SP Energy Networks

Eastern Green Link 4

Scotland is producing more clean, green energy than ever before, and we need to strengthen the transmission network so we can get it to the homes, schools and businesses that need it. One of the ways we increase capacity is by building new infrastructure to transmit more electricity securely and reliably.

Eastern Green Link 4 (EGL4) is a new High Voltage Direct Current (HVDC) electrical link that will connect Fife in Scotland with Norfolk in England.

The EGL4 project will play a key role in the fight against climate change, and the UK's transition to Net Zero. It is one of many new transmission upgrades that are planned across the UK.

We want to hear your views!

Our public consultation runs until Friday 10 May 2024.

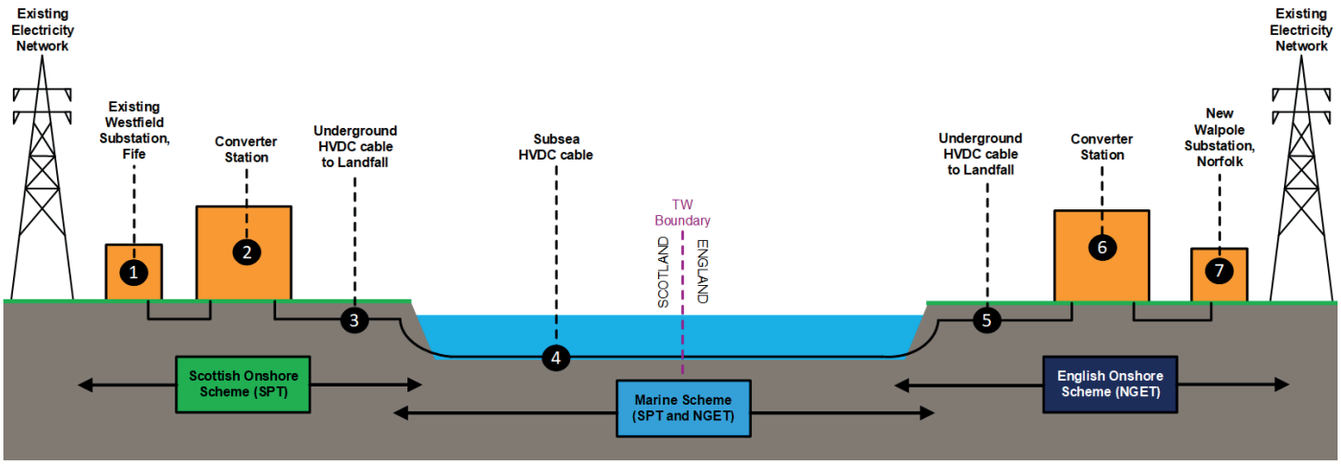
This leaflet tells you about our proposals, where to find more information, and how you can give us your views.

What is EGL4?

EGL4 is a major investment developed in partnership between SP Energy Networks and National Grid Electricity Transmission, and is made up of three parts:

- A 500km subsea High Voltage Direct Current (HVDC) cable between Kinghorn, Fife, and South Humber, Lincolnshire
- A 14km underground cable from Kinghorn to a new converter station at Westfield, near Ballingry, Fife
- A 100km underground cable from South Humber to a new converter station near Walpole, Norfolk

HVDC is the most efficient way to transmit large amounts of electricity over long distances. Converter stations are needed at each end to change the DC (direct current) electricity to and from AC (alternating current) electricity, so it's safe to use in our homes and businesses.



Why is Eastern Green Link 4 needed?

The UK and Scottish Governments are committed to increasing the use of renewable energy and have targets to achieve net-zero greenhouse gas emission by 2045 in Scotland and 2050 in the UK.

As the country shifts away from traditional forms of fuel to heat homes, charge vehicles and power businesses, there is greater need for clean electricity. By the end of this decade, the UK Government also aims for every home in the country to be powered by offshore wind and has set a 50GW offshore wind connections target by the early 2030s.

Much of the new offshore and onshore wind is in or around Scotland, and the existing electricity network does not have enough capacity to transmit all the additional clean, green energy from where it's produced to where it's needed.

