

# Electricity Cables

## Kintyre-Hunterston Link

### Overview

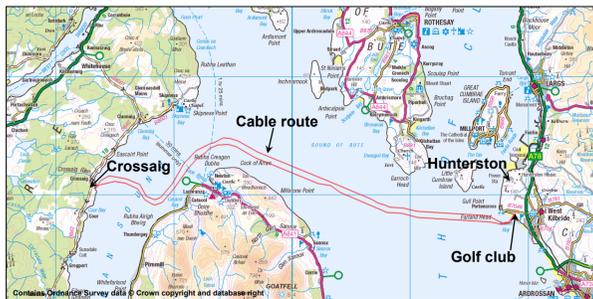
A significant volume of additional renewable generation in Kintyre is required to be connected to the main electricity grid for export and the proposed Kintyre to Hunterston reinforcement link provides the optimum technical and most economic solution towards harnessing capacity already contracted and future generation anticipated over the next decade.

This project is a joint venture of SSE Power Distribution, who hold the electricity transmission licence for the north of Scotland including the Hebrides and Kintyre, and ScottishPower Transmission, who hold the corresponding licence for the South of Scotland.

The Kintyre to Hunterston scheme links into the existing SSE 132kV overhead line (OHL) on Kintyre, runs via 41.5 km of HVAC (high voltage alternating current) subsea cable round the north of Arran to the Ayrshire coast then a further 3.5 km of underground cable to the new 400kV Substation currently being built by Scottish Power Transmission adjacent to Hunterston power station.

The Kintyre to Hunterston link involves the design and construction of a new 220/132kV GIS (gas insulated switchgear) substation at Crossaig on Kintyre and a similar installation adjacent to the existing substation at Hunterston. Once completed, the Link will be connected to the existing substation at Carradale via a new 132kV double circuit OHL which is currently being manufactured and will be erected and complete in early 2015.

Following safe testing, commissioning and energising of the new link, the existing 132kV OHL between Crossaig and Carradale will be redundant and will be taken down and the landscape reinstated to the satisfaction of landowners and key stakeholders.



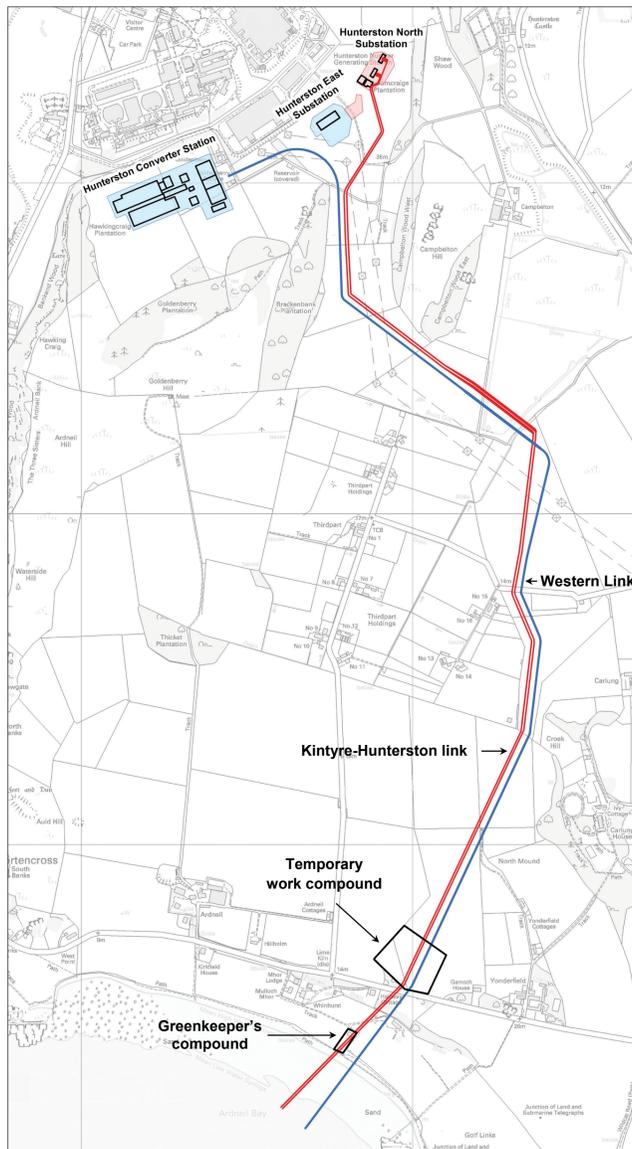
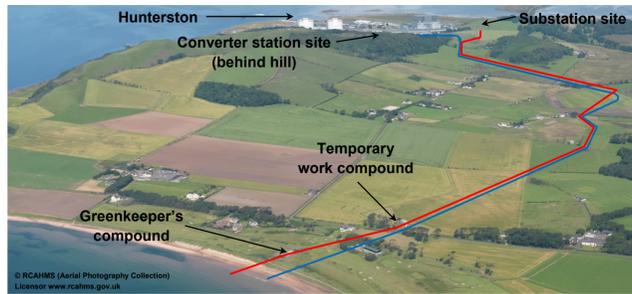
### West Kilbride Golf Club

To enable the subsea cables to be connected to the land based cables, SSE have to build a cable transition joint chamber within the confines of the old green keeper's compound (formerly Holland House). This chamber will be below ground level to accommodate the entry of cables at its north and south ends. Upon completion, the chamber will be overlaid with precast concrete beams and the surrounding ground reinstated to its original condition both for security and to protect golfers and the public. At ground level there will be cast iron covers to allow access for inspection and maintenance.

