, e.g. supplying and pouring concrete
- Electrical connection
- Hospitality and catering for civil engineering activities and earthworks.
- Office and cleaning supplies
- Site security
- Site services, e.g. portacabins and portaloos
- Fencing
- Waste disposal

“ Your Views

Do you know of a local business that could benefit from the Greenlink interconnector project?

Let us know if you want to be added to our list of local suppliers!

”



For more information please visit: www.greenlink.ie

SITE ASSESSMENT OVERVIEW

As part of the development process, a series of environmental and technical assessment studies were completed to ensure that the final proposed cable route and converter station site were designed sympathetically to the local environment and potential impacts and opportunities arising from Greenlink identified.

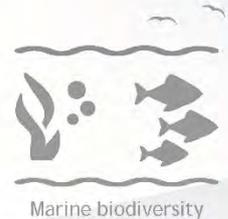
Onshore studies include assessments on:

- Biodiversity
- Historic environment
- Landscape and visual impact
- Flooding and hydrology
- Geology and hydrogeology
- Noise and vibration
- Traffic and transport
- Agricultural land
- Socio-economics and human health
- Air quality and climate change
- Cumulative and transboundary effects

Offshore studies include assessments on:

- Geophysical and geotechnical surveys
- Marine biodiversity (benthic/seabed environment, fish and shellfish, marine birds, marine mammals and reptiles etc)
- Protected designations
- Commercial fisheries
- Shipping and navigation
- Marine archaeology
- Unexploded ordnance

The results of assessments and surveys are presented in the Greenlink planning applications.



For more information please visit: www.greenlink.ie

LANDSCAPE & VISUAL IMPACT

Landscape

This assessment relates to changes in the physical landscape, brought about by Greenlink, which may alter its character and how this is experienced.

Visual

Visual impact assessment relates to changes in the composition of views as a result of changes to the landscape, how these are perceived and the effects on visual amenity.

We have produced visualisations of the converter stations from viewpoint locations agreed with Pembrokeshire County Council. The viewpoints selected represent the character of the area and particularly important landscape and heritage sites. Viewpoint locations are available to view at this public exhibition.

Impacts and mitigation

Converter station

A converter station consists of various components. These include a converter hall, converter transformers, AC switchgear and busbars, harmonics filters, lightning towers, ancillary plant and a control building.

Typically the tallest components are the lightning towers at circa 26 metres high and the converter hall, which could be up to 21 metres high at its apex. However, the layout of the converter station and final dimensions will be finalised with the input of the supplier selected within the ongoing tender process. The design will consider the local terrain, physical constraints, the results of environmental surveys, consultations and commitments made within the planning application documents.

The landscape and visual impact of the proposal has been carefully considered within the planning application and suitable mitigation, such as landscaping have been proposed.

Cable route

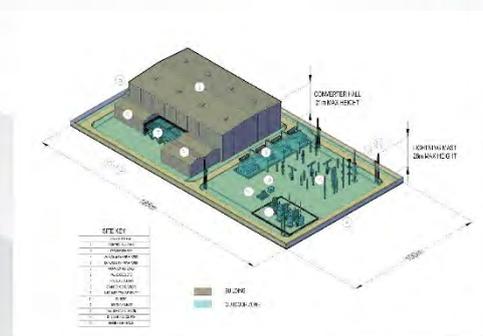
There is the potential for visual impact from the cable route as a result of vegetation clearance during construction, particularly where the cable route diverges from the road network.

However, landscape and visual impacts during cable installation are predicted to be minor and not significant due to the temporary and reversible nature of the change (vegetation clearance) which can be adequately mitigated through replanting.

The draft Landscape and Visual Impact Assessment chapter is available to view at this public exhibition

Your views...

What sort of landscaping planting would you like to see in and around the converter station?



For more information please visit: www.greenlink.ie

This assessment addresses potential noise and vibration impacts from the construction and operational phases of the project, and specifically construction noise, construction vibration and operational noise from the converter station.

The proposed development is located in predominantly rural areas which are likely to experience low ambient existing noise levels. The project aims to avoid a rise in background noise levels at residential receptors once operational.

Noise surveys and assessment

- The baseline conditions (i.e. existing background noise levels) at noise-sensitive receptors were determined via noise surveys.
- Sensitive receptors around the cable route corridor and converter station site were considered for potential construction noise impacts and an area of 50m was considered for potential construction vibration impacts.
- For operational noise, an assessment was undertaken at sensitive receptors within the vicinity of the converter station.

Impacts and mitigation

- The construction of the converter station has the potential to give rise to temporary noise and vibration impacts. However, given the distance between the converter station locations and sensitive receptors it is likely that any impact will be low.
- The construction of the cable route has the potential to give rise to temporary noise and vibration impacts in isolated locations along the route, particularly where directional drilling is required at watercourses and road crossings.



Your views

Do you have concerns regarding noise and vibration you wish to be assessed?



The draft Noise and Vibration chapter is available to view at this public exhibition.

For more information please visit: www.greenlink.ie

PROJECT TIMELINE

A large infrastructure project such as Greenlink takes several years from development to construction, including technical design, obtaining the relevant permits and consultation with a variety of stakeholders.

Technical and environmental constraints have been identified and fully assessed to ensure that they are considered within the final design. Detailed environmental and technical assessment surveys commenced in 2018 and were completed in 2019. This followed the completion of desk-based assessments and consultation with statutory consultees.

Permits and licences will need to be obtained from: Pembrokeshire County Council, Pembrokeshire Coast National Park, Natural Resources Wales (NRW) and Milford Haven Port Authority, in Wales; and An Bord Pleanála and the Department of Housing, Planning and Local Government - Foreshore Unit and the Commission for the Regulation of Utilities, in Ireland.

Once the appropriate permits and licences have been obtained, the scheme will need to be constructed, which could take around 36 months from start to finish.

The project is expected to commence on-site construction in 2020 and be fully operational in 2023



For more information please visit: www.greenlink.ie

SOCIO-ECONOMICS

This study provides an overview of the socio-economic conditions in the area of the proposed development and an assessment of potential effects to the population and human health derived from the implementation of the project. This will encompass consideration of population and demographic data, employment data and the volume and value of tourism to the local economy.



Local tourism

The Wales Coast Path, incorporating the Pembrokeshire Coast Path, runs along the cliff top within the Pembrokeshire Coast National Park.

Freshwater West is a popular beach with water sports enthusiasts, local fishermen and nearby tourist facilities. Several undesignated footpaths are also within the study area.

Potential impacts

Temporary impacts may be incurred on the Wales Coast Path and temporary diversions will be put in place if required; similarly, temporary disruption may be felt depending on the requirement to install cables within the highway but residential access will remain open.

Direct and indirect employment will be created for both the construction and operational phase.

The construction of the cables and converter station have the potential to have a temporary negative impact on residential amenity in the immediate vicinity of the construction activities.

The draft Socio-Economic chapter is available to view at this public exhibition.



“ Your views

Please let us know of any local tourism business or group we need to consider and involve in project discussions.

Are there any particular local events that attract tourists that Greenlink needs to be aware of?



Jobs

Jobs and knock-on economic benefits during construction

For more information please visit: www.greenlink.ie

CONSULTATION



Public consultation is a core part of the development process and ensures that communities in the vicinity of a new proposal have timely and transparent access to information and can engage with developers to influence the final proposal coming forward. We would like to hear what your thoughts and views are on this proposal.

The Greenlink project team wants to ensure that the local community is consulted and involved throughout the development process of the interconnector project.

During the development process we have worked to fully engage with local residents, councillors, businesses and members of the local community to discuss the proposal and any potential impacts and to obtain feedback on key issues.

We intend to make sure the local community can see that its views have been fully considered and incorporated within the final proposal.

This public exhibition is to allow local residents and stakeholders to view our current plans, hear about project progress, share their views with us, meet the project team and ask questions. We would welcome any feedback that you have now or in the future



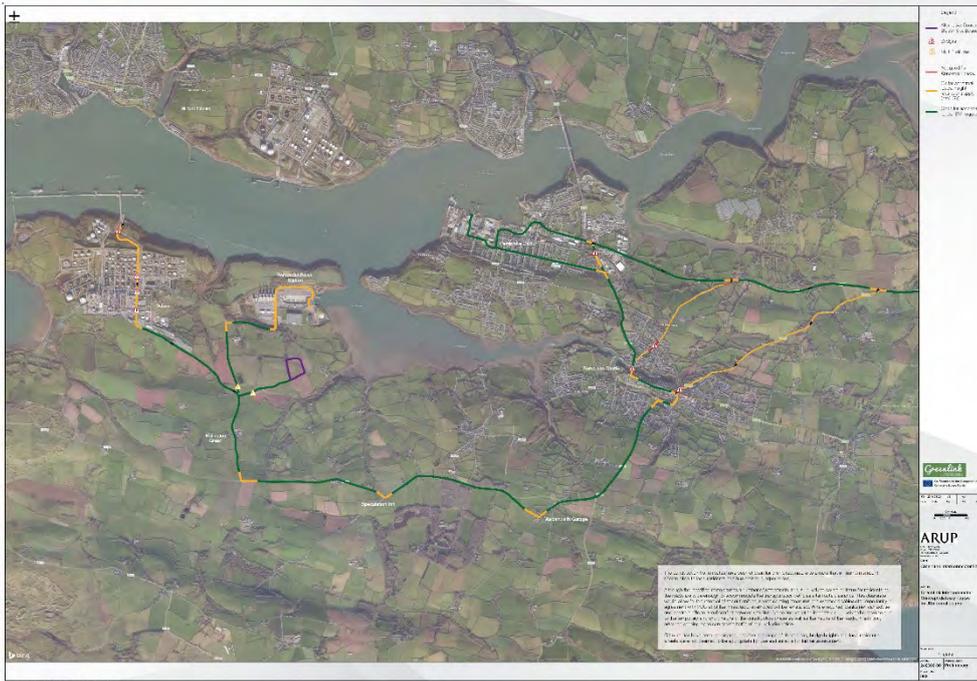
“ Your Views

We are particularly interested in hearing your views on ways that Greenlink can be designed to provide additional benefits to the local community.



For more information please visit: www.greenlink.ie

TRAFFIC AND TRANSPORT ROUTES



“

Your views

Do you have any issues you would like us to consider along the access routes?

”

For more information please visit: www.greenlink.ie

TRAFFIC AND TRANSPORT ROUTES



“

Your views

Do you have any issues you would like us to consider along the access routes?

”

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The traffic assessment addresses the traffic impacts on the road network from the construction and operation of the Greenlink project. The assessment includes the supply of materials, plant and equipment, the cable laying operations and the various components of the converter station.

Traffic arising from the construction and operations workforce has also been addressed.

A Transport Assessment (TA) has been produced in accordance with best practice. The methodology for the TA was agreed with Pembrokeshire County Council. It includes a review of the existing traffic patterns and an estimation of the traffic volumes that will be generated by the construction of the onshore cable, the landfall site and the converter station.

