

# Balfour Beatty and SSEN Transmission to drive nine power projects in Scotland

*To advance renewable energy grid integration in the north of Scotland, Balfour Beatty is working on the Scottish Power Project.*

COLUMBUS, OHIO, AMERICA, March 5, 2024 /EINPresswire.com/ -- On March 1, Balfour Beatty announced that it has entered into a partnership with SSEN Transmission to develop nine power projects in the north of Scotland. The projects will include the construction of overhead lines, subsea lines and substations. Balfour Beatty will provide technical support and technical solutions for the following projects in the first phase.

- The new 400kV Beauly to Blackhillock overhead line
- The new 400kV Blackhillock to Peterhead overhead line
- The new 400kV Fetteresso to Tealing overhead line
- The upgrade of the Tealing to Alyth overhead line to 400kV operation
- The upgrade of the Tealing to Westfield overhead line to 400kV operation
- The construction of a new 400kV substation near Peterhead
- The construction of a new 132kV substation near Peterhead
- The construction of a new 400kV substation near Braco
- The extension of the New Deer substation and 400kV cable connections to the New Deer 2 substation



Balfour Beatty employees implement work at project site



The main function of a substation is to convert the high-voltage electrical energy delivered to the substation into low-voltage electrical energy suitable for distribution or supply

This work is part of the SSEN Transmission Net Zero Network project. It is the first step in the 'Pathway to 2030' program.

SSEN Transmission is planning a series of infrastructure projects in the north of Scotland between now and 2030, with an estimated investment of over £20 billion.

The scheme will take on the connection and transmission of indigenous electricity, ensuring a future of energy independence.

At the same time the north of Scotland is a hub for onshore and offshore green energy. A huge role for Scotland and the UK in achieving the 2030 net zero target.

Steve Tarr, Chief Executive of Major Projects at Balfour Beatty, said:- "As the UK's largest transmission contractor, we have a key role to play in delivering the UK and Scottish Government's ambitious renewable energy targets. This early partnership is very exciting for everyone at Balfour Beatty as it will enable us to bring the knowledge we have built up and nurtured over 100 years to these ambitious schemes to improve efficiency and accelerate the construction program".

Tony Scott, SSEN Transmission's Director of Capital Development and Delivery, said, "We are delighted that Balfour Beatty is partnering with us to help deliver our 'Pathway to 2030' investment program. "

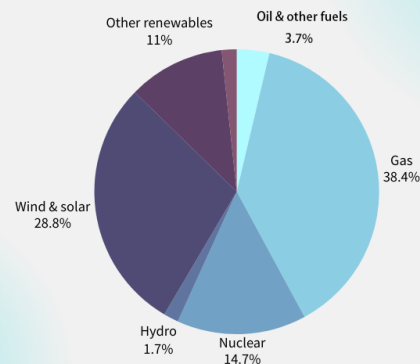


Alpine overhead lines in the north of Scotland



Major green energy sources: wind energy

### Distribution of electricity sources in the UK in 2022



Distribution of electricity output from various energy sources in the UK in 2022

## Balfour Beatty

Balfour Beatty is a company that specializes in infrastructure construction. The business covers construction services, support services, and infrastructure investment. It was named the largest construction contractor in the UK in 2021.

Viking Power Line, Whitechapel Station Expansion, LAX Passenger Rapid Transit System are some of the projects implemented by the company. It is responsible for technical support and providing solutions in this project partnership.

## SSEN Transmission

SSEN Transmission is an energy company engaged in the transmission and distribution of electricity. The company operates two distribution networks and one transmission network to provide electricity to central and northern Scotland and south central England.

The company's "Pathway to 2030" program includes the construction and upgrading of the electricity network system between the regions of the UK.

North Highland Project: 400kV substation in Spittal, [submarine cable](#) between Spittal and Peterhead.

Central Highlands Project: submarine cable in the Western Isles and 400kV overhead line and HVDC converter station in Spittal.

North East project: 400kV overhead line and substation between Bijouli and Peterhead.

East Coast projects: a submarine line from Spittal to Peterhead and a 400kV overhead line from Beaulieu.

SSEN Transmission is committed to the country's energy development and the development of infrastructure and power networks.

(Source: <https://www.ssen-transmission.co.uk/projects/2030-projects/>)

## Impact of this Collaboration on Development in Scotland

This collaboration between Balfour Beatty and SSEN Transmission in the North of Scotland aims to upgrade and expand the electricity network in the North of Scotland. Supporting the UK's goal of achieving net zero emissions.

## Technical Talent

Along with the project, Balfour Beatty will train the technical staff required for the project, passing on the company's 100 years of technical and project expertise. It will also provide permanent jobs for people living in the surrounding area.

## Energy Independence

With the outbreak of the Russia-Ukraine war, energy prices in Europe have risen dramatically. Coupled with a strong commitment to green energy, the Department for Business, Energy and Industrial Strategy (BEIS) has stated that "by 2030, 95% of the UK's electricity will be low carbon".

The UK government is vigorously developing green energy sources such as [wind, solar and nuclear](#) in its energy security strategy. It is expected to increase nuclear power generation capacity to 24GW by 2050, add about 70GW of installed solar capacity by 2035, and increase

hydrogen capacity to 10GW by 2030.