A specialist horizontal directional drilling (HDD) contractor will set up an HDD rig and associated plant within the greenkeeper's compound. It will not be necessary to remove the outer walls of the compound but the internal wall may need to be removed and later reinstated. The drilling will head approximately northwards under the golf course and Portencross Road until it reaches the fields beyond, where it will emerge into the temporary work compound.

Drilling in the seaward direction, will either be carried out by HDD or by excavating a vertical shaft lined with concrete rings and then drilling horizontally at a depth of 8-10 metres, depending on the methodology adopted by the contractor. In either case, drilling will go about 300 metres until it breaches the sea bed. This hole will be lined ready to receive the subsea cable, drawn in from a cable-laying barge anchored about 500 metres from the foreshore.

All cables will be drawn into the buried ducting without any intrusion onto the golf course fairways and will be terminated entirely within the joint chamber. During the construction it will be necessary to deliver materials and equipment and this will be planned to minimise disruption to local residents and all West Kilbride Golf Club members.



## Western Link

### Overview

ScottishPower Transmission and National Grid have come together in a joint venture to build the Western Link, a £1 billion undersea cable project which will take renewable energy from Scotland to homes and businesses in England and Wales.

The Western Link will transmit up to 2,200MW (megawatts) of direct current (DC) electricity from Scotland to England and Wales, bypassing the bottlenecks on the existing national transmission network. Because the electricity we use in our homes, schools and offices is alternating current (AC), we need a converter station at each end of the link to change the electricity from DC to AC before we can use it.

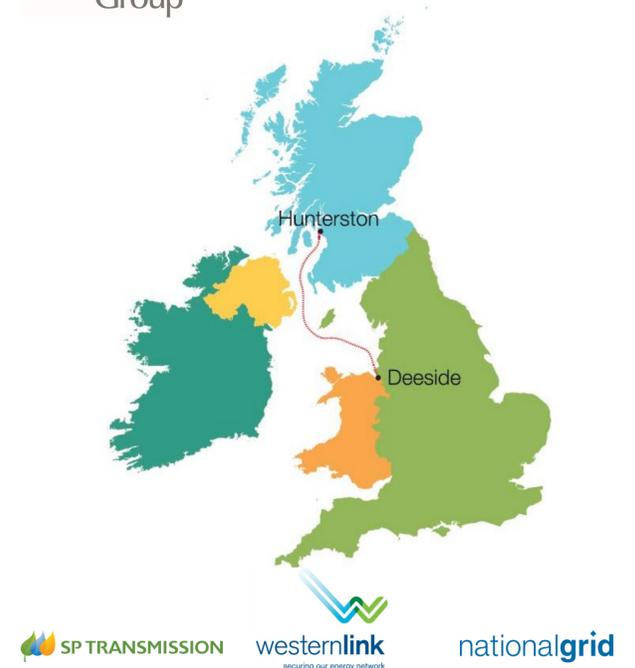
Here in Scotland, the converter station will be at Hunterston, next to the nuclear power stations. We also need to build a new electricity substation next to it, and a short length of underground AC cable to connect them.

The Western Link cable will go underground for about 4km from the new converter station to Ardnail Bay. From here, it will travel 385km under the Irish Sea to the Wirral peninsula, then underground for about 30km to reach the second converter station in Deeside, Flintshire. Cables under the River Dee will connect to National Grid's substation at Connah's Quay, from where the electricity will flow on to homes, schools and businesses.

The construction of the Western Link is being carried out by a consortium of Siemens for the converter stations and Prysmian Group for cable installation.

Prysmian Group

SIEMENS



### West Kilbride Golf Club

The Western Link project will have little direct impact on West Kilbride Golf Club. Horizontal directional drilling (HDD) will be carried out from the temporary work compound already set up on the north side of Portencross Road.

Additional equipment such as a generator, drilling rig and lighting will be installed in the compound for the drill, which will run continuously, 24 hours a day. Noise reduction measures will be installed to control the impact of the drilling work.

Drilling will be carried out in the seaward direction from this compound, under Portencross Road, straight under the golf course and out to Ardnail Bay. The subsequent operations to install a lining in the bore and to pull the cable through will also be carried out from the compound.

A cable-laying vessel will be moored offshore while the undersea cable is being pulled under the golf course.

## Feedback

If you would have any questions about either of the electricity cable projects or if you wish to make a comment, please fill in one of the comment cards and post it in the box below. Please include your phone number or email address in the space provided, so that we can reply to you.

Alternatively, you can telephone or email using the details on the right.

There is also additional information on both these projects on the partner companies' websites at the addresses shown on the right.

**Contact:** Community Relations Major Projects

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**Email:** WestKilbrideProjects@spenergynetworks.com

**Visit:** [www.spenergynetworks.com/investinginthenetwork](http://www.spenergynetworks.com/investinginthenetwork)  
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