The potential disruption to the road network during the installation of the cables and the availability of alternative routes have been assessed. The traffic distribution pattern on the local road network during construction was examined and impacts determined.

We have worked hard to limit the impact of traffic and transport on local residents and businesses as much as possible and have made recommendations to mitigate any potential traffic impacts on the road network.



Your views

Do you have any specific concerns? Are there local organisations (businesses, schools etc) that we need to involve in the Traffic Management Plan?



Potential impacts and mitigation

There is potential for traffic impact from Greenlink during the construction phase, which will temporarily give rise to additional traffic on the road network.

Installation of the cables may require partial or full road closures and traffic may have to use alternative routes. Where the cable route diverges from the road, the impacts will be reduced.

Once the Greenlink project is in operation, the potential for a traffic impact is negligible. The level of operations and maintenance workforce will be low, so that the impact on any particular road will be insignificant.

Framework Traffic Management Plan

As part of the planning application process, a Framework Traffic Management Plan has been prepared to outline measures for managing and mitigating the construction traffic caused by Greenlink.

This includes establishing a preferred route for construction traffic that avoids Pembroke High Street.

Delivery routes for abnormal loads will be agreed with Pembrokeshire County Council in consultation with Pembroke Town Council.

The draft Traffic and Transport chapter is available to view at this public exhibition.

For more information please visit: www.greenlink.ie

MARINE LICENCE APPLICATION CONSULTATION



The formal consultation process for Greenlink's Marine Licence Application commenced on Wednesday 13th November and closes on 8th January 2020.

Copies of the environmental statement are available to view on the project website (www.greenlink.ie/marinelicenceapplicationwales) and the Natural Resources Wales (NRW) website (<https://naturalresources.wales/permits-and-permissions/pomit-applications-consultations-and-decisions/current-consultations-marine-licence-applications//lang=en>).



Copies of the environmental statement and other documents required by the EIA Regulations will be available for public inspection free of charges during normal office hours of 9am to 5pm, 13th November to 8th January, at the following:

Pembroke Library and Information Centre
Commons Road
Pembroke
Pembrokeshire
SA71 4EA

Cardiff Permitting Service
Natural Resources Wales
Cambria House
29 Newport Road
Cardiff
CF24 0TP



If you wish to make representations regarding the application and the environmental statement you can do so in writing to NRW at Permitting Service, Natural Resources Wales, Cambria House, 29 Newport Road, Cardiff, CF24 0TP or by email to marinelicensing@naturalresourceswales.gov.uk before 17:30hrs on 8th January 2020.

Representations should be dated and clearly state the name (in block capitals) and the full return email or postal address of the person making the representation.

Please quote reference number CML1929 in all correspondence.

Please note that while the standard formal consultation period is 42 days, due to interaction with the Christmas period we have agreed an extension to the consultation period of two weeks with NRW. This extends the consultation period to 56 days with the closing date of formal consultation set at 17:30hrs on Wednesday 8th January 2020.

For more information please visit: www.greenlink.ie

The proposed marine cable will run from Freshwater West, Pembrokeshire, Wales to the Hook Head Peninsula in County Wexford, Ireland.

Technical viability

Marine surveys have been undertaken and included geophysical and geotechnical surveys.

Geophysical

The geophysical survey mapped the seabed and sub-surface geology along the proposed route in order to be able to optimise cable routing within the survey corridor and to enable the assessment of cable target burial depth along the route.

It also provided the geophysical data from which the marine archaeological assessment was undertaken as part of the consenting process.

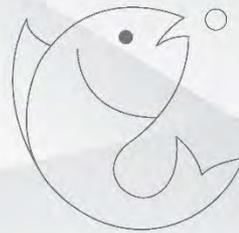
Geotechnical

The purpose of the geotechnical survey was to evaluate the nature and mechanical properties of the seabed and intertidal sediments along the survey corridor. This was done using a number of techniques, including drilling boreholes.

Environmental impacts

The marine survey mapped the distribution and extent of marine habitats within the proposed cable corridor.

Data from this survey was used to inform the Environmental Impact Assessment.





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When & Where

**MON 2 DECEMBER
2PM TO 8PM**

Hundleton Sports Pavilion, Hundleton, Pembroke

**TUES 3 DECEMBER
2PM TO 8PM**

Angle Village Hall
Angle, Pembroke
SA71 5AS

**WEDS 4 DECEMBER
2PM TO 6PM**

Pater Hall, Dimond Street
Pembroke Dock SA72 6DD

**THURS 5 DECEMBER
2PM TO 8PM**

Pembroke Town Hall
Main Street
Pembroke SA71 4JS



Annex 10

Angle Community Council Presentations



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CONTENTS		
▪	Project Introduction	
▪	Components	
▪	Landfall options	
▪	Marine routes	
▪	Marine surveys	
▪	Onshore route options	
▪	Onshore studies and surveys	
▪	Planning and permitting	
▪	Future work	

PAGE 1

1

PROJECT INTRODUCTION
Greenlink
INTERCONNECTOR

- Electricity Interconnector linking Irish and GB electricity transmission networks
- Promotes the development of an integrated grid
- Security of supply
- Better energy price competition
- Project of Common Interest status
- Interconnector Licence
- Cap and Floor

PAGE 2

2

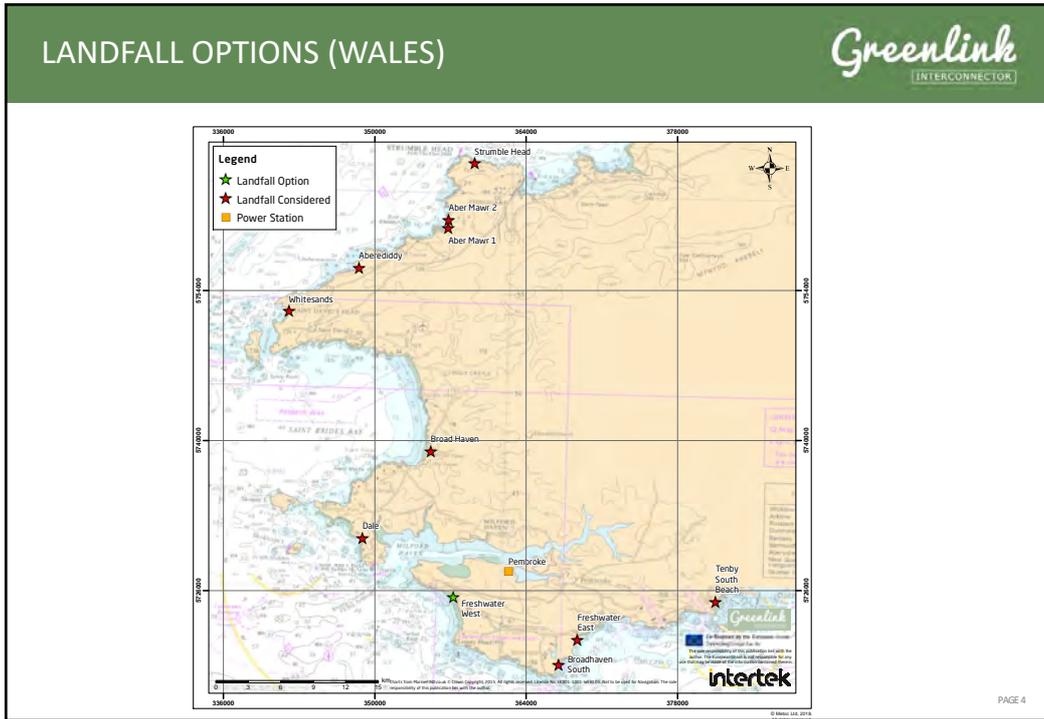
COMPONENTS
Greenlink
INTERCONNECTOR

- 2 x Converter stations – one near Great Island substation in County Wexford and one near Pembroke substation
- 2 x HVDC cables plus optical fibre cable
- Circa. 28km onshore in Ireland
- Circa. 170km marine cable
- Circa. 7km onshore Wales

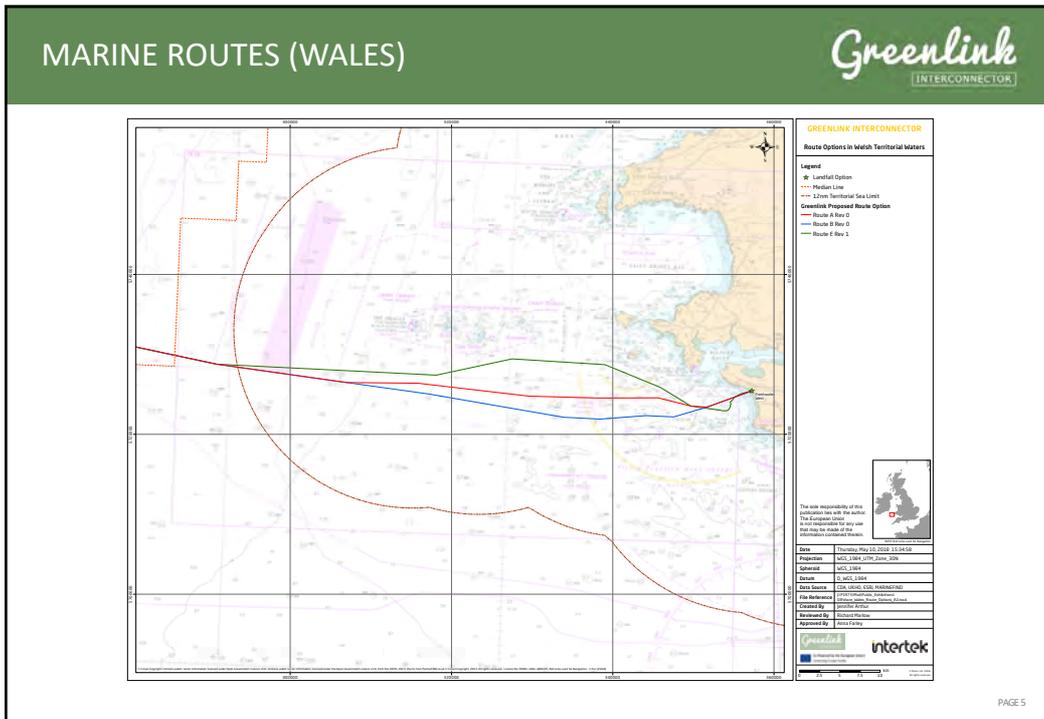
Indicative HVDC underground cable arrangement