(Source:[https://www.circularonline.co.uk/news/prime-minister-sets-out-uks-plan-for-greater-energy-independence/?gad\\_source=1&gclid=EAlalQobChMI25WJ6f\\_ZhAMV0c7CBB0mEAadEAAYAiAAEgIEqfD\\_BwE](https://www.circularonline.co.uk/news/prime-minister-sets-out-uks-plan-for-greater-energy-independence/?gad_source=1&gclid=EAlalQobChMI25WJ6f_ZhAMV0c7CBB0mEAadEAAYAiAAEgIEqfD_BwE))

### Strategic Development

Scotland is rich in wind resources and its onshore and offshore wind are key to the development of renewable energy in the region, making it an important area for green energy development and energy transition in the UK.

Scotland already has 13.4GW of green energy generation capacity. A further 20GW of green energy electricity is expected to be available by 2030, representing around 50% of Scotland's total demand.

In June 2022 Scotland had 8.78GW of onshore electricity capacity and 1.9GW of offshore wind. This is expected to increase to 20GW of onshore wind by 2030 and 8-11GW of offshore wind.

(Source:<https://www.gov.scot/publications/scotlands-energy-strategy-transition-plan-ministerial-statement/>)

### The Role of Long Distance Overhead Transmission

The north of Scotland is characterized by highland mountains and a harsh climate. In this project, overhead lines are used to pass through various parts of the north of Scotland. When the power is output from the power station, it is boosted and a transformer generates a high voltage of 400,000 volts. This reduces power losses over long distances.

For safety reasons, high voltage power is usually transmitted via overhead circuits, with cables set 36 meters in the air. Overhead circuits not only have a lower cost, but can cross rivers, mountains, and railroads.

### Use of Transmission Towers

Transmission towers provide support for long distance overhead lines. High voltage electricity is transmitted from power stations through overhead cables to residential, industrial, and commercial areas. In addition to transmission towers providing support for overhead cables. There are also tension towers and angle towers that can adjust power lines for the grid.

In order to avoid the cable to conduct current to the transmission tower during the transmission process, insulated brackets made of ceramic or tempered glass will be used at the top of the tower. The insulated bracket separates the cable from the transmission tower to avoid the transmission tower carrying current.

### Aerial Cable Developments and Challenges

The UK has a 24,000km network of overhead cables. Of this there are 4,500 miles of overhead lines in England and Wales transmitting high voltage electricity at 275kV or 400kV, which is distributed to the regions via substations. With the global trend towards green energy, the grid

system is incorporating more green energy into the grid.

Lydia Ogilvie, Director of Operations at National Grid UK, said, "To meet the growing demand for electricity and achieve net-zero emissions, our network needs to evolve, but at the same time we are constantly looking for ways to expand our existing capacity. infrastructure."

Green energy is making up a growing share of the electricity demand mix, and new power lines are being built. Aerial cables, as a low-cost and efficient method of transmission It is one of the primary methods of choice in renewable energy projects.

(Source:<https://innovation.ukpowernetworks.co.uk/projects/high-voltage-overhead-line-assessment>)

### Green Energy Brings New Opportunities

The transition from conventional to green energy requires the construction or upgrading of power infrastructure. Combining green energy with overhead cable networks has multiple advantages.

From large-scale centralized solar power plants in remote areas, to powering remote villages. Aerial cables create opportunities for viable green energy development. Large-scale centralized solar plants in remote areas can be efficiently connected to the grid via overhead cables.

### ZMS's View on Accelerating Green Energy Integration in the UK

With the global energy transition, the need for green energy development is accelerating. The UK's energy disadvantages are expected to be addressed as green energy development progresses.

### Accelerating Green Energy Grid Integration

The UK government has been promoting the development of green energy and has designated program targets for net emissions in 2030 and 2050. The government encourages businesses and individuals to install green energy facilities and use green energy.

### Obstacles to Green Energy Grid Integration in the UK

The UK power facilities were built earlier and have limited capacity. At the same time, green energy is unstable and power output fluctuates greatly, traditional grid lines are not adapted to such changes and it may be difficult to achieve stable power supply. Green energy facilities are usually located in harsh or remote areas such as mountains, sea and deserts. Electricity facilities need to be rebuilt to connect to the grid.

### Grid Integration Technology Development

With the application of smart grid technology, individual grid lines can be monitored in real time. The power distribution structure is optimized to achieve a stable and reliable power supply. At the same time, the development of energy storage technology can effectively reduce the problem of green energy fluctuations. The utilization efficiency of electricity is improved through energy storage technology.

In conclusion, green energy grid integration in the UK is the key to energy transition. Through

policy, new facility construction, technological innovation and other multi-directional joint promotion of green energy development, to provide favorable support for energy transition.

ZMS Cable

ZMS Cable

+86 371 6782 9333

[email us here](#)

Visit us on social media:

[Facebook](#)

[Twitter](#)

[LinkedIn](#)

[Instagram](#)

[YouTube](#)

---

This press release can be viewed online at: <https://www.einpresswire.com/article/693380426>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2024 Newsmatics Inc. All Right Reserved.