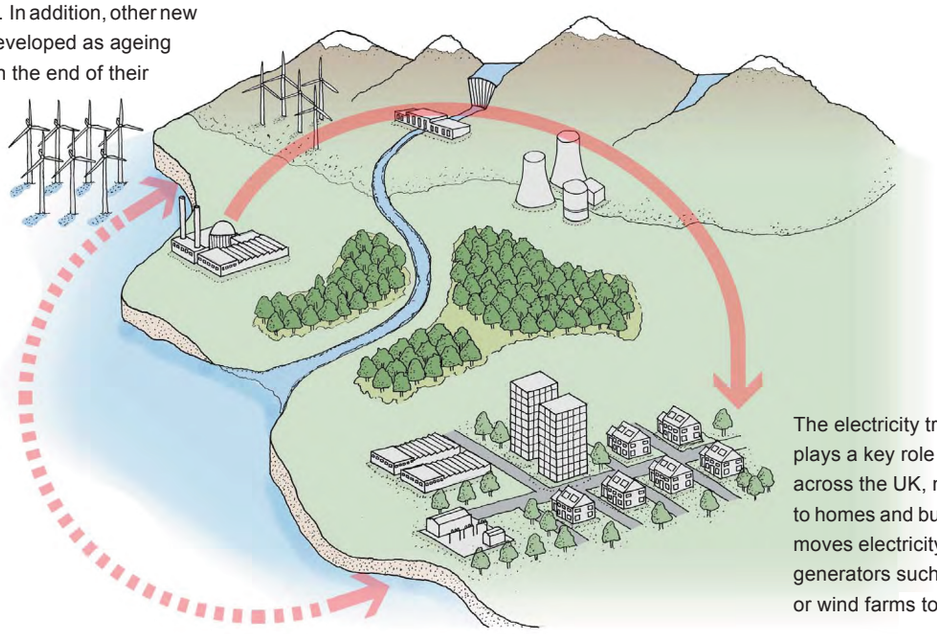
EGL4 will be able to transmit up to 2GW of clean, green renewable energy – enough to power around 1.5 million homes. It is one of four Eastern Green Link HVDC projects that will significantly increase the capacity of the electricity network between Scotland and England.

Western Link, a similar HVDC project linking Hunterston on the west coast of Scotland with Connahs Quay in North Wales, is already in operation. EGL1 and EGL2 have already been consented and are moving towards construction, and EGL3 and EGL4 (this project) are in the development and assessment stage.

HVDC: how it works

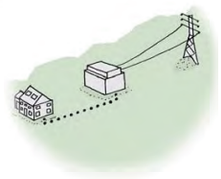
Over the next decade predicted renewable and non-renewable electricity generation will place a considerable pressure on the network and how electricity is delivered to homes and businesses.

Over the coming decade renewable energy will continue to make a major contribution to the UK energy mix. In addition, other new generation will be developed as ageing power stations reach the end of their operational lives.



The electricity transmission network plays a key role in transmitting electricity across the UK, moving it from generators to homes and businesses. The network moves electricity at high voltages from generators such as power stations or wind farms to towns and cities.

Subsea HVDC technology has a number of advantages when transmitting electricity in large volumes – it is particularly effective at the long distance transmission of large volumes of electricity.



AC electricity can have its voltage increased or decreased using transformers, making it safe to use in our homes, businesses, schools and hospitals.

But to transmit electricity over long distances it is more efficient to use HVDC, which operates at a fixed voltage, requires fewer conductors (cables or wires) and incurs less power loss than AC networks.

AC electricity is converted into HVDC electricity using specialised equipment at a converter station. The HVDC electricity can then be transmitted over long distances – hundreds of kilometres – via underground and subsea cables to a second converter station, where it is converted back to AC to flow in to the local electricity network.

By doing this, projects like EGL4 can remove 'bottlenecks' on the existing transmission network while reducing the need for more onshore power lines and associated infrastructure.

Marine cable route

Our preferred route for the subsea cables has been developed through careful environmental and technical assessment of potential route options, in consultation with Scottish shipping and fisheries organisations and environmental bodies. It takes into account protected and designated areas and infrastructure such as pipelines, cables, wrecks and military considerations. You can find detailed information and maps on our website and at our consultation events.

