

LIONLINK PROJECT Frequently Asked Questions (FAQs)

March 2024



LIONLINK

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About LionLink

Q1. What is LionLink?

National Grid Ventures (NGV) is developing plans to build a new subsea electricity cable (known as an interconnector) between Great Britain and the Netherlands. The project, called LionLink, will play an important role in reducing the UK's reliance on fossil fuels and supporting the UK government's objectives to create a secure, reliable and affordable energy supply for UK households.

Q2. Why is LionLink needed?

LionLink will deliver a range of national benefits, including:

- the opportunity to supply up to 1.8 gigawatts (GW) of electricity – enough to power approximately 2.5 million homes.
- delivering increased interconnector capacity by 2030 towards Government targets, including the target of 18GW of interconnector capacity by 2030
- strengthening our national energy security.
- supporting the UK and Europe's climate and energy goals.
- LionLink is expected to save UK consumers almost £300 million in its first ten years of operation.
- first year total carbon emission savings equivalent to taking nearly 600,000 cars off the road.
- boosting competition in the energy market and improving the affordability of energy.

Q3. Why does LionLink have to be in East Suffolk?

We applied for a connection point for LionLink to the [National Grid ESO](#) (NGESO). The NGESO conducted an appraisal process, which involved discussions with us as the applicant, to determine the best point of connection on their network. The appraisal included an evaluation of environmental, technical, and cost factors, and it was concluded that East Suffolk was the most suitable point of connection.

In 2017, we received a connection agreement from the NGESO to link to a new substation in the Leiston location. Since then, we have been in constant communication with the NGESO during the development of the LionLink project.

Q4. Why are alternative brownfield sites, not being considered for the LionLink converter station site?

There are no suitable brownfield sites in the vicinity of Leiston where our connection agreement was granted. The proposed Friston substation is where we are assuming as per connection offer location. It also delivers onshore coordination with other projects. Delivering coordination has been a key theme from our feedback to date.

On a Bradwell connection

Several factors weigh against LionLink connecting at Bradwell, Essex . These include

significant loss of marine habitat due to the required cable crossings within European designated sites, which would require significant scouring of the seabed in order to ensure the security of the cables. Connecting Bradwell to other areas of the transmission network would also necessitate substantial onshore infrastructure works to increase the voltage, including the provision of new overhead lines.

On a Sizewell C connection

The discounting of Sizewell C was informed by discussions with EDF and SPR, and the work they had undertaken as part of their EA1N and EA2 projects. LionLink found that there were significant technical challenges with co-locating infrastructure around Sizewell C due to the operational requirements of nuclear facilities and environmental protection areas.

Q5. Where will the energy be distributed once in the grid?

Like all other energy sources in the UK, the energy brought to the UK via LionLink will be distributed across the UK by the national grid. The purpose of this project is to bolster the security of Great Britain's energy supply rather than specific areas.

Q6. Could you build all the necessary infrastructure offshore as part of an 'offshore grid'?

LionLink is an offshore alternative to generating energy that would otherwise have to be produced onshore. LionLink is an essential part of the transition to putting more infrastructure offshore and bringing offshore wind into the Grid.

Currently, there is no fully offshore solution to connecting offshore wind and/or interconnectors to the electricity grid. Putting infrastructure offshore does not remove the need for infrastructure onshore, as energy needs to be brought into the onshore national electricity network.

