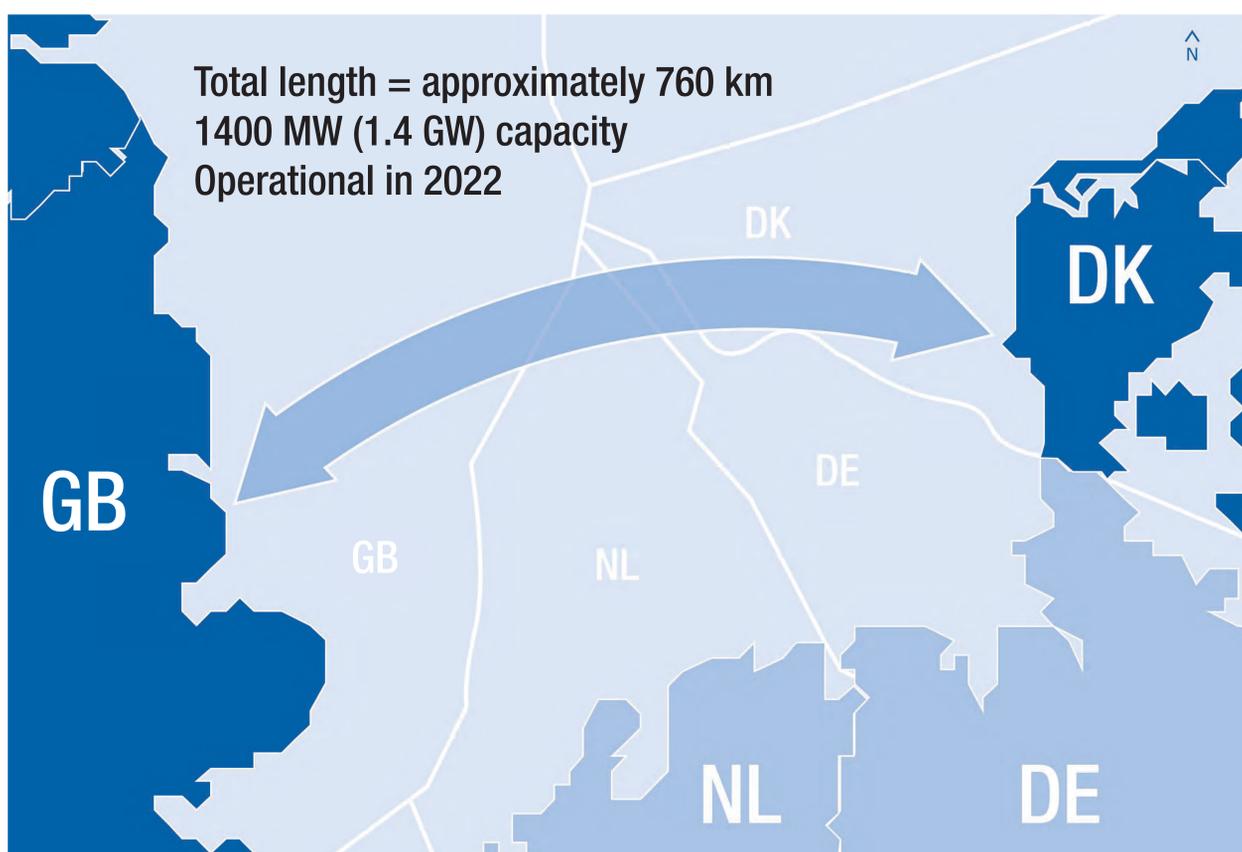


Welcome to Viking Link

Viking Link is a proposed 1400 Mega Watt (MW) high voltage direct current (DC) electricity link between the British and Danish transmission systems connecting at Bicker Fen substation in Lincolnshire and Revsing in southern Jutland, Denmark.

Viking Link will allow electricity to be exchanged between Great Britain and Denmark.



The project is being jointly developed between National Grid Viking Link Limited and Energinet.dk.

National Grid Viking Link Limited (NGVL) is a wholly owned subsidiary of National Grid Group and is legally separate from National Grid Electricity Transmission Plc (NGET) which has the licence to own and operate the high voltage electricity transmission system in England and Wales.