PAGE 3

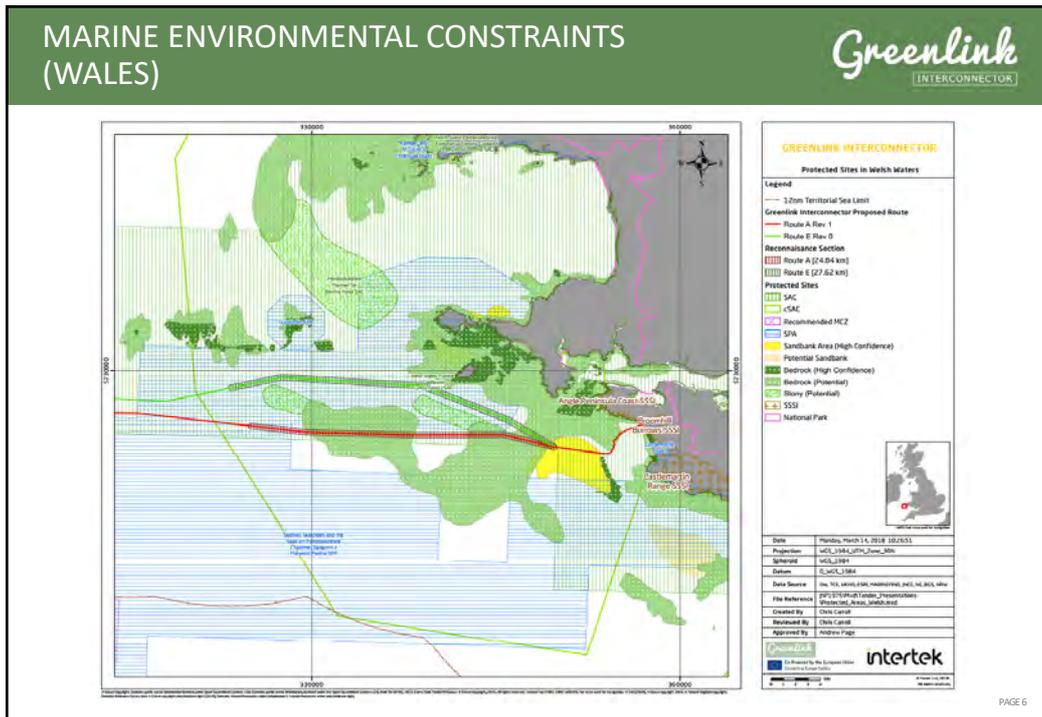
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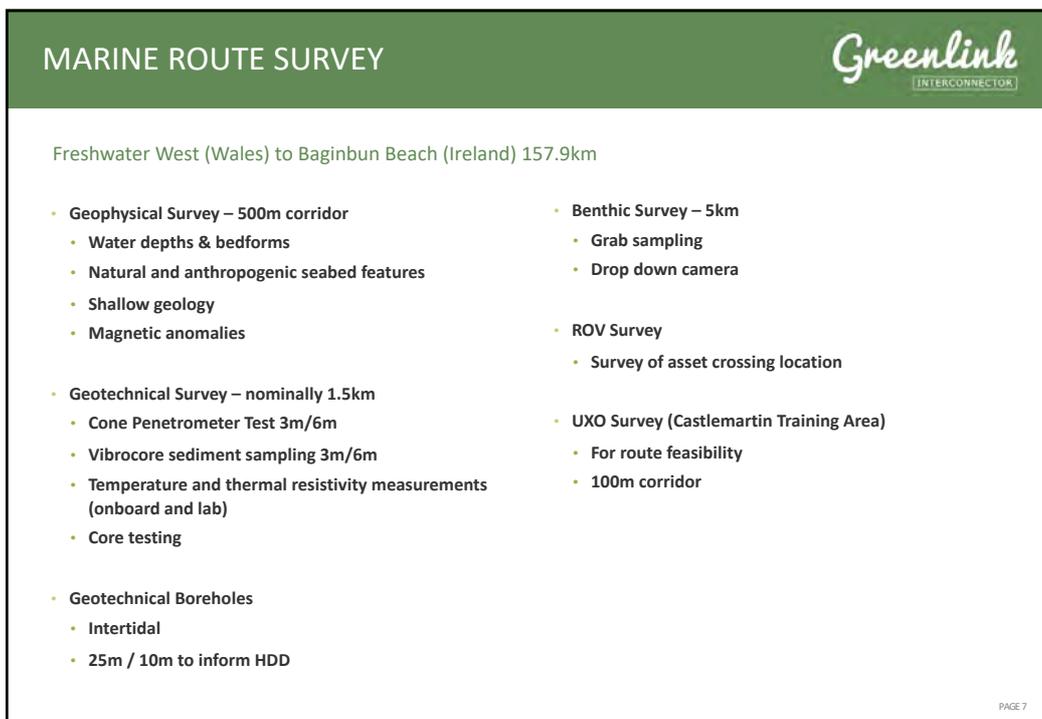


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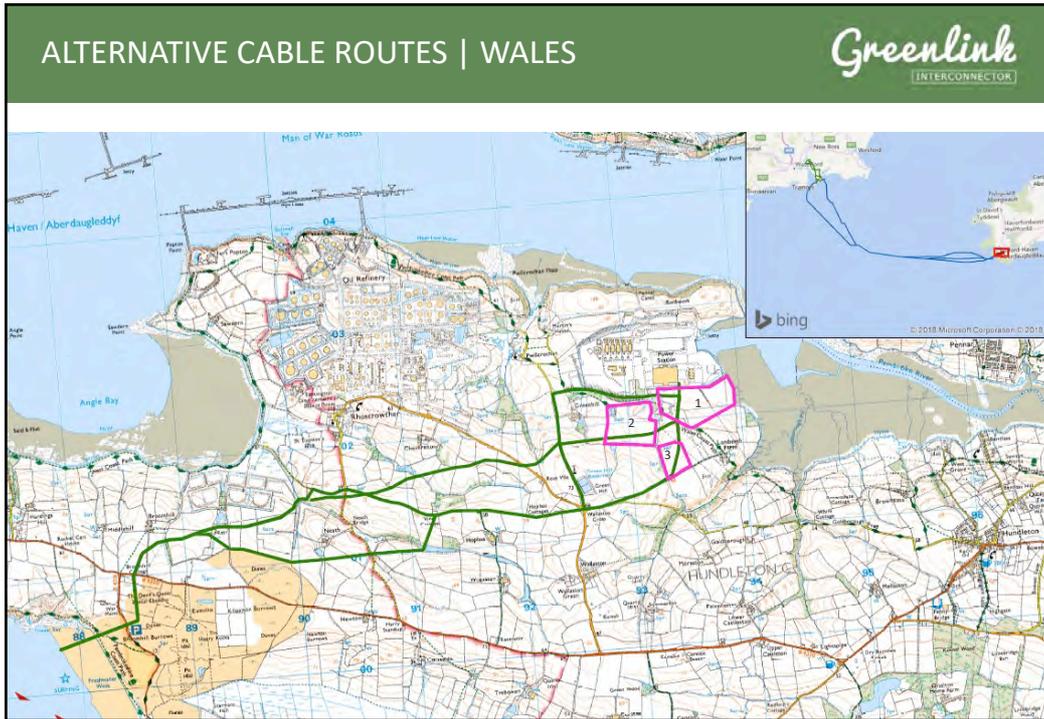
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8

ALTERNATIVE CABLE ROUTES | WALES

Greenlink
INTERCONNECTOR

- **Biodiversity**
- **Historic Environment**
- **Landscape and Visual Impact**
- **Traffic and Transport**
- **Socio Economics**
- **Noise and Vibration**

PAGE 9

9

PLANNING AND PERMITTING (WALES)

- **Onshore**
 - **Lawful Development Certificate** – Pembrokeshire County Council and Pembrokeshire Coast National Park Authority
 - **Major Development Planning Permission** – Pembrokeshire County Council
- **Offshore**
 - **Marine Licence** - Natural Resources Wales
 - **Marine Works Licence** - Milford Haven Port Authority

PAGE 10

10

FUTURE WORK

- **Lawful Development Certificate application**
- **Continue onshore survey work**
- **Geotechnical and geophysical work at the landfall and converter station sites**
- **Subsea surveys**
- **Detailed design work**
- **Supply chain engagement**
- **Further public consultation events**
- **Planning applications**

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0

Greenlink
INTERCONNECTOR

CONTENTS

- Project Status
- Marine Update
- Cable Route and Design Update
- Converter Station Update
- Future Work



Freshwater West Initial Survey results

PAGE 1

1

Greenlink
INTERCONNECTOR

PROJECT STATUS

- Now proceeding with a voluntary EIA
- Environmental studies nearly complete
- Technical assessment work ongoing
- Ground investigations
- Public exhibitions to be held shortly
- Environmental Scoping Report to be submitted shortly
- Draft application preparation

PAGE 2

2

Greenlink
INTERCONNECTOR

MARINE UPDATE

ID	Easting	Northing	Latitude (DMS)	Longitude (DMS)
1	343832.90	5726185.32	51° 39' 53.716" N	51° 39' 53.716" N
2	345136.44	5725645.92	51° 39' 37.568" N	51° 39' 37.568" N
3	340338.20	5725790.12	51° 39' 37.399" N	51° 39' 37.399" N
4	336871.65	5725072.34	51° 39' 10.705" N	51° 39' 10.705" N
5	334844.58	5725130.06	51° 39' 10.337" N	51° 39' 10.337" N
6	340287.12	5728289.29	51° 39' 53.632" N	51° 39' 53.632" N

RML1808: Greenlink Interconnector Marine Survey
Variation 2 – Additional Application Area

Legend

- Application Area Points to add to RML1808 as Variation 2
- Indicative Geotech Locations
- Median Line
- 12nm Territorial Sea Limit

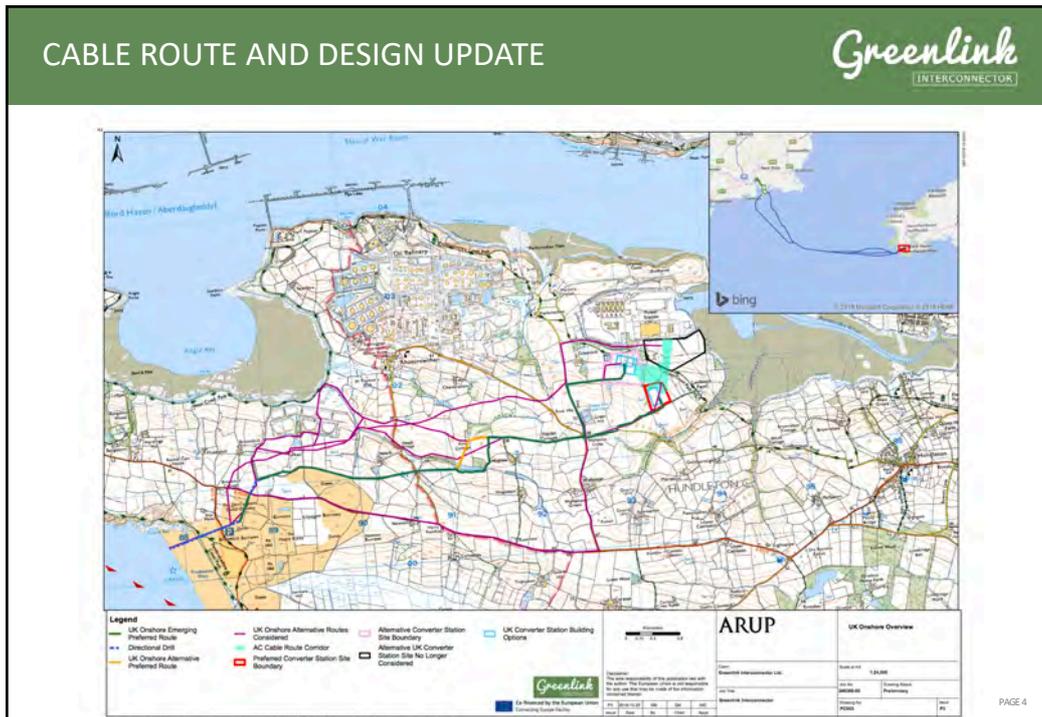
License Application Area

- RML1808 Variation 2 Application area
- RML1827 Application area (Route E)
- RML1808 Application area