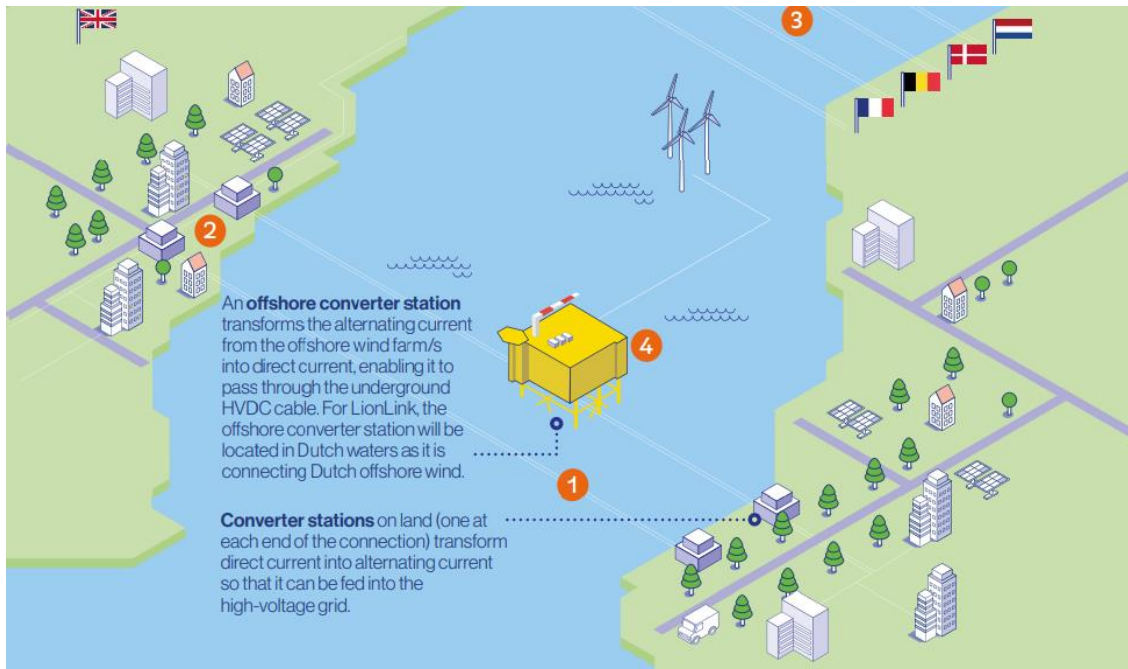
Q7. What is the project timeline?

The timeline for the project is as follows:



Interconnectors overview

Q1. What is an interconnector and how does it work?



LionLink is a proposed Offshore Hybrid Asset (OHA). OHAs are subsea electricity cables that connect the UK's electricity system to those of neighbouring countries and also connect offshore power generators – such as wind farms – to the shore. At the moment, offshore wind farms and interconnectors operate separately and connect to the shore individually. In the future, OHAs could enable offshore wind and interconnectors to work together, helping the UK to achieve its net zero target by integrating more renewable energy onto the network.

Q2. Why do we need interconnectors? What benefit do they deliver?

Interconnectors are making energy more secure, affordable and sustainable for consumers. Great Britain has experienced success from existing interconnectors which have connected energy between Great Britain, Belgium, France, Ireland and the Netherlands. The development of more interconnectors will:

- promote more affordable energy by providing access to the lowest priced energy available between the UK and neighbouring countries
- reduce the impact on coastal communities and the environment, by minimising the number of connections needed to shore and therefore the amount of infrastructure required

- increase security of supply by providing access to a more diverse pool of clean energy generation, as well as ensuring that the energy flows from where it's being generated to where it's needed most
- achieve the UK's climate targets of 50 gigawatts (GW) of offshore wind by 2030 and net zero by 2050
- support the transition to a cleaner energy system by providing more flexible capacity between the UK and neighbouring networks
- maximise the use of renewable energy generation by accelerating the development of offshore wind.

Public Consultation, Engagement and Feedback

Q1. What consultation has taken place?

To date we have held two public public consultations.

1. October - December 2022.

- the consultation provided an opportunity to view and comment on our initial siting and routing options.
- we received 234 feedback responses and had 87 attendees for our community webinar events, 8,006 website views, and 535 people attended our in-person community events. The 2022 public consultation interim report, which provides an overview of all the feedback received and how this was used to refine our project, can be read online [here](#).
- [this consultation enabled us to](#) identify an alternative landfall site at Walberswick and an alternative onshore underground cable corridor to the north of Southwold.

2. September – November 2023

- we held a second public consultation to give the public the opportunity to comment on the alternative options that were identified in response to the 2022 public consultation.
- we received 1,318 feedback responses from the community and statutory consultees, including town and parish councils and Members of Parliament. 126 people attended our community webinar events, while 1,317 people attended our in-person community events. We also had 11,853 unique views of our [website and virtual exhibition](#).

We are using the feedback from the local community and comments received from statutory consultees to improve our proposals and determine the best locations and routes for the project.

Q2. When is the next opportunity to provide feedback?