Energinet.dk is an independent public enterprise owned by the Danish state as represented by the Ministry of Energy, Utilities and Climate. It owns, operates and develops the Danish electricity and gas transmission systems.

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Why we're here today

We're here today to introduce the Viking Link project, to explain what we want to build and to answer any questions you may have.



Later in the summer, we will hold a public consultation on the cable route corridor options identified. We will provide more information on what we want to build and where it may be located, and we will seek your feedback on our proposals. We will also be consulting on the converter station building design with residents in the vicinity of the preferred site.

We are here to help

If you have any questions or concerns, we are here to help. Please do get in touch.

Tel: 0800 731 0561

Email: vikinglink@communityrelations.co.uk

Write: FREEPOST VIKING LINK

Our telephone service is available between 9am and 5.30pm (Monday to Friday). Outside of these hours an answerphone is in operation and messages will be picked up during the next working day.

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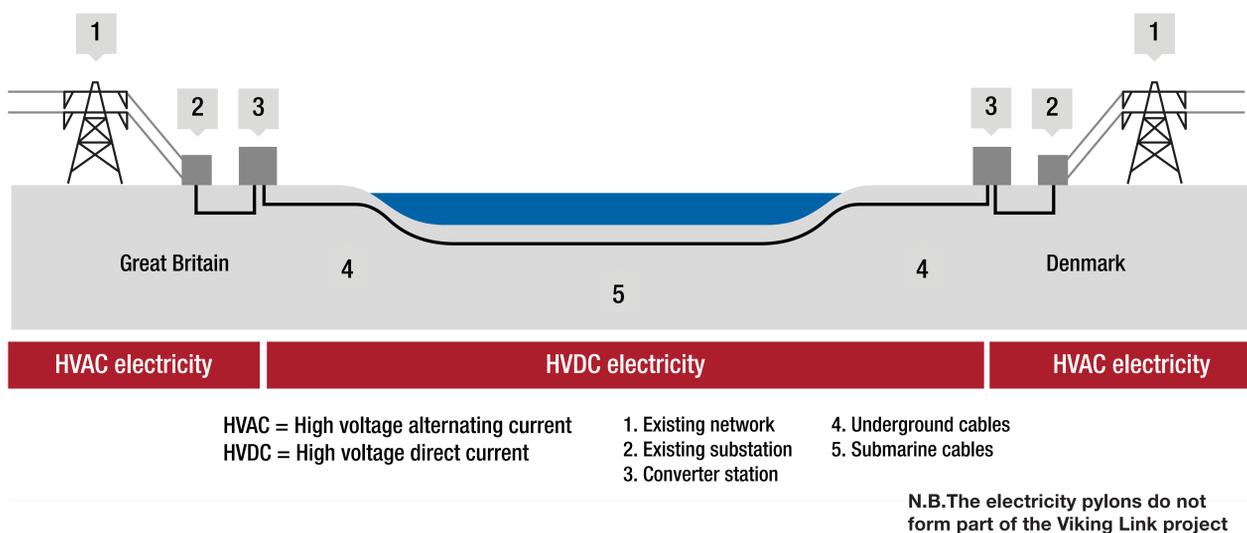
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What is Viking Link?

Viking Link will involve the construction of a converter station in each country and the installation of submarine and underground cables between each converter station and underground cables between the converter station and substation in each country.

The cables will run for approximately 760 km between Great Britain and Denmark and will require the use of high voltage direct current (DC) technology. The electricity networks in Great Britain and Denmark both use high voltage alternating current (AC). Viking Link will use DC technology because it is more effective at transmitting large volumes of electricity over longer distances and provides more control over the power flow.

The diagram below shows the different parts of an interconnector:



The converter station in each country will change the electricity between DC and AC, which is what we use in our homes.

Each end of the link will be connected to an existing substation which will need to be developed to accommodate the new connection. In Great Britain, Viking Link will connect to the existing NGET 400 kV substation at Bicker Fen, Lincolnshire via AC cables. Connecting to the substations will enable the electricity to be delivered to homes and businesses.