Date	Monday, November 5, 2018 14:42:12
Project	WGL_2018_070_2018_001
Author	WGL_2018
Client	WGL_2018
Data Source	ESRI, CIA, GREENLINK, INTERTEK
File Reference	171070401808_Marine_Application_Area_20181105
Created By	Chris Carroll
Reviewed By	Chris Carroll
Approved By	Anna Darby

PAGE 3

3



4



5

FUTURE WORK

- **Continue onshore survey work**
- **Geotechnical and geophysical work at the landfall and converter station sites**
- **Complete subsea surveys**
- **Detailed design work**
- **Supply chain engagement**
- **Further public consultation events**
- **Planning applications**

PAGE 6



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CONTENTS *Greenlink*
INTERCONNECTOR

- Introduction
- Status
- Marine
- Onshore

Freshwater West Initial Survey results

PAGE 1

1

PROJECT INTRODUCTION Greenlink INTERCONNECTOR

- Proposed electricity interconnector linking the existing electricity grids in the UK and Ireland
- Cap and Floor (CBA) and Interconnector Licence
- European **Project of Common Interest (PCI)** aiming to link the energy system of Ireland and Great Britain
- Will consist of two converter stations, one close to the existing substation at Great Island in County Wexford (Ireland) and one close to the existing substation at Pembroke in Pembrokeshire (Wales)
- Converter stations will be connected by approx. 7km and 23km of underground cables (onshore, Wales & Ireland respectively) and 159km subsea cables (offshore) including a fibre-optic cable for communication and control purposes.

• <https://www.greenlink.ie>

PAGE 2

2

PROJECT STATUS - UPDATE Greenlink INTERCONNECTOR

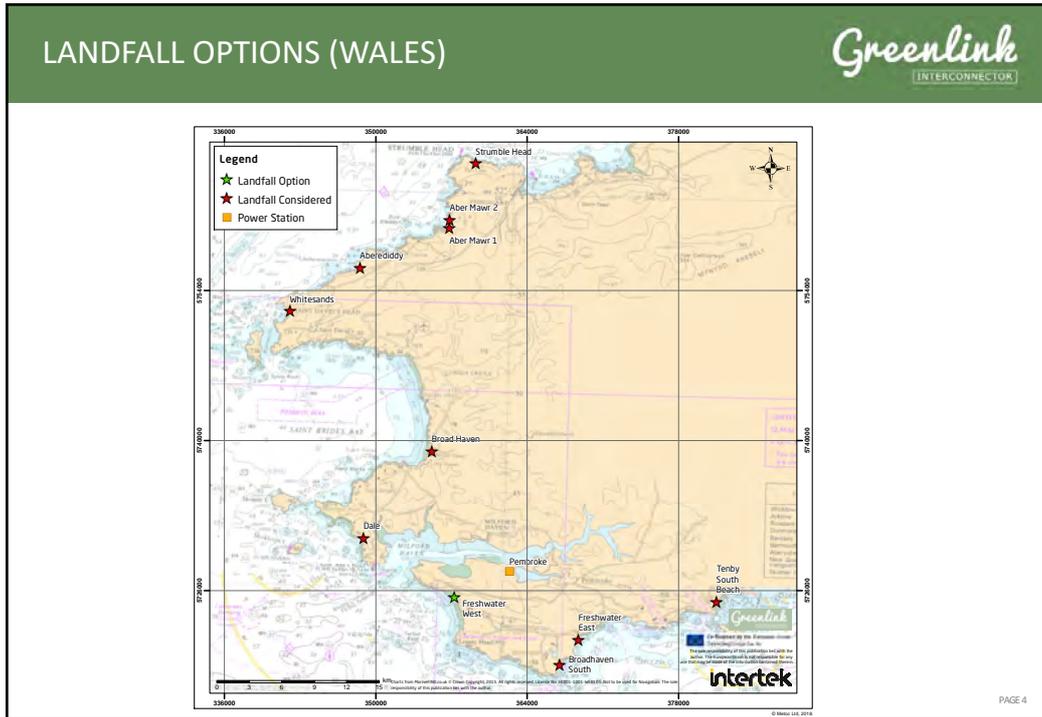
Timelines

- Environmental scoping – Nov 2018 [done]
- Subsea surveys – Sep to Dec 2018, Mar 2019 [done]
- Welsh Marine Licence application – Jun 2019 [done]
- Irish Foreshore Licence application – Aug 2019 [done]
- Onshore Planning applications – Q4 2019
- Target for granting of permits – Q1/Q2 2020
- Installation & Construction 2021 – 2023

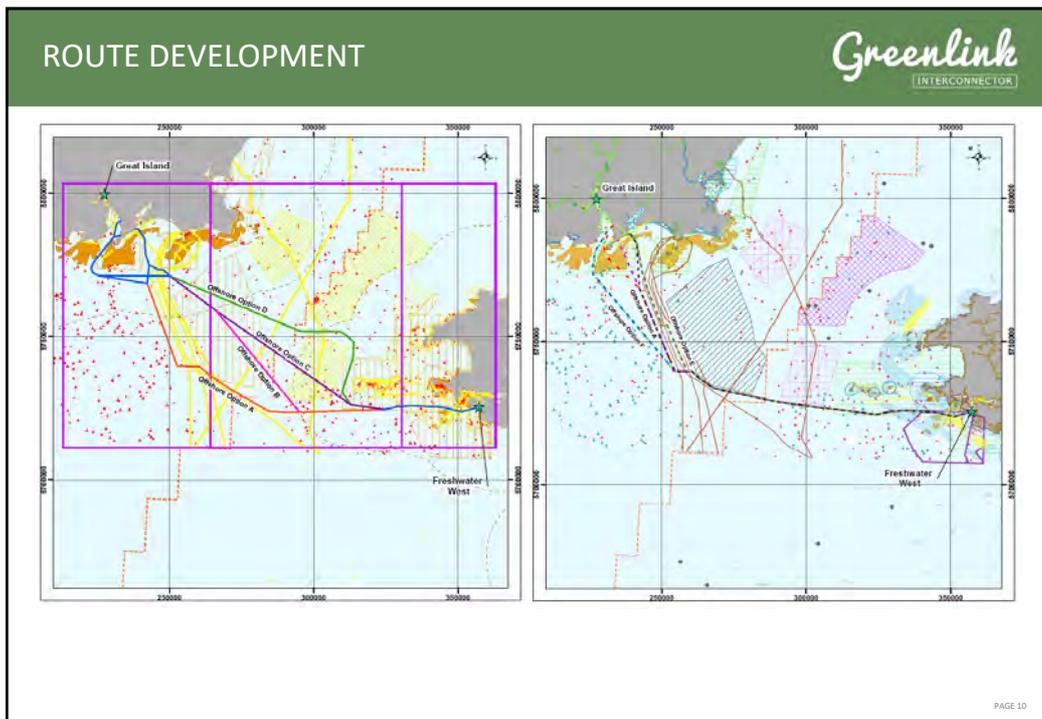
Source: MMT

PAGE 3

3



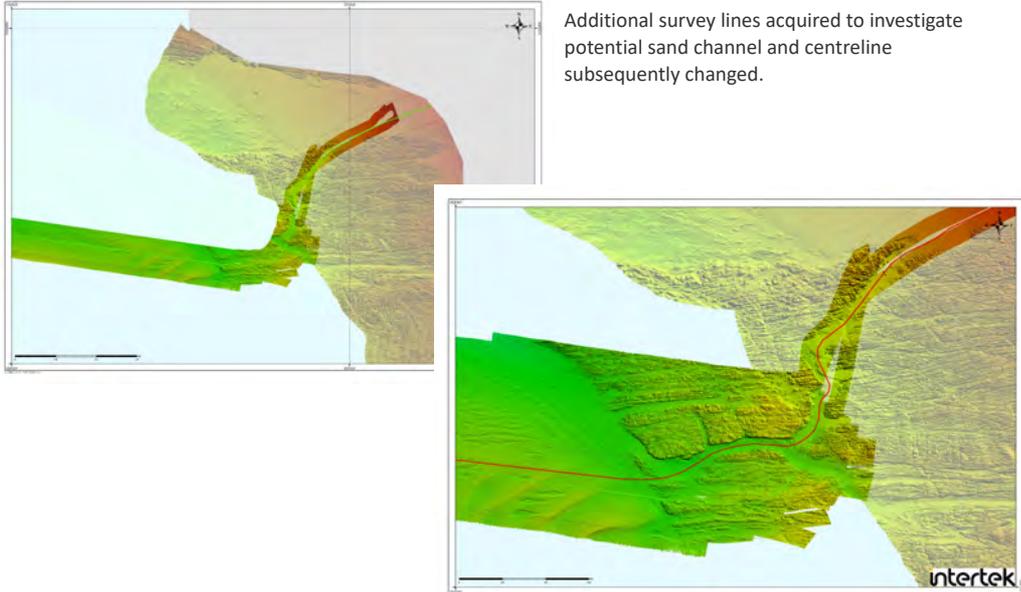
4



5

ROUTE REFINEMENTS DURING SURVEY

Greenlink
INTERCONNECTOR



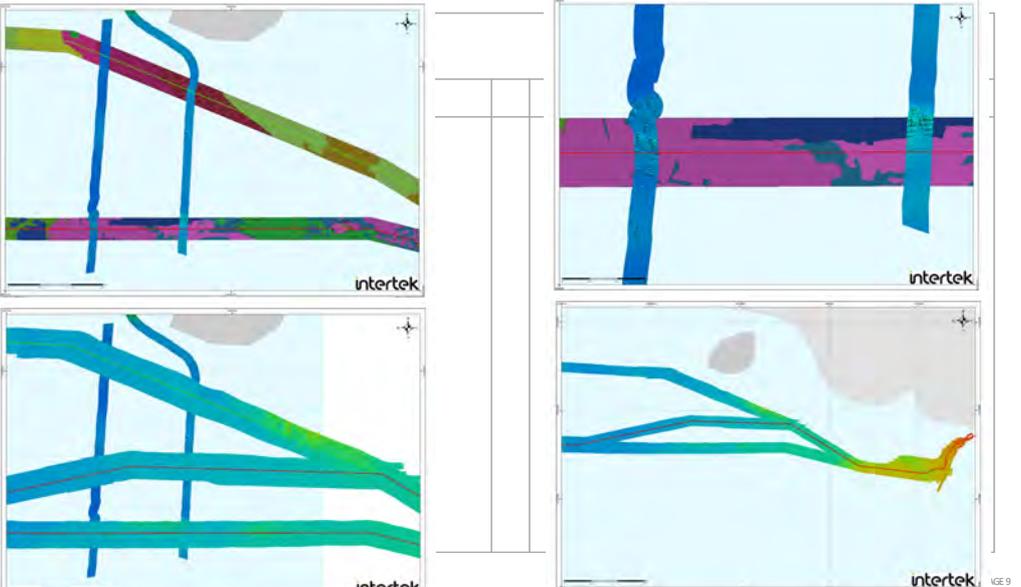
Additional survey lines acquired to investigate potential sand channel and centreline subsequently changed.