Whilst the consultation period for the project is currently closed, we welcome any feedback which you can share with the LionLink Project Team by emailing info@lionlink.nationalgrid.com

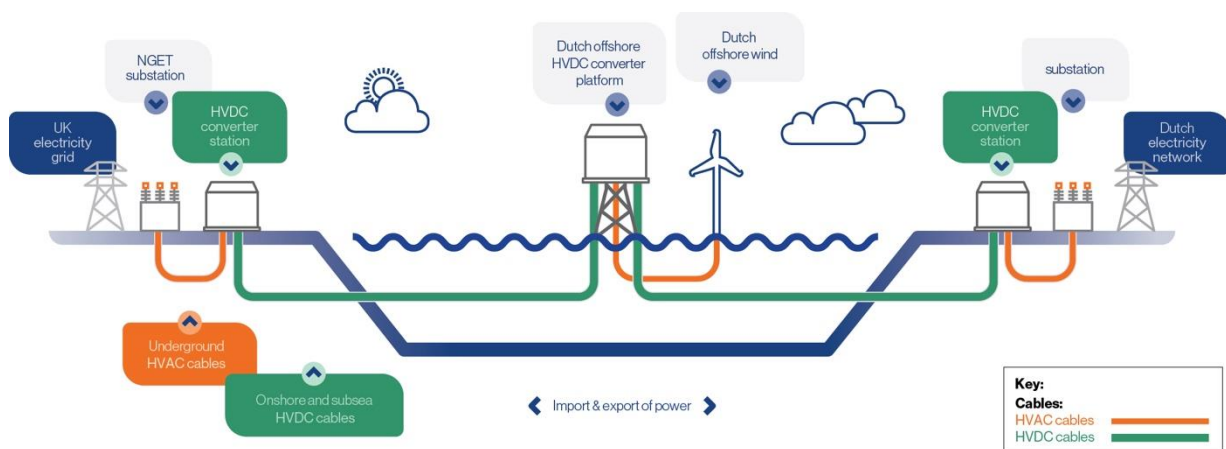
We will endeavour to answer any queries or confirm receipt of further feedback within 20 working days. There will be another round of public consultation as part of our statutory consultation in 2025.

Infrastructure

Q1. What infrastructure will be required to deliver LionLink?

LionLink will run under the sea between the Netherlands and the UK. When it reaches the UK, the cable will need to come onshore and be connected to the UK's electricity grid.

The diagram below indicates how LionLink will work, and the offshore and onshore infrastructure needed (the Exclusive Economic Zone (EEZ) represents the boundary between Dutch and British territorial waters).



Q3. What offshore infrastructure is required?

LionLink will connect Great Britain and the Netherlands via subsea cables, which will have capacity to connect to Dutch offshore wind via an offshore converter station. The offshore converter station will be in Dutch territorial waters and will be owned by our partners TenneT.

Q4. What onshore infrastructure is required?

- **landfall site** – the location where the subsea cables are brought onto the land and are connected to the onshore cables
- **underground HVDC cable corridor** - from the landfall location to the converter station
- **converter station** – the location where the electricity will be transformed from high voltage direct current (HVDC) into high voltage alternating current (HVAC), which is necessary to enable the electricity to be fed into the transmission network.
- **HVAC cable corridor** - from the converter station to the substation
- **connection to a substation** – identified to be in Friston.

Q5. Why is a converter station needed?

A converter station is required to transform the generated electricity from high voltage direct current (HVDC) into high voltage alternating current (HVAC). This is necessary to enable the electricity to be fed into the transmission network.

Q6. Why does the converter station need to be within five km of the substation?

The most efficient technical solution is to locate the converter station as close to the proposed Friston substation as possible. This reduces the length of the high voltage alternating current (HVAC) cable circuits needed to connect the proposed Friston substation and the converter station.

Longer HVAC cable routes result in increased reactive power transmission losses which can require extra equipment in the converter station to compensate these losses. A five-kilometre radius reduces the likelihood of needing this extra equipment and therefore limits the land area required for the converter station.

Q7. What will the converter station look like?

Early design works suggest that the footprint of the converter station site will cover an area of six hectares (14.8 acres), with an additional four hectares for the temporary construction service areas. This includes space for the main converter station building, which is likely to be up to 26m tall.

NGV will keep the design of the infrastructure under review as the project progresses. The final design of the converter station site will be influenced by a thorough consultation process with the local community and other stakeholders, as well as thorough collaboration with the supply chain.

Q8. What impacts are ongoing judicial reviews having on LionLink?