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Getting more connected

Interconnectors bring benefits to both consumers and producers.

Great Britain faces a major challenge in how it continues to meet the country's increasing energy needs and in addressing the problem of climate change.

Interconnectors like Viking Link can help address these challenges and can bring many benefits, including:

- Improving diversity and security of energy supply by enabling the import of electricity generated from neighbouring interconnected markets.
- Helping the Government meet its carbon reduction commitments by providing access to a well-developed, low cost renewable energy market.
- Lowering the cost of electricity through cross-border trade in electricity and shared use of the cheapest generation sources. This can help consumers in an expensive market to benefit from cheaper imports.
- Increasing market for producers, such as wind power generators – interconnectors increase opportunities to sell electricity, reducing surplus and adding value.
- Facilitating competition in the European market and the optimal use of resources across European Union (EU) Member States.



The European Commission has identified Viking Link as a Project of Common Interest (PCI). This means it should deliver significant benefits for at least two European Member States, further support market integration and competition, enhance security of energy supply and contribute to reducing CO₂ emissions.

PCIs are governed under Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure, referred to as the TEN-E Regulations.

In Great Britain there are four operational interconnectors which together total 4 GW - around 5% of existing electricity generation capacity.

National Grid has two further projects under construction.

Nine more interconnectors are being developed.

For every 1 GW of new interconnector capacity it is estimated Britain's wholesale power prices could reduce by 1-2%.

4-5 GW of new links to Europe could unlock up to £1 billion per year of benefits to energy consumers.



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Connecting to the network



Bicker Fen substation

Viking Link applied to National Grid Electricity Transmission (NGET) for a connection to the national electricity transmission network. NGET undertook a study of possible connection options and a number of different options were considered along the east of England. NGET together with Viking Link identified the National Grid Bicker Fen substation as the most appropriate connection point.

Details of all the options identified and the assessments are included in a Connection Point Selection Report provided by NGET and a Strategic Options Report produced by NGVL. Copies of these reports can be viewed here today and are available on the Viking Link website.

This information is provided as background and does not form part of the consultation.

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Who we've been speaking to already

For the last 12 months, we've been talking to local planning authorities, statutory bodies and other stakeholder groups to discuss our proposed Viking Link project.

In the spring we held our first phase of public consultation with local communities in the areas where we had identified potential sites for a landfall on the Lincolnshire coast and a converter station within the vicinity of NGET's Bicker Fen substation.

Phase One consultation

From 11 April to 20 May 2016 we held our first phase of consultation with local residents, parish councils and stakeholders close to our shortlisted site options for a landfall on the Lincolnshire coast and a converter station close to Bicker Fen substation.

The purpose of the consultation was to help us identify our preferred landfall and converter station sites.

Six public exhibitions were held and over 500 local residents attended the exhibitions.

We received over 580 pieces of individual feedback during the consultation, which has been analysed by the Viking Link project team. The main areas of feedback were:

- Visual impact of the converter station
- Impact on traffic and roads
- Impact to farmland.

A Consultation Feedback Report will be published in the coming weeks.



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Approach to cable routeing

All our cables will be buried underground and when our construction work is completed, they will not be visible.