intertek

8

ROUTE DEFINITION TO AVOID SENSITIVE HABITAT

Greenlink
INTERCONNECTOR



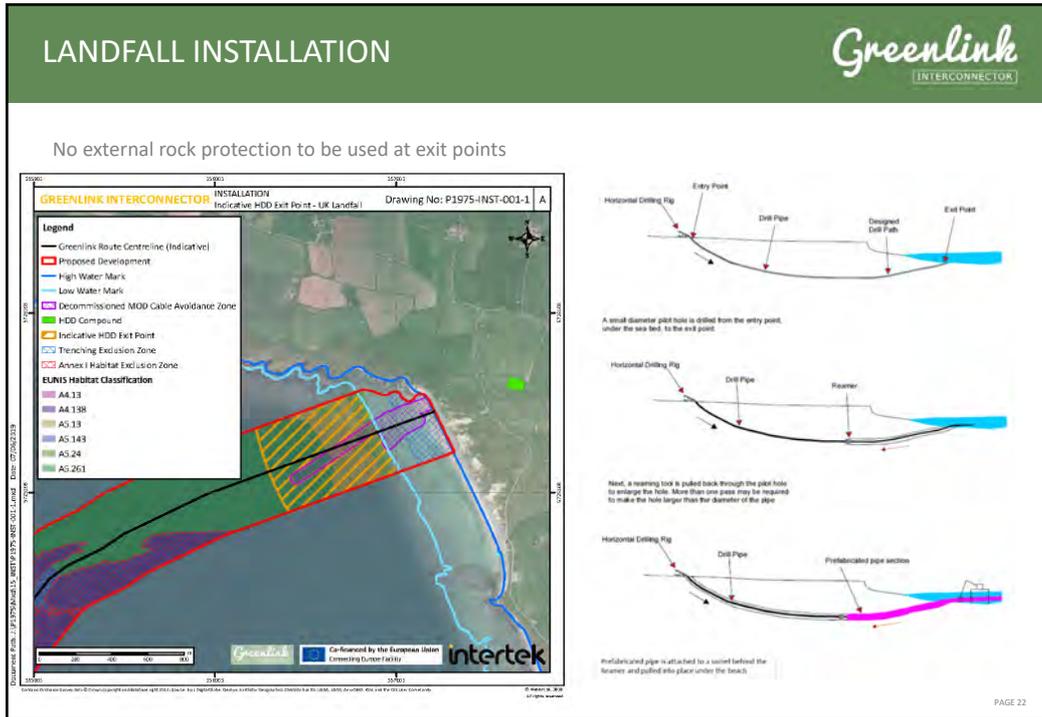
intertek

intertek

intertek

intertek ICE 9

9



10



11

Annex 11

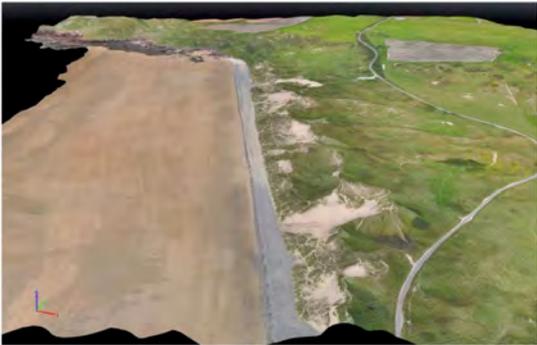
Pembroke Town Council Presentation



0

CONTENTS *Greenlink*
INTERCONNECTOR

- Project Introduction
- Project Status
- Components
- Landfall Options
- Cable Route and Design
- Traffic and Transport
- Future Work



Freshwater West Initial Survey results

PAGE 1

1

PROJECT INTRODUCTION 

- Electricity Interconnector linking Irish and GB electricity transmission networks
- Promotes the development of an integrated grid
- Security of supply
- Better energy price competition
- Project of Common Interest status
- Interconnector Licence
- Cap and Floor

PAGE 2

2

PROJECT STATUS 

- Voluntary EIA
- Environmental studies nearly complete
- Technical assessment work ongoing
- Ground investigations
- Public exhibitions
- Environmental Scoping Report has been submitted
- Draft application preparation

PAGE 3

3

Greenlink
INTERCONNECTOR

COMPONENTS

- 2 x Converter stations – one near Great Island substation in County Wexford and one near Pembroke substation
- 2 x HVDC cables plus optical fibre cable
- Circa. 28km onshore in Ireland
- Circa. 170km marine cable
- Circa. 7km onshore Wales

PAGE 4

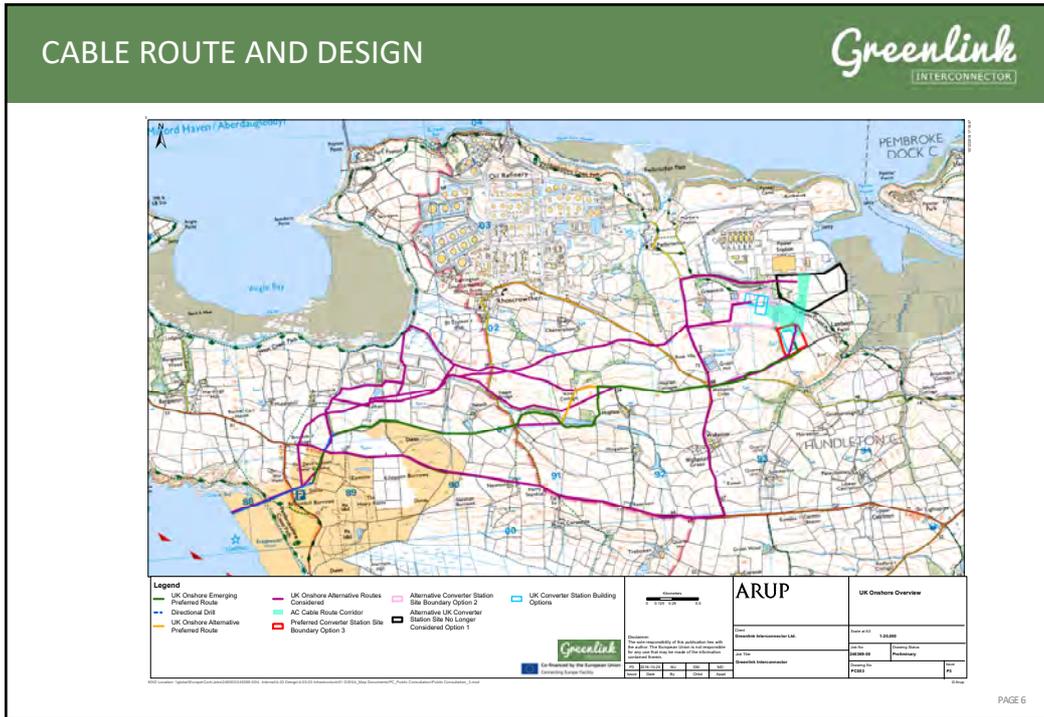
4

Greenlink
INTERCONNECTOR

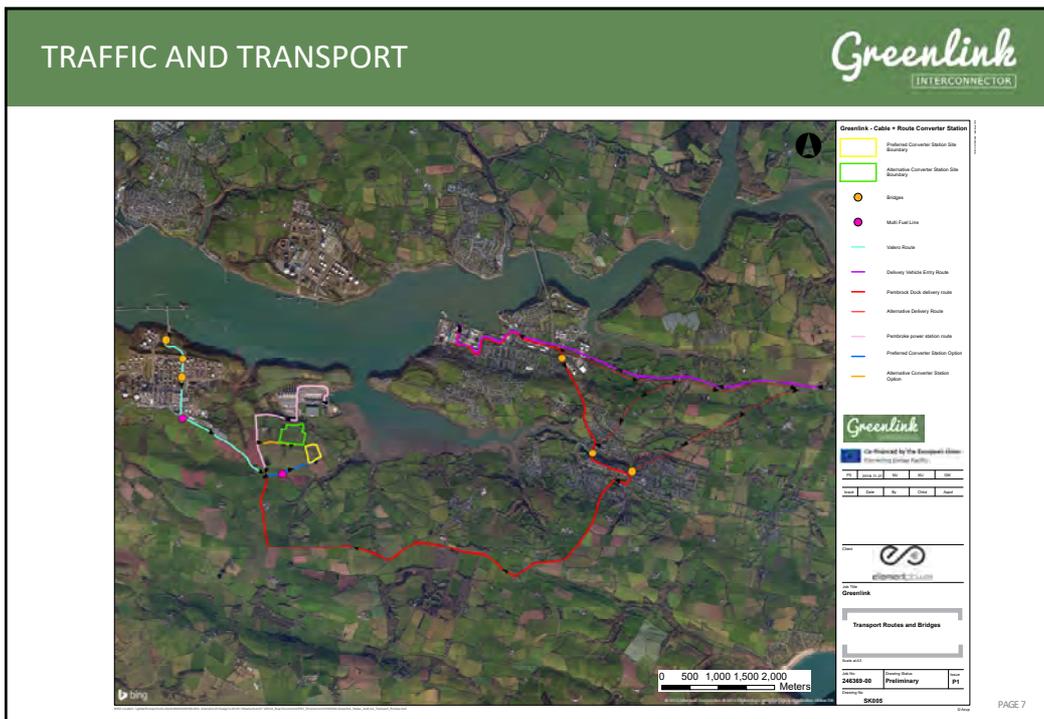
LANDFALL OPTIONS (WALES)

PAGE 5

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FUTURE WORK



- **Continue onshore survey work**
- **Geotechnical and geophysical work at the landfall and converter station sites**
- **Complete subsea surveys**
- **Detailed design work**
- **Supply chain engagement**
- **Further public consultation events**
- **Planning applications**