Public consultation

Our public consultation runs until Friday 10 May 2024

SP Energy Networks attaches great importance to the effect our work may have on the environment and local communities. We want to hear what local people think about our proposed landfall and converter station sites, and onshore and offshore cable routes, to help us develop the project in the best way. Please come along to one of our public exhibitions, where you can see our plans in more detail and ask questions of the project team.

Date	Location
Tuesday 23 April 2pm – 7pm	Benarty Centre, Flockhouse Avenue, Ballingry KY5 8JH
Wednesday 24 April 9.00am – 12.30pm	Auchtertool Village Hall, Main Street, Auchtertool KY2 5XW
Thursday 25 April 3.30pm – 7.30pm	Kinghorn Community Centre, Rossland Place, Kinghorn KY3 9SS

Project documents are available on our website, where you can also fill in an online feedback form. We can also send you a paper feedback form and a Freepost envelope so you can complete it and return it to us free of charge.

How to contact us

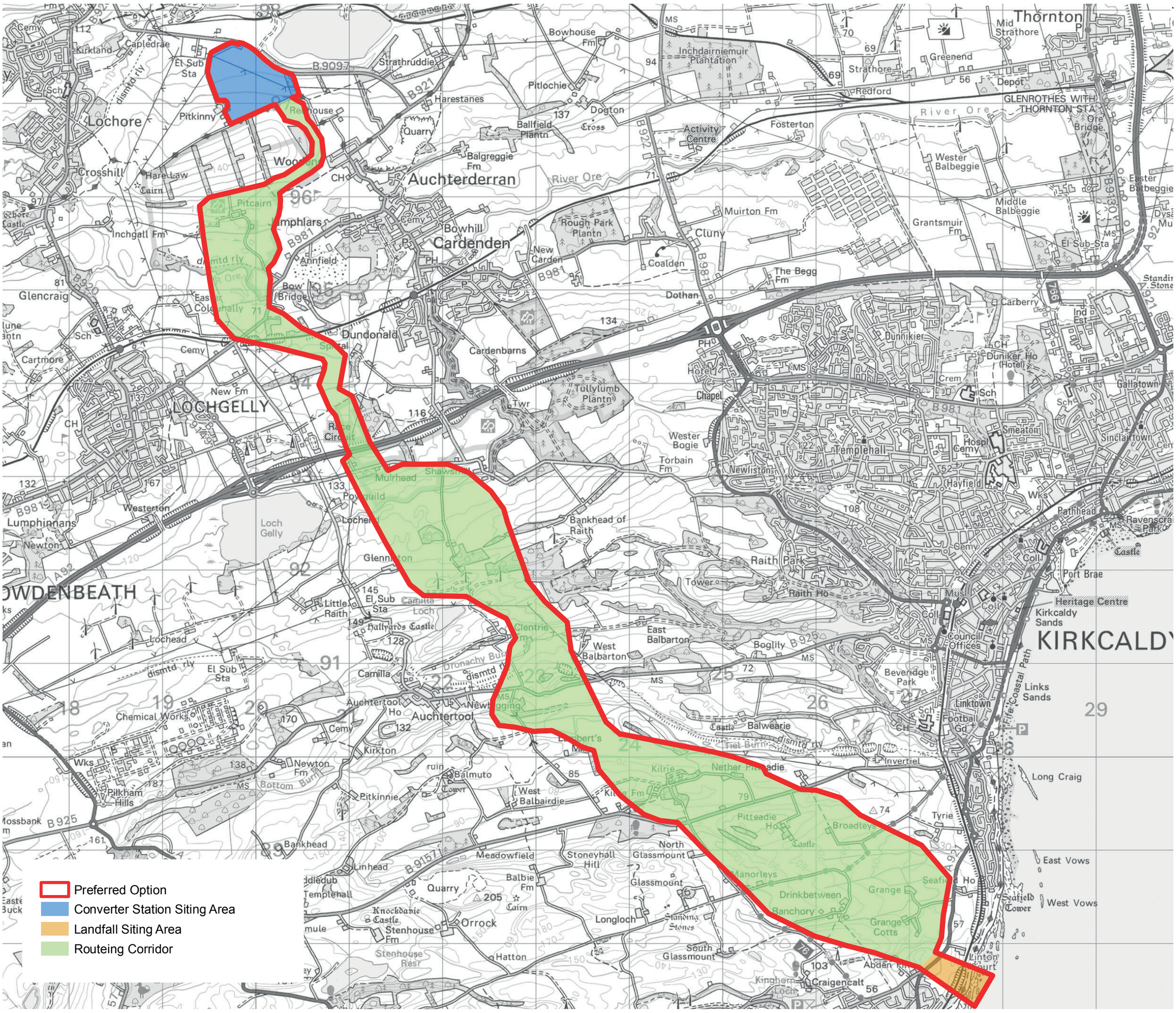
Website: **https://www.spenergynetworks.co.uk/pages/eastern_green_link_4.aspx**
Email: **egl4@communityrelations.co.uk**
Freephone: **0800 021 7890**
Freepost: **FREEPOST SPEN EGL4**