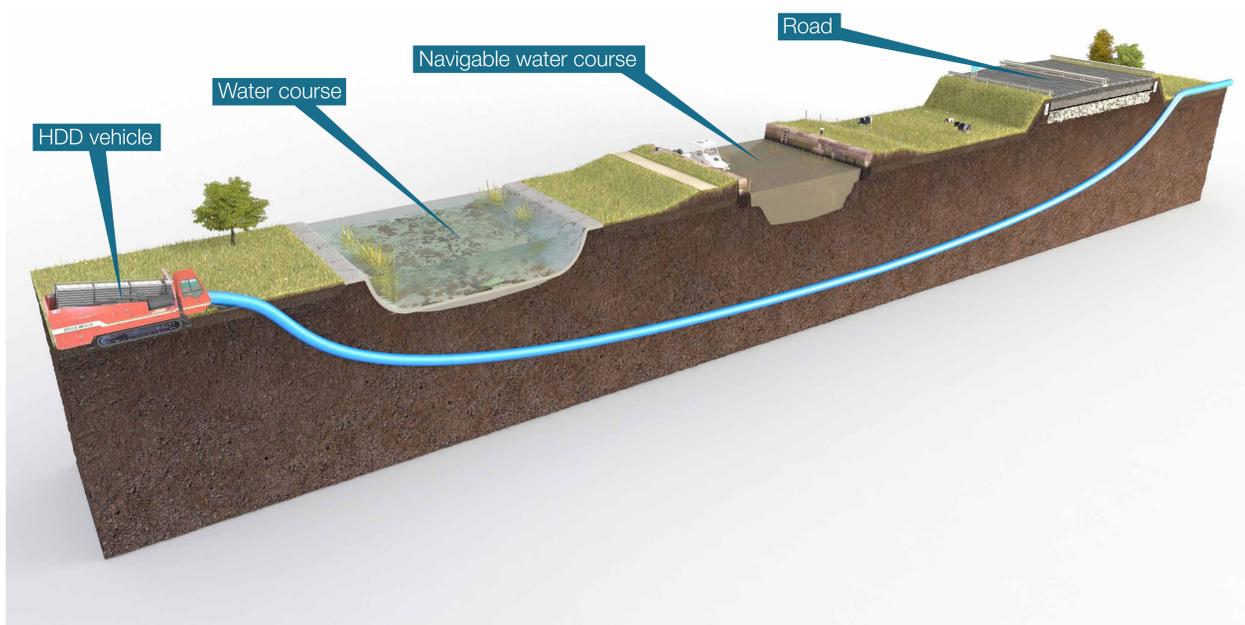
We need to route two underground DC cables for approximately 55-60 km between the landfall site and converter station. Typically, the cables will be buried in a trench to a depth of approximately 1.5 m depending on ground conditions, field drainage and local activities.

We will also need to identify a suitable route for underground high voltage AC cables between the converter station and Bicker Fen substation.

We will need to carry out a range of surveys and assessments and hold detailed discussions with local authorities, statutory organisations, landowners and other stakeholders. There are many factors which need to be taken into account, including:

- Impact on local communities
- Land usage and drainage
- Environmental constraints
- Ecology
- Archaeology and cultural heritage
- Impact on transport routes
- Accessibility
- Potential cumulative impacts with other projects in the region
- Constructability

When we have more information, we will consult with parish councils and local residents to identify the most appropriate route corridor for the cables.



This diagram shows the horizontal directional drilling (HDD) technique crossing under a road and water courses.