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Annex 12

Transport Public Exhibition –
Pembroke



Ferry Lane
 Bridge Height: 6.15m (Middle of soffit)
 Bridge Width: 7.2 m
 Bridge Span: 9.5 m approx



Golden Hill Rd
 Bridge Height: 2.9 m (Max restriction)
 Bridge Width: TBC
 Bridge Span: TBC



Northgate Rd
 Bridge Height: TBC (Max restriction)
 Bridge Width: 6.5 m approx
 Bridge Span: 62.7 m approx

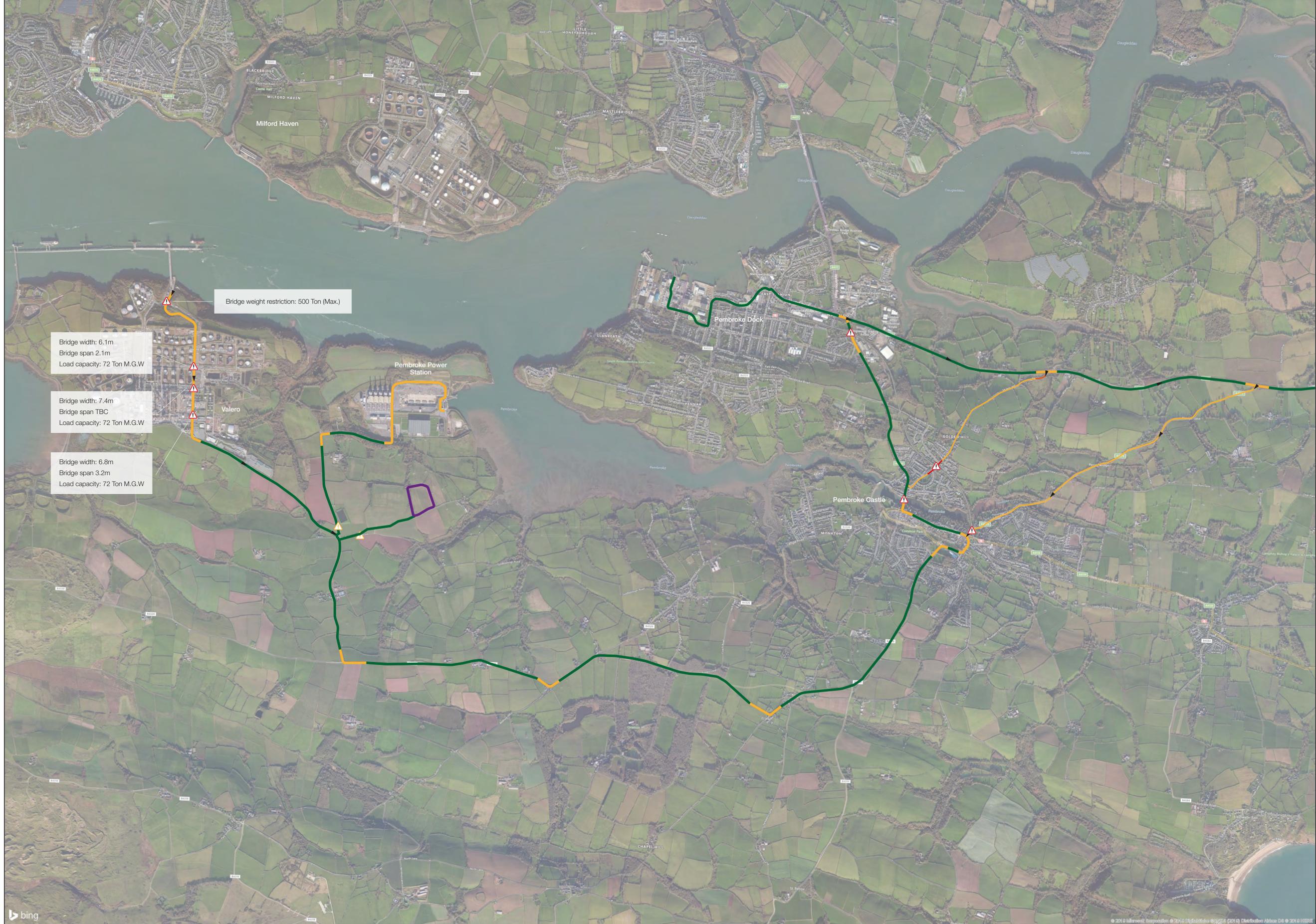


Holyland Rd
 Bridge Height: 4.5 m (Max restriction)
 Bridge Width: 5.1 m
 Bridge Span: 7.7 m

Efforts to be made to minimise using the high street.
 Minimise traffic during rush hours throughout Pembroke
 Large deliveries to take place at night to minimise impact
 Traffic management along whole route needed
 Abnormal loads to have a police escort

Legend

- Preferred Converter Station Site Boundary
- Alternative Converter Station Site Boundary
- ⚠ Bridges
- ⚠ Multi Fuel Line
- Not good for deliveries.
- Good for deliveries (LGV). SPA required.
- Good for all deliveries (Including HGV). SPA required
- - - AQAM



- Legend**
- Alternative Converter Station Site Boundary
 - Bridges
 - Multi Fuel Line
 - Not good for Abnormal Loads.
 - Ok for abnormal loads, height restrictions apply (car/LGV)
 - Good for abnormal loads. SPA required.



Issue	Date	By	Checked	Approved
P0	2019-03-29	AI	AW	



ARUP
 One Albert Quay
 Cork, T12 2W86
 Tel: +353 (0)21 422 3200
 www.arup.com

Client
Greenlink Interconnector Ltd

Job Title
**Greenlink Interconnector
 Concept delivery routes
 for Abnormal Loads**

Scale of A1
1:7,526

Job No.	Drawing Status
246369-00	Preliminary
Drawing No.	Issue
008	P0



TRAFFIC AND TRANSPORT DROP-IN SESSION



Greenlink Interconnector Ltd is currently preparing a planning application to construct an electricity interconnector between County Wexford in Ireland and Pembroke.

If planning permission is granted the construction programme is anticipated to commence in 2020 and last until 2023. Construction Traffic will need to pass through Pembroke and Greenlink Interconnector Ltd is working to minimise the impact traffic will have on the residents and businesses in Pembroke.

Members of the project team will be available to discuss the project and listen to the views of residents and businesses between 10am and 1pm on Thursday 4th April within the foyer of Pembroke Town Hall.

If you are unable to attend but wish to discuss any aspects of the project please email the project team at: greenlink@greenlink.ie

Your views

Do you have any specific concerns? Are there local organisations (businesses, schools etc.) that we need to involve in the Traffic Management Plan?

Please drop in to discuss the project with us.

When?

Thursday 4th April
10am to 1pm

Where?

Pembroke Town Hall
Main Street
Pembroke
SA71 4JS



For more information, please visit our website:
www.greenlink.ie

Greenlink
INTERCONNECTOR

Annex 13

Press Articles

Greenlink press coverage: Wales: April 2018 – Jan 2020

11th April 2018: Marine licensing applications:

<http://www.westerntelegraph.co.uk/news/16151119.100-mile-underwater-cable-to-share-power-between-Pembrokeshire-and-Ireland/>

<http://pembrokeshire-herald.com/43328/100-mile-underwater-cable-to-run-between-pembrokeshire-and-ireland/>

http://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/16151119.100-mile-underwater-cable-to-share-power-between-Pembrokeshire-and-Ireland/

http://www.milfordmercury.co.uk/news/pembrokeshire_news/16151119.100-mile-cable-to-share-power-between-wales-and-ireland/

15th May 2018: Greenlink press release: public exhibitions in Wales:

<https://www.greenlink.ie/post/public-consultation-kicks-off-for-greenlink-interconnector>

<https://www.westerntelegraph.co.uk/news/16226872.plans-on-display-for-100-mile-wales-ireland-power-cable/>

http://www.milfordmercury.co.uk/news/pembrokeshire_news/16226872.Plans-on-display-for-100-mile-Wales-Ireland-power-cable/

http://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/16226872.Plans-on-display-for-100-mile-Wales-Ireland-power-cable/

Post-exhibition coverage:

<http://www.westerntelegraph.co.uk/news/16274044.Pembrokeshire-to-Ireland-power-cable-plans-on-show/>

http://www.milfordmercury.co.uk/news/pembrokeshire_news/16274044.Pembrokeshire-to-Ireland-power-cable-plans-on-show/

http://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/16274044.Pembrokeshire-to-Ireland-power-cable-plans-on-show/

13th July 2018: BBC feature

<https://www.bbc.com/news/uk-wales-south-west-wales-44815036> (online). Broadcast item also available as an MP4 file.

Also on BBC Cymru in Welsh <https://www.bbc.co.uk/cymrufyw/44811540>

24th September 2018: Greenlink press release: start of marine surveying:

<https://www.greenlink.ie/post/marine-survey-work-starts-for-greenlink-interconnector>

<https://www.milfordmercury.co.uk/news/16903796.survey-work-starts-on-100-mile-ireland-pembroke-power-cable-plans/>

10th April 2019: Plans at Freshwater West Beach, Pembrokeshire

<https://www.westerntelegraph.co.uk/news/17564898.powerline-plans-for-freshwater-west-defended-by-greenlink/>

https://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/17564898.powerline-plans-for-freshwater-west-defended-by-greenlink/

https://www.milfordmercury.co.uk/news/pembrokeshire_news/17564898.powerline-plans-for-freshwater-west-defended-by-greenlink/

18th June 2019: Greenlink press release: Public exhibitions in Wales:

<https://www.greenlink.ie/post/public-exhibitions-in-wales-ahead-of-marine-licence-application>



Western Telegraph (19 June):

<https://www.westerntelegraph.co.uk/news/17720165.see-plans-for-freshwater-west-underwater-power-cable/>

https://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/17720165.see-plans-for-freshwater-west-underwater-power-cable/

https://www.milfordmercury.co.uk/news/pembrokeshire_news/17720165.see-plans-for-freshwater-west-underwater-power-cable/

Pembroke and Pembroke Dock Observer (21 June):

Public consultation continues on Greenlink energy project

As part of the continuing public consultation on the proposed Greenlink Interconnector, which will connect the electricity grids of Great Britain and Ireland, details have been announced of a third round of public exhibitions in the Pembroke area next week (June 24-27).

Greenlink is one of Europe's most important energy infrastructure projects and brings benefits on both sides of the Irish Sea for energy security, jobs and the cost-effective integration of low-carbon energy. The privately-financed project is being developed by Greenlink Interconnector Limited and is planned for commissioning in 2023.

Details of the exhibitions are as follows:

• Pembroke: June 24, 2 pm to 8 pm - Pembroke Town Hall, Main Street, Pembroke.

• Angle: June 25, 2 pm to 8 pm - Angle Village Hall, Angle.