We are aware that the decisions on both EA1N and EA2 are currently subject to ongoing Judicial Review challenge; we continue to monitor the decision and will consider the final conclusions.

Q9. What is a landfall site?

Landfall is the point where subsea cables are brought onto the land and connected to onshore cables.

Q10. Does the project have preferred options?

Informed by the feedback received across both public consultations, the project team identified the following emerging preferences:

- Landfall F (Reydon/Southwold) with Landfall G2 (alternative Walberswick). Landfall at Dunwich and Aldeburgh were discounted due to technical constraints, including potential adverse impacts on heritage (for Dunwich) and protected European offshore designations (for Aldeburgh).
- Converter Station Site 3. Provides the greatest opportunity for colocation with Sea Link. This aligns with feedback received to the public consultations which supported opportunities for coordination.

- Cable route north of Southwold or cable route from Landfall G2. Other routes were discounted given their corresponding landfalls had been discounted.

Q11. Why has Landfall E (Aldeburgh) been removed?

Landfall E was discounted due to significant environmental and technical risks associated with the nearshore approach to the site. LionLink would approach the coast from the north after connecting with a Dutch windfarm located in the North Sea. The Aldeburgh landfall site would therefore result in the longest offshore cable route of the shortlisted options. The offshore cable route would also cross up to 11 other cable routes, all within European designated sites and likely to result in impacts on the Outer Thames Estuary Special Area of Protection, which could not be mitigated.

From an onshore perspective, the number of environmental designations in this location create further challenges requiring mitigation.

Although consultation feedback favoured coordination with other developers at landfall and converter station sites, the benefits of this at Landfall E (such as a reduction in construction traffic and sharing of materials), were not sufficient to outweigh the challenges presented from an environmental and technical perspective. Consultation feedback highlighted environmental sites and designations which would require mitigation. On balance, and when considering the offshore constraints outlined in this report, this has helped inform our decision to discount this site.

Q12. What impact will the construction process have on local communities?

We understand the concerns raised by communities regarding impacts to the environment and tourism during the temporary construction phase of the project. We will undertake an [Environmental Impact Assessment \(EIA\)](#) prior to any application being submitted. The EIA will help us establish our preferred options and rigorously assess the potential impacts to identify how we can avoid and minimise effects wherever possible, as well as restoring and offsetting potential impacts where needed.

On timings, we expect (subject to detailed designs) the following:

- Construction of the landfall site to take at least 12 months (dependent on the landfall site chosen) and will be phased with boring works taking place first, followed by cable installation and then environmental reinstatement works.
- Construction of the cable corridor to take up to four years and be delivered on a section-by-section basis.
- Construction of the converter station to take at least 3 years.

To confirm timings for works, we will consider several elements, including breeding seasons, wintering bird seasons, tourism patterns and other key considerations.

Q13. How will construction be managed?

A construction management plan will be developed to outline how works will be undertaken and what mitigations may need to be put in place. During the construction period, temporary infrastructure, such as compounds and storage areas may be necessary to facilitate construction. We expect construction at the landfill sites to last at least 12 months.

Coordination with other local projects

Q1. How does LionLink strategically align with other projects happening in East Anglia?

We are working closely with other developers in the area to explore opportunities to coordinate activities and minimise impacts on local communities and the environment.

Coordination could include aligning specific works to reduce impacts on the environment and local communities, alongside re-using materials, sharing site compounds, landscaping, and mitigation opportunities and how we invest in communities.

NGV and NGET are working collaboratively to explore opportunities to co-locate onshore infrastructure for the LionLink and Sea Link projects.

Further engineering studies and assessments are being progressed to understand if shared underground cable route corridors are possible. As the project is refined and a more detailed construction programme developed, we will explore opportunities to coordinate construction activity between LionLink, Sea Link and other developers in the local area.

Environmental impact

Q1. How will you assess and manage impacts on the environment?

We understand the community's concerns about the impact of the project on the natural environment. Reducing the environmental impact is front of mind as we plan the project, and this includes marine impacts as well as land.

NGV will undertake an Environmental Impact Assessment (EIA) prior to any application being submitted, which will cover a wide range of environmental subjects. As part of the EIA, documents will be publicly available as the project develops with the first being the scoping report in March 2024.