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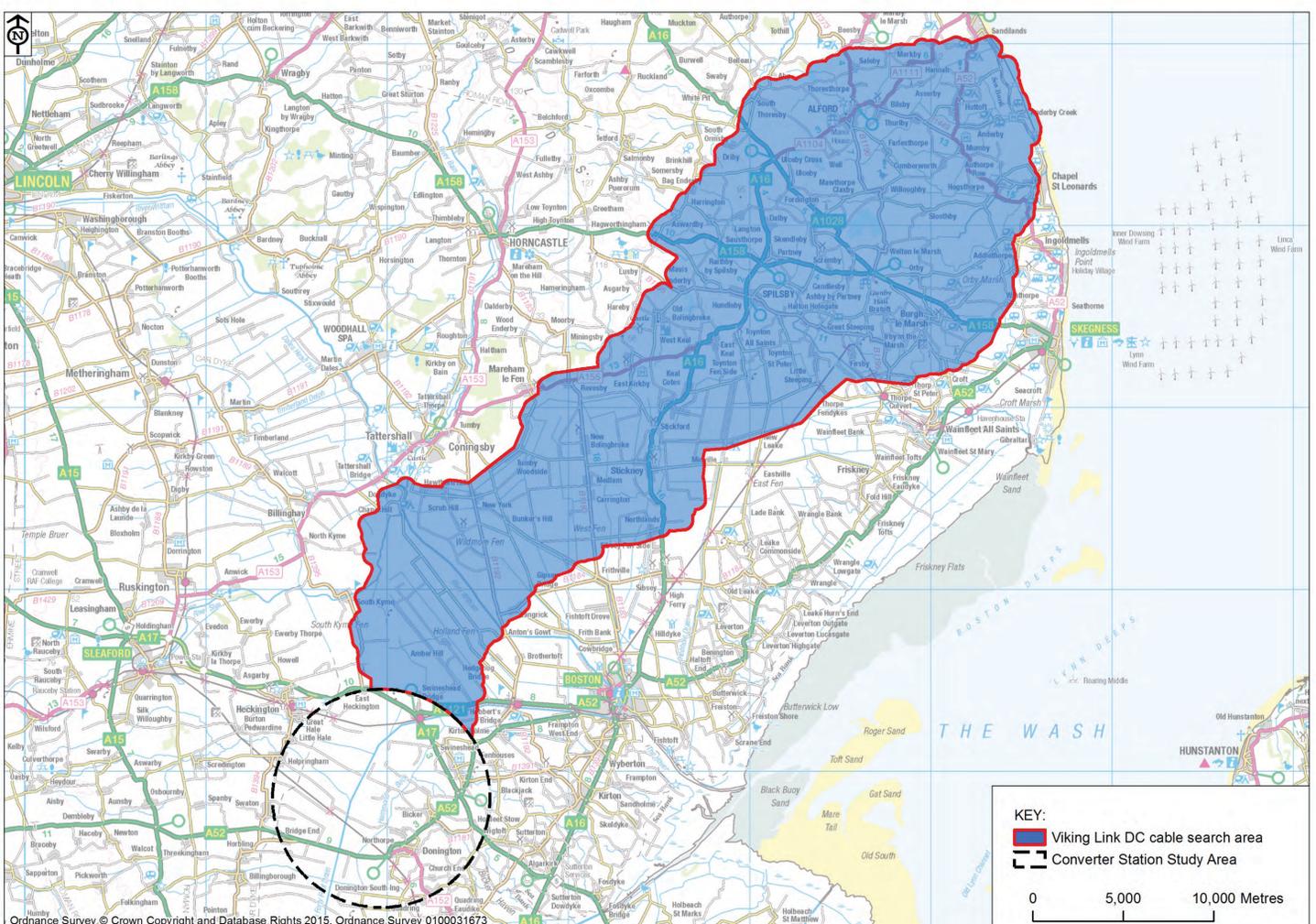
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Our approach to selecting a cable route

Our approach is broadly made up of three steps:

- Step 1 – Identification of a cable route search area
- Step 2 – Development and assessment of route corridors within the cable route search area
- Step 3 – Development and assessment of route alignment within the route corridors

We are currently at step one which is why we are here today. The map below shows the cable route search area:



The next phase of our work is to carry out steps two and three. Later on in the summer we will be consulting on the cable route corridor options identified.