• Pembroke Dock: June 26, 2 pm to 8 pm - Pater Hall, Diamond Street, Pembroke Dock.

• Hundleton: June 27, 4 pm to 8 pm - Sports Pavilion, Hundleton.

In Pembrokeshire, the interconnector comprises a subsea cable intended to come ashore under the beach and dunes at Freshwater West and continuing underground to a converter station located near to the

existing Pembroke substation. Subsea survey work has been completed, procurement for the major construction contracts is under way, and all onshore and marine planning applications will be submitted by the end of 2019. The project is expected to have a three-year construction programme, offering local supply chain opportunities.

The Marine Licence Application has recently been submitted to Natural Resources Wales for validation. Once validated, there will be an announcement on a formal process of consultation, whereby stakeholders can comment on the application.

Tom Brintcombe, planning and permitting manager for Greenlink in Wales, said:

"We are keen to continue to seek input from local residents and other stakeholders as we move into the final development stage prior to submitting the onshore planning application. To date we have received valuable feedback from local stakeholders which we have incorporated into our development work and believe will result in a high quality planning submission."

"I am pleased to confirm that we have now submitted our Marine Licence Application to Natural Resources Wales for validation, after which there will be a formal process of consultation, starting in

around four weeks' time. We will ensure this is advertised locally.

"I would like to reaffirm our commitment to minimise any impact on the beach and dunes at Freshwater West and can confirm that the Marine Licence Application does not include any requirement for construction work on the

beach or in the dunes. The cables will be installed by drilling the cables under the beach and dunes therefore minimising any impact on the environment and beach users. We will also be targeting installation to take place away from the summer months.

"We encourage everyone with an interest in the project

to come along to the exhibitions. As always, we are also keen to hear from local businesses that wish to be involved in the project - from civil engineering firms to local bed and breakfasts. Greenlink has the potential to bring significant regional investment and we want to optimise the economic benefits for the area."

Inner Wheel Club of Pembroke



Post-exhibition coverage (2nd July 2019):

<https://www.westerntelegraph.co.uk/news/17744021.marc-tierney-met-with-underwater-power-cable-company-greenlink/>

<https://www.milfordmercury.co.uk/news/17744024.marc-tierney-met-with-underwater-power-cable-company-greenlink/>

https://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/17744021.marc-tierney-met-with-underwater-power-cable-company-greenlink/

6th July 2019: post-exhibition coverage and impact on Freshwater West

<http://www.tenby->

[today.co.uk/article.cfm?id=125198&headline=Assurances%20on%20impact%20of%20undersea%20power%20project%20welcomed§ionIs=news&searchyear=2019](http://www.tenby-today.co.uk/article.cfm?id=125198&headline=Assurances%20on%20impact%20of%20undersea%20power%20project%20welcomed§ionIs=news&searchyear=2019)

<http://www.narberth-and-whitland-today.co.uk/article.cfm?id=125198>

12th November 2019: Press release: Submission of Marine Licence application in Wales:

<https://www.greenlink.ie/post/consultation-begins-on-greenlink-interconnector-s-marine-licence-application-in-wales>

<https://www.greenlink.ie/post/first-planning-applications-submitted-in-ireland-wales-for-greenlink-electricity-interconnector>

https://www.tivysideadvertiser.co.uk/news/pembrokeshire_news/18036217.consultation-starts-electricity-cable-freshwater-west-ireland/

12th November 2019: Letter to editor Western Telegraph from local resident Dave Haskell

<https://www.westerntelegraph.co.uk/news/18028038.letter-wake-industrial-wind-energy/>

25th November 2019: Greenlink press release: Further round of public exhibitions announced for Pembrokeshire: <https://www.greenlink.ie/post/further-round-of-public-exhibitions-on-proposed-greenlink-electricity-connector>

Pembroke & Pembroke Dock Observer (front page) (29th November 2019):

Pembroke & Pembroke Dock Observer
Friday, 29th November, 2019 VOLUME NO.9, NO.47 Price 70p

Further round of public exhibitions on proposed Greenlink electricity connector

As part of the continuing public consultation on the proposed Greenlink Interconnector, which will connect the electricity grids of Great Britain and Ireland, details have been announced of a fourth round of public exhibitions in Pembrokeshire next week.

Dates for the exhibitions are as follows:

- Handleton - Monday, December 2, 2 to 8 pm at the Sports Pavilion, Handleton.
- Angle - December 3, 2 to 8 pm at Angle Village Hall.
- Pembroke Dock - December 4, 2 to 6 pm at Pater Hall, Diamond Street.
- Pembroke - December 5, 2 to 8 pm, at Pembroke Town Hall, Main Street.

Greenlink is one of Europe's most important energy infrastructure projects. The electricity interconnector brings benefits on both sides of the Irish Sea for energy security, jobs and the cost-effective integration of low carbon energy.

The privately-financed project is being developed by Greenlink Interconnector Limited and is planned for commissioning in 2023.

In Pembrokeshire the interconnector comprises a sub-sea cable intended to come ashore under the beach and dunes at Freshwater West and continuing underground to a new converter station located near to the existing Pembroke substation.

The project is expected to have a three-year construction programme, offering local supply chain opportunities.

The exhibition will present the latest news and documents on the project. The Marine Licence Application submitted to Natural Resources Wales and currently the subject of a formal public consultation will be available to view. Stakeholders are invited to comment to NRW before January 8.

The Greenlink team will also be presenting the draft planning application documents for the onshore components of the project, including the draft Environmental Impact Assessment, ahead of submission of the onshore planning application to Pembrokeshire County Council and Pembrokeshire Park National Park Authority in early 2020.

Tom Britton, planning and permitting manager for Greenlink in Wales, said: "We are pleased to be able to give a further update to local residents on the design and development of the Greenlink project as part of our consultation process.

"We have received very valuable feedback to date, which we have incorporated into the project design so far, but would like to seek further views on the draft onshore planning application due to be submitted in early 2020.

"We have worked hard to design a project of the highest environmental and technical standards and are committed to minimising impacts throughout.

"This includes on the beach and dunes at Freshwater West and I can confirm that the Marine Licence application recently submitted to Natural Resources Wales Application does not include any requirement for construction work on the beach or in the dunes.

"The cables will be installed by drilling the cables under the beach and dunes therefore minimising any impact on the environment and beach users. We will also be targeting installation to take place away from the summer months.

"We are keen to hear local residents' views on the onshore proposals, including the underground cable route and the converter station. We encourage everyone with an interest in the project to come along to the exhibitions and discuss the proposals with us.

"As always, we are also keen to hear from local businesses that wish to be involved in the project - from civil engineering firms to local bed and breakfasts.

"Greenlink has the potential to bring significant regional investment and we want to optimise the economic benefits for the area," he added.

8th December 2019: Letter to editor Western Telegraph from Pembrokeshire Friends of the Earth "We need the interconnector"

<https://www.westerntelegraph.co.uk/news/18084467.letter-we-need-interconnector/>

18th December 2019: News on start of formal pre-application consultation and note on exhibitions
<https://www.westerntelegraph.co.uk/news/18104531.publics-comments-sought-greenlink-interconnector-project-freshwater-west-ireland/>

Annex 14

Feedback Form

– YOUR VIEWS –

We are very interested in hearing your views. Please feel free to capture in this form your comments on our proposal and some of the specific issues we have raised at the exhibition. Thank you for your input!

1. Your contact details

Name	
Address	
Phone/mobile number	
Email	
Do you want Greenlink to send you project updates?	Yes / No
Preferred method of contact	

2. Your comments

We would like to hear your views on any or all of the following issues, as well as any other comments you may have or additional issues you would like to raise.

- Potential converter station site** – Do you have any concerns, preferences or observations that should be considered by Greenlink?
- Onshore cable routes** – Do you have any concerns, preferences or observations that should be considered by Greenlink?
- Local supply chain** – Do you know of a local business that could benefit from the Greenlink Interconnector project? Let us know if you want to be added to our list of local suppliers!
- Landscape & visual impact** – Do you have any suggestions for viewpoints that should be assessed? What sort of landscaping planting would you like to see in and around the converter station?
- Noise and vibration** – Do you have concerns regarding noise and vibration you wish to be assessed?
- Biodiversity** – Do you know of any local environmental groups that Greenlink should consult? Are there specific issues you feel should be assessed that aren't currently being assessed?
- Traffic and transport** – Do you have any specific concerns? Are there local organisations (businesses, schools etc) that we need to involve in the Traffic Management Plan?
- Socio-economics/Local tourism** – Please let us know of any local tourism business or group we need to consider and involve in project discussions. Are there any particular local events that attract tourists that Greenlink needs to be aware of?
- Marine assessments** – Greenlink has appointed a Fisheries Liaison officer to liaise with local fishing interests. Do you want our Fisheries Liaison officer to contact you?
- Any other comments/issues** – Do you have any other comments on our work or any other issues that you would like to raise?

Please provide details on the next sheet....



– YOUR VIEWS –

We are very interested in hearing your views. Please feel free to capture in this form your comments on our proposal and some of the specific issues we have raised at the exhibition. Thank you for your input!

1. Your contact details

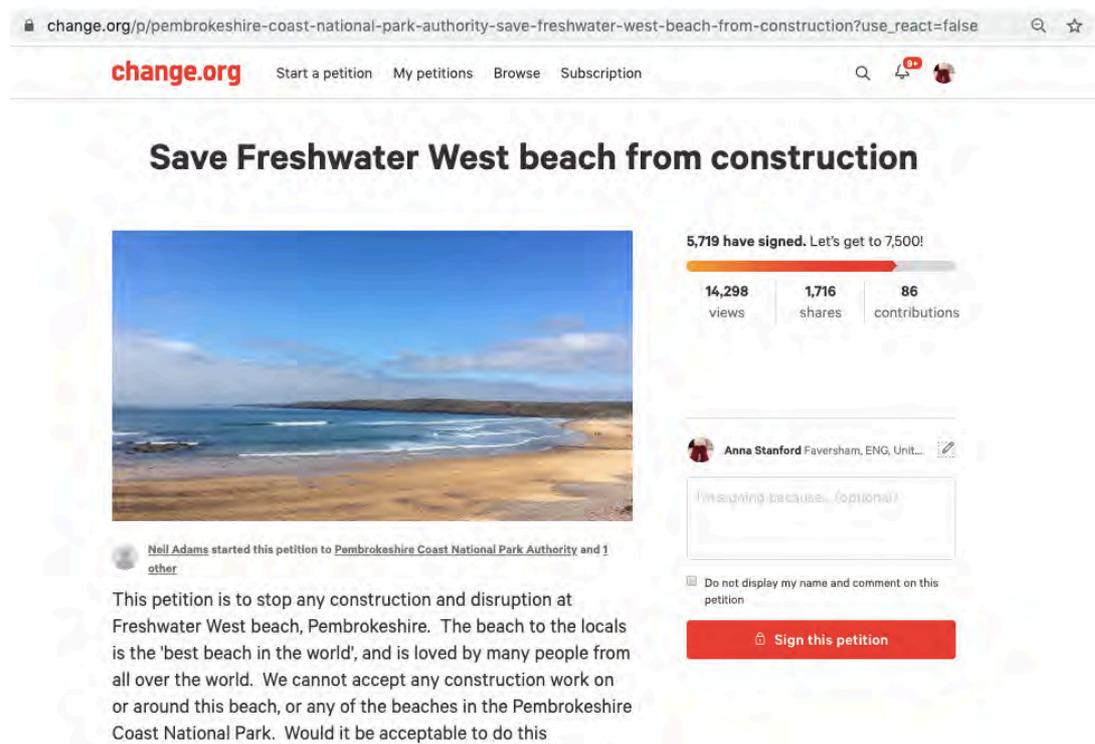
Name	
Address	
Phone/mobile number	
Email	
Do you want Greenlink to send you project updates?	Yes / No
Preferred method of contact	

Annex 15

Petition

Change.org petition: "Save Freshwater West beach from construction"

In early April 2019, a local resident set up an online petition on change.org to object to "construction in the bay, on the beach, sand dunes" at Freshwater West relating to the Greenlink project. It is directed at the Pembrokeshire Coast National Park Authority and the National Trust, asking that they "STOP/DECLINE any planning applications regarding to Freshwater West beach." The full wording of the petition is set out at the end.