As the project progresses, a construction and environmental management plan will be developed. This plan will take into consideration key times of the year, to mitigate construction – the breeding season, wintering bird season and tourism patterns will all be considered among other elements. On biodiversity specifically, we have an obligation under the Environment Act 2021 to improve the environment by at least 10% compared with the situation before the development.

Q2. How will NGV approach Biodiversity Net Gain (BNG)?

NGV is committed to minimising the effects of new infrastructure, mitigating adverse effects of works, offsetting where mitigation is not practicable, and enhancing the environment around our works.

The Government is in the process of introducing 'Biodiversity Net Gain' (BNG), which is a strategy to develop land and contribute to the recovery of nature. It is a way of making sure the habitat for wildlife is in a better state than it was before development. A 10% BNG will be required for Nationally Significant Infrastructure Projects such as LionLink from 2025. We are committed to delivering at least 10% BNG for the project.

Economic Impact

Q1. How will tourism impacts be assessed?

The project will assess potential impacts on the local economy and any associated mitigation as part of the EIA report. We will produce a socio-economic report that will be submitted as part of the final application. This will be informed by engagement with communities and local businesses.

Background to National Grid Ventures and National Grid Group

Q1. Who are National Grid Ventures (NGV)?

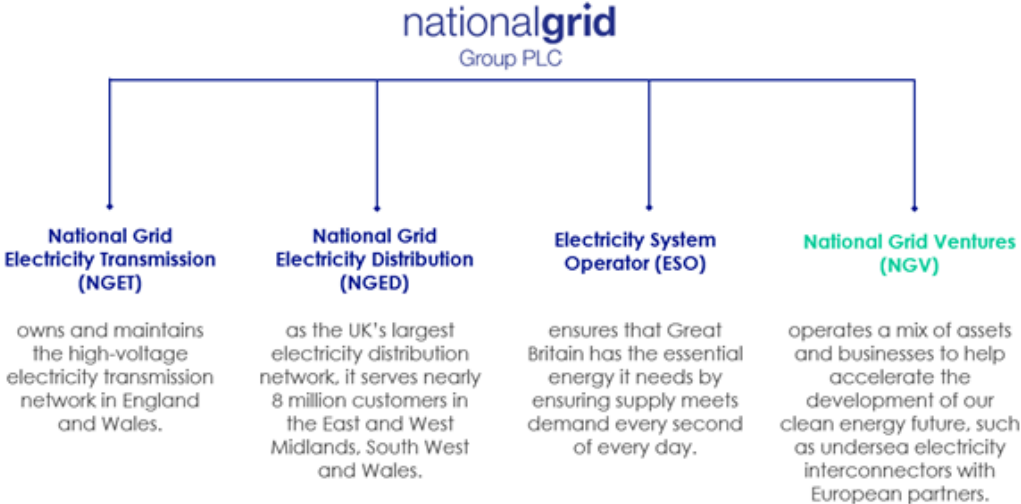
National Grid Ventures (NGV) is at the forefront of the energy transition. We operate across the UK, Europe and US, developing, operating, and investing in large-scale clean energy infrastructure. We're helping to accelerate society's drive towards net zero while maintaining security of supply today.

NGV runs separately from National Grid plc's core regulated operations. We've built a broad portfolio of businesses that work together to keep the lights on, decarbonise the economy and power a clean, fair and affordable energy future for consumers.

It is NGV who is leading on the LionLink project. NGV currently has six interconnectors in operation: [IFA](#) and [IFA2](#) to France, [Nemo Link](#) to Belgium, [BritNed](#) to the Netherlands, [North Sea Link](#) to Norway, and a new interconnector, [Viking Link](#), has recently started operation to Denmark. [IFA](#) and [IFA2](#) to France, [Nemo Link](#) to Belgium, [BritNed](#) to the Netherlands, [North Sea Link](#) to Norway, and a new interconnector, [Viking Link](#), has recently started operation to Denmark.

Q2. What is the structure of National Grid and what do all the business units do?

There are four distinct electricity business entities under the umbrella of National Grid plc, as detailed in the diagram below, all with different roles and responsibilities. NGV is a legally separate entity from National Grid Electricity Transmission plc (NGET), National Grid Electricity Operator (NGESO) and National Grid Electricity Distribution plc (NGED), which are subject to separate regulations. NGV operates and invests in energy projects, technologies, and partnerships to accelerate the development of a clean energy future.



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