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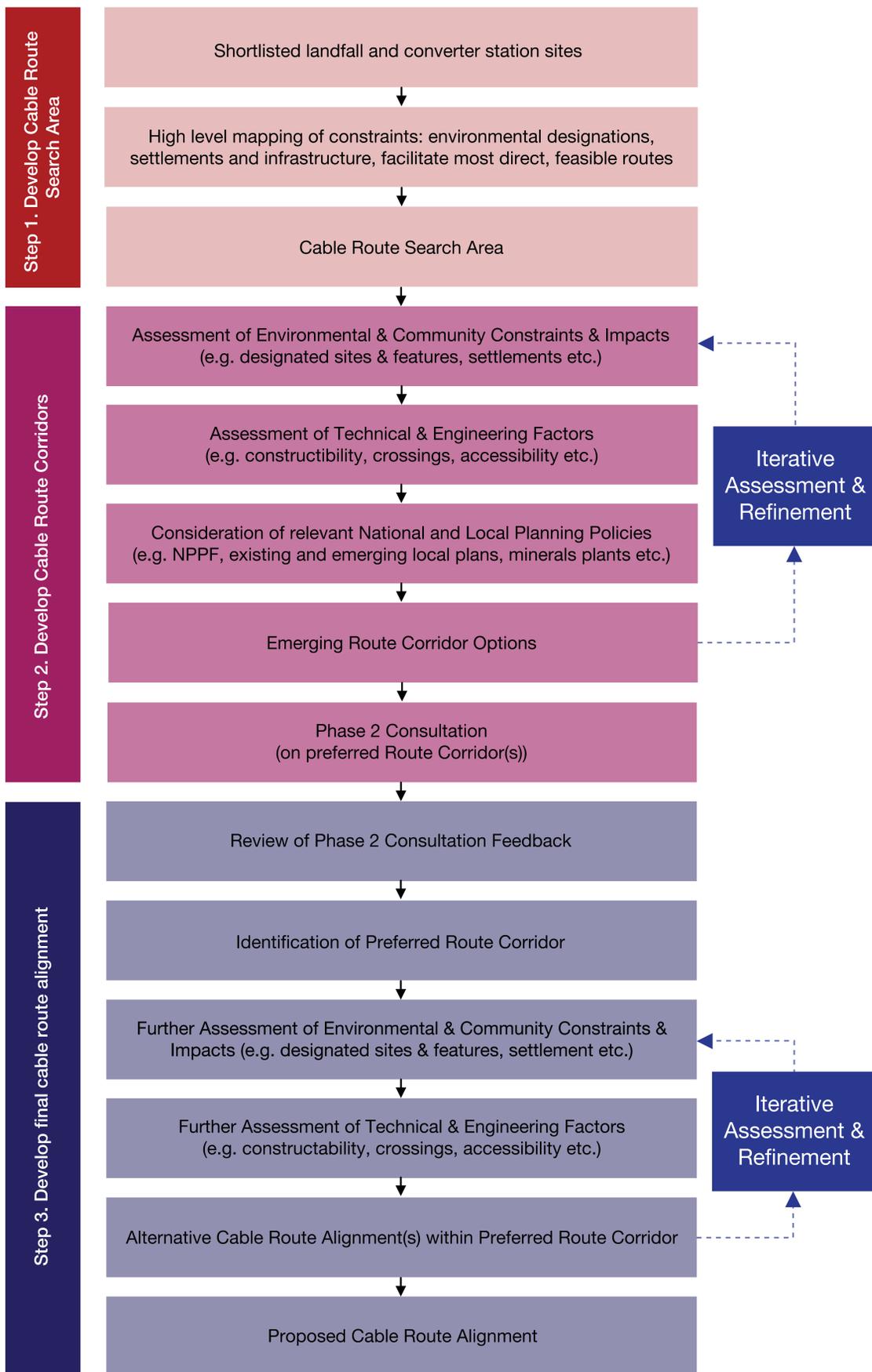
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Cable routeing process

The flow chart below sets out how we are going about selecting the cable route:



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Installing the cable route

We need to install a pair of Direct Current (DC) cables for approximately 55-60 km from the landfall to the converter station. We will also need to install Alternating Current (AC) cables from the converter station to Bicker Fen substation. The exact length of the AC cables will depend on which converter station site we choose and could be up to 5 km.

The exact method of cable installation will depend on the constraints and obstacles encountered but will typically involve a combination of:

Open cut or direct burial

where the cable is installed in an excavated trench which is then backfilled.

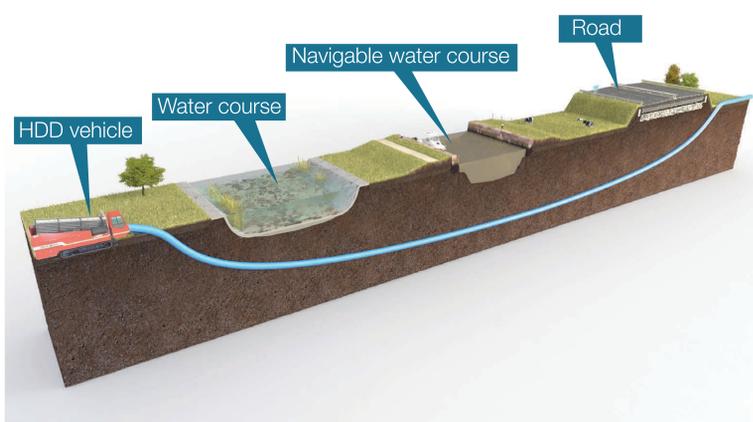
Cable jointing

where two adjacent cable sections are joined together in a joint bay. This occurs in a “clean” covered environment.