The screenshot shows a Change.org petition page. At the top, the URL is change.org/p/pembrokeshire-coast-national-park-authority-save-freshwater-west-beach-from-construction?use_react=false. The page title is "Save Freshwater West beach from construction". Below the title is a photograph of a beach with blue water and a sandy shore. To the right of the photo, it says "5,719 have signed. Let's get to 7,500!". Below this is a progress bar and statistics: 14,298 views, 1,716 shares, and 86 contributions. The petitioner is listed as "Neil Adams" who started the petition to "Pembrokeshire Coast National Park Authority and 1 other". The petition text reads: "This petition is to stop any construction and disruption at Freshwater West beach, Pembrokeshire. The beach to the locals is the 'best beach in the world', and is loved by many people from all over the world. We cannot accept any construction work on or around this beach, or any of the beaches in the Pembrokeshire Coast National Park. Would it be acceptable to do this". There is a sign-off area with a signature "Anna Stanford Faversham, ENG, Unit..." and a checkbox for "Do not display my name and comment on this petition". A red "Sign this petition" button is at the bottom.

Greenlink's response

As soon as we were alerted to the petition, we made an effort to contact the petition originator to discuss their concerns. We also contacted the National Trust and the Pembrokeshire Coast National Park Authority to seek their views.

We were keen to correct any misunderstanding and misinformation as soon as possible and to clarify to the petition originator and the wider community that:

1. there would be no construction works directly on the beach or dunes at Freshwater Beach that would affect their important ecological and amenity value;
2. there would be no permanent construction compound, security fences or concrete structures;
3. the construction period at the landfall would be closer to three months than three years.

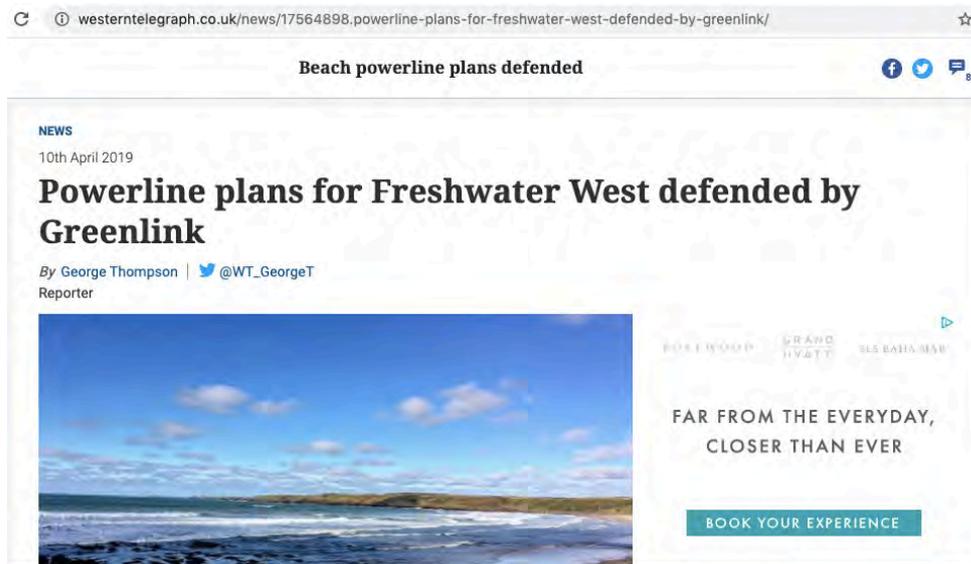
We adopted an open and proactive approach and immediately undertook the following actions:

- Attempted to contact the petition originator directly (by email and telephone) to discuss their concerns.

- Contacted residents, local councils, other local stakeholders and beach users directly to discuss the issues raised and allay any concerns.
- Provided information and a statement to the Western Telegraph, which was published on 10th April 2019.
- Discussed the concerns raised with the National Trust to seek their views. The National Trust confirmed that they understood the full details of the proposal and were supportive of the project and agreed to share this position with anyone who contacted them, in order to help correct misinformation and we provided them with a copy of our press statement to circulate as necessary.
- Alerted Angela Burns AM, Simon Hart MP and Stephen Crabb MP, on the concerns raised in the petition, clarified the situation and sent them a copy of our press statement to share with constituents as necessary.
- Discussed the concerns raised with Natural Resources Wales, who also confirmed that they believed Greenlink is working responsibly and that the proposed Horizontal Direct Drilling technique would result in no impact on the dunes or beach. They agreed to share this position with anyone who contacted them, in order to correct misinformation, and we provided them with a copy of our press statement.
- Checked and updated our Frequently Asked Questions on our website, to ensure that the information was comprehensive and that this particular issue was fully addressed.
- Made plans to ensure that this issue was clearly addressed as a priority at the upcoming public exhibitions in May.

Outcome

The Western Telegraph published the following article in response to the petition and our statement. <https://www.westerntelegraph.co.uk/news/17564898.powerline-plans-for-freshwater-west-defended-by-greenlink/>



It included the following comment from Greenlink:

Tom Brinicombe, Greenlink's planning manager for Wales, said the company wants to minimise the impact on the beach.

Mr Brinicombe clarified that while the project would take three years to complete, work at Freshwater West would last around three months with no restrictions to the beach during construction. He said: "As we have stated throughout the development process

and at our public exhibitions, the cable will be under the sea or below ground for its entire length from the substation in Ireland to the substation in Wales. The marine cable is laid under the seabed (or covered by undersea rock in places) and when it comes ashore at Freshwater West beach it will be buried all the way to Pembroke substation. Once this is complete, the cabling will be invisible and there will be no fencing or any other permanent structures restricting access," he added. Mr Brinicombe confirmed there would be no overhead powerlines.

Commenting on the local consultation process Mr Brinicombe added that the company is keen to hear people's views on the project. He said: "Our consultation so far has included seven public exhibitions in Pembrokeshire since last May and meetings with statutory authorities, community representatives and local organisations. At each of these and in our materials we have given detailed information on the proposed design, the ecological considerations and the surveys we are undertaking and have asked for feedback."

The company said they have also conducted a full environmental impact assessment, which will be verified by Natural Resources Wales. "I encourage local people to attend our next set of consultation events to share their views on the proposed design, including the preferred cable route and converter station location, or to contact us at any time if they have any concerns."

We felt that the article, which included a link to the Greenlink website, fairly addressed the issue and would help to alleviate concerns.

Following a constructive conversation with the petition originator to discuss his concerns and explain in detail the approach we would take to construction at Freshwater West, he agreed to publish updates on the petition website, including notes encouraging people to contact Greenlink directly with questions and to attend our upcoming public exhibitions. We believe that many of his concerns were allayed.

Updates



Greenlink
[Pembrokeshire]

PUBLIC EXHIBITIONS

Greenlink is a proposed electricity interconnector that will link the GB electricity transmission system in Pembrokeshire with that of Ireland via underground and subsea cables.

The Greenlink team would like to discuss the progress of the design and feasibility work and listen to your views.

It is proposed that the subsea cables will come onshore underground at Freshwater West (under the existing dunes and beach), carry on underground in the direction

When & Where

MONDAY 24TH JUNE
2PM TO 8PM
Pembroke Town Hall
Main Street
Pembroke SA71 4JS

TUESDAY 25TH JUNE

Public Exhibitions

Please attend one or all of the 'exhibitions' next week to make your views on the Interconnector know.

...

Neil Adams
8 months ago

Tom from Greenlink Interconnector responding to questions

Tom is going to publish a leaflet in answer to the questions which have been raised by the petition. If you have a burning question I suggest you ...

Neil Adams
10 months ago

Publicity around the petition subsequently died down. While the petition has gained over 5,500 signatories to date, these were mostly in the weeks after it was published and there has been very little activity since. The last published comment was 10 months ago. However, we are maintaining contact with local stakeholders at Freshwater West and in the local area, and are ensuring that our public information clearly addresses this issue.

Petition text:

[Neil Adams](#) started this petition to [Pembrokeshire Coast National Park Authority](#) and [1 other](#)

This petition is to stop any construction and disruption at Freshwater West beach, Pembrokeshire.

The beach to the locals is the 'best beach in the world', and is loved by many people from all over the world. We cannot accept any construction work on or around this beach, or any of the beaches in the Pembrokeshire Coast National Park. Would it be acceptable to do this construction on Fistral Beach, Cornwall?

Greenlink Interconnector Ltd (<https://www.greenlink.ie/>) want to build an electricity interlink between Ireland and Great Britain. The link will be connected in Wales to Pembroke B Power Station. The current plan is for the power cable to come on land at Freshwater West beach.

The construction if approved would take 3 years, including construction in the bay, on the beach, sand dunes, and then a route from Freshwater West to the power station. There is a meeting on 4th April in Pembroke Town Hall where the project team are happy to answer questions about minimising disruption to traffic and business in the area. I am not aware that there has been anything similar to discuss the ecological impact on the beach and surrounding area during and after the construction.

In a council meeting in January 2019 it was discussed that depending on the geology of Freshwater West beach the link may have to be on the surface on the beach. My assumption here is that it will then need to be secured, which would mean steel security fencing permanently on Freshwater West beach, or at least a concrete structure.

It is understood that the cost of laying the interconnector into the haven and directly to the power station is not financially feasible due to the estuary being dredged and therefore the cable would need to be buried. In my mind it is not ecologically feasible to disrupt the marine or beach environment, for any amount of money, or electric power.

Please support this petition to STOP/DECLINE any planning applications regarding to Freshwater West beach.