What happens next?

Following this first round of consultation we will develop a detailed design for the landfall, converter station and cable route, including locations for access routes and working areas. We will publish a report summarising the feedback received in this first round of consultation and how this has influenced our plans. We will then carry out a detailed Environmental Impact Assessment (EIA) and hold a second round of public consultation on the detailed designs.

SP Energy Networks will be applying to Fife Council for planning permission in principle (PiP) under the Town and Country Planning (Scotland) Act 1997 for the proposed converter station, and full planning permission for the DC underground cable from the Mean Low Water Springs (MLWS) at the landfall site to the converter station and for the AC underground cable from the converter station to Westfield Substation. The EIA Report will accompany the planning application to Fife Council.

At this stage, your comments are not representations to the planning authority. When we make an application for development consent in the future, you will be able to make formal representations at that stage.



Onshore work in Fife – what's required?

Converter station

We need to build a new converter station close to the existing substation at Westfield, so that AC electricity from the transmission network can be converted to HVDC for safe onward transmission via the underground and subsea cables.

The converter station will be made up of large warehouse-type buildings and outside electrical equipment. The total converter station footprint will be approximately 250m x 350m in size with buildings up to 28.5m in height, to accommodate the equipment needed. We will also need temporary construction and parking areas, and underground cables to connect the converter station to the existing substation. Our plans will include landscaping and tree-planting to help screen the site, reduce its visual effects and increase biodiversity.

Existing converter station at Blyth, Northumberland

Landfall

We are proposing to bring the subsea cables ashore at Kinghorn, south of Kirkcaldy, where they will be joined to underground cables in a buried pit. Once installation is complete, the ground will be reinstated and no permanent above-ground infrastructure will be visible.

We selected Kinghorn as the landfall site after careful appraisal of a number of potential options along the Fife coast, including at Largo Bay and Buckhaven. Bringing the cables ashore at Kinghorn allows a shorter onshore cable route to Westfield (around 14km from Kinghorn compared to around 29km from Largo Bay) and avoids centres of population, thereby minimising disturbance to local communities.

The subsea cables will be installed at the landfall site below ground using Horizontal Directional Drilling (HDD) to minimise any impact on the sensitive coastal environment and protected sites, and avoiding disturbance to the seal haul-out area to the north.

Onshore cable route

Our preferred route for the underground cables between the converter station at Westfield and the landfall point at Kinghorn is approximately 14km in length, running mainly through rural areas to the south of the A92, and on the margins of scattered settlements to the north of the A92.

The preferred route avoids designated areas including Camilla Loch SSSI, Raith Park and Beveridge Park Garden. It will cross under the A92, the Fife Circle Railway Line and watercourses using trenchless technology (such as HDD). This technology may also be used to pass safely under other features such as large areas of woodland if we cannot route around them.

We recognise that construction work can cause temporary inconvenience and disturbance, but we believe our preferred route will keep this to a minimum. Once the cables are installed the land will be reinstated and there will be no visible above-ground infrastructure.

Underground cable installation during construction