Trenchless methods

such as Horizontal Directional Drill (HDD) or pipe-jacking.



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Submarine cable route

The submarine cables are a major part of the Viking Link project.

They will run for approximately 650 km between the coasts of Great Britain and Denmark, crossing through British and Danish territorial waters and the Exclusive Economic Zones of Great Britain, the Netherlands, Germany and Denmark.

We have carried out desktop surveys to identify any constraints, such as environmental designations and important navigational routes. We have also been speaking to relevant stakeholders, national authorities and other organisations.

Many cable route options were reviewed during the development phase, including two potential cable route corridors for the submarine cables in British waters.

A full marine survey is being carried out. This survey will collect information about the seabed and sub-seabed and will help us in our assessments.

When we have finalised our proposals we will submit an application for permits to install, operate and decommission the submarine cable in all four European jurisdictions.



Please let us know if you think there is something we should take into consideration along the identified submarine cable route corridor.

Working in the local community

We are committed to being good neighbours and we want to work with you as we develop our proposals.

We are at an early stage of our design work and we aim to minimise any disruption during our survey and exploratory work as well as during the construction work.

We will carry out a full Environmental Impact Assessment (EIA) to understand any potential impacts of our proposals. The report from this assessment, called an Environmental Statement, will be submitted as part of our planning application. We will also submit a Construction Management Plan which will set out how we manage and mitigate impacts during construction.

Submarine cabling

Submarine cables are installed using large specialist vessels which are able to transport and lay long sections of cables (up to 100 km in length). The cables will be buried in the seabed. Some cable joints will need to be made at sea during the installation process.

Onshore cabling

The DC and AC underground cables will be installed using a variety of methods including open cut installation and trenchless techniques, which could include horizontal directional drilling (HDD) depending upon the ground conditions and obstacles along the cable routes. Cable joints will need to be made at sections along the route during installation. These will not be visible once the work is completed.

Converter station

Construction of the converter station will depend on the final design and technology used. The site preparation, ground works and construction of buildings will be followed by the installation of electrical equipment.

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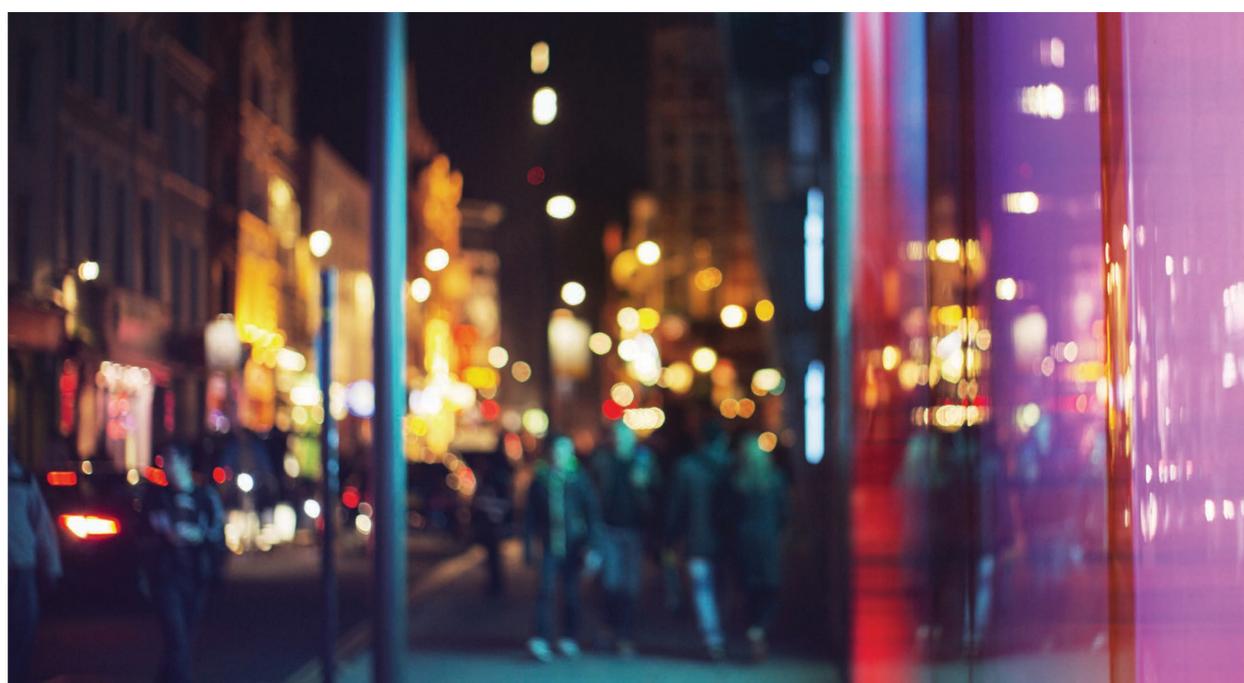
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Viking Link and Brexit



Following the result of the EU referendum on 23 June 2016 we are aware that you will have questions on how the outcome will affect the development of the Viking Link project.

National Grid and its partner, Energinet.dk, believe there is a strong business case for Viking Link. The project, which will be jointly funded by National Grid and Energinet.dk, has been granted regulatory approval by Ofgem, which closely scrutinises costs and benefits in the interests of GB consumers.

The outcome of the referendum does not influence the decision and proposals to build and operate Viking Link between the UK and Denmark. We remain fully committed to the project as it serves to deliver significant benefits by ensuring a more secure, sustainable and affordable source of electricity supply to the GB consumer.

A message from National Grid

National Grid believes energy must be a key priority area as the Government begins negotiations on how Britain's exit from the European Union (EU) will be handled.

While this result means that Britain will leave the EU, it is important that we retain access to the European Internal Energy Market (IEM), which provides stability for energy companies and helps keep household bills down.

Some non-EU countries are members of this market and we will be working closely with the Government and others in the energy sector to ensure we continue to enjoy the advantages of access. UK energy security depends on gas and electricity from the IEM and it is essential therefore that we take no risks with that.

Much will now depend on the upcoming negotiations, which is why the issue of energy needs to be treated with the highest importance by the Government as the negotiations on Britain's exit begin. We do not expect any major impact on the company as a result of the vote and we are well-placed to deal with any short-term uncertainty while those discussions take place.

We will continue to work closely with our European partners to ensure security of supply while the negotiations take place.



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Thank you

Thank you for taking the time to visit today's public participation event. We hope you found it useful and we look forward to seeing you during our second phase of consultation. If you have any immediate questions one of our project team here today will be happy to speak with you. If you have any questions outside of this event you can contact the project community relations team using the information below.

Next steps

We are holding a number of similar public participation events in locations across the cable route search area along with an event for marine and fishing stakeholders in Grimsby.

Phase 2 consultation

Later in the summer, we will consult with local communities to hear their views before identifying the preferred DC and AC cable route corridor options. In addition, residents in the vicinity of the preferred converter station site will be consulted on the building design.

We will notify you before the start of consultation and inform you of dates, times and locations for public exhibitions and where you can find all the relevant information.

In the meantime, if you have any questions please speak to a member of the team today or contact our community relations team using the information below.

Contact us



You can find out more information by:



calling our freephone number:
0800 731 0561



Sending an email to:
vikinglink@communityrelations.co.uk



Writing to our freepost address at:
FREEPOST VIKING LINK



Visiting our website at:
www.viking-link.com

If you, or someone you know, would like information in Braille, audio, large print or another language, please call us on the freephone number above.



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Project timeline

We aim to be operational by 2022



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