

# Blyth Offshore Demonstrator presentations and Q&A sessions

To provide full details of the new wind farm and to answer any questions from members of the local public, EDF Energy Renewables is hosting two presentation events.

Blyth Workspace, Commissioners Quay

Tuesday, 20th June, 5.00pm - 6.30pm

Thursday, 29th June, 5.00pm - 6.30pm

The available capacity for the above events is limited and anyone interested in attending is asked to ring 0191 233 1300 or e mail enquiries@mhwr.co.uk in advance of the events to confirm their attendance.

ORE Catapult, Charles Parsons Technology Centre, High Quay, Blyth

Thursday, 22nd June, 5.00pm - 6.30pm

Additional future presentations may be arranged if local interest exceeds the available capacity of the venue.

## Blyth Offshore Demonstrator fact file:



<sup>1</sup> 41.5MW installed x 0.369 offshore average load factor\* x 8760 hours, divided by 3.938MWh annual domestic energy consumption per home\*\*

<sup>2</sup> 41.5MW installed x 0.369 offshore average load factor\* x 8760 hours x 430 grammes of CO<sub>2</sub> saved per kilowatt hour\*\*\*, divided by 1000 to correct for units

\*Digest of United Kingdom energy statistics 2016, DBEIS, July 2016. \*\* Energy consumption in the UK, DBEIS, November 2016.

\*\*\*A comparison of emissions factors for electricity generation, DECC, 16th July 2013.



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# Blyth Offshore Demonstrator Wind Farm



# Project overview

EDF Energy Renewables is developing the Blyth Offshore Demonstrator Wind Farm project after taking over responsibility for the scheme from Narec (now ORE Catapult) in October 2014.

The first part of the Blyth project comprises five wind turbines located around 6km off the coast at a water depth of 38 metres. The project will have a total generating capacity of 41.5MW - enough low carbon electricity to power approximately 34,000 homes.

The Blyth Offshore Demonstrator is owned by EDF Energies Nouvelles, a subsidiary of EDF Group, and is being constructed by EDF Energy Renewables, a 50:50 joint venture between EDF Energies Nouvelles and the UK company, EDF Energy.

Although the scheme has consent for up to 15 turbines, there are currently no immediate plans to develop the other arrays, but the option to deliver them at some future stage will be kept under review.

Marine and subsea site investigation work has been carried out off the coast of Blyth ahead of the offshore construction works starting in spring 2017 and continuing over the summer months.

## Project programme:

### Work undertaken/ongoing:

- Manufacturing of wind turbine generators
- Fabrication of gravity based foundations (GBFs) in Neptune dry dock
- Construction of onshore substation on Blyth power station site
- Marine and sea bed investigations and sea bed preparations

### Quarter 3 2017

- GBFs floated out and submerged onto the sea bed (expected July start)
- Energise onshore substation
- Offshore installation of wind turbines onto GBFs
- Commissioning of entire offshore cabling system (expected August start)

### Quarter 4 2017

- First power from offshore turbines
- Handover to operations team



# New and innovative

The Blyth Offshore Demonstrator project incorporates a number of new and innovative features as part of its role in testing and proving new and emerging offshore installation methods and technologies.



## Wind turbine generators

The scheme will incorporate five MHI Vestas V164 8.0 MW turbines. These will incorporate a power mode upgrading to 8.3MW - the largest currently available. The turbine tip height of the rotor blades will be approximately 191.5 metres from the sea level.

The turbines will be installed using a specially designed jack-up vessel and work is expected to begin in Q3 2017. Commissioning of the five turbines is expected to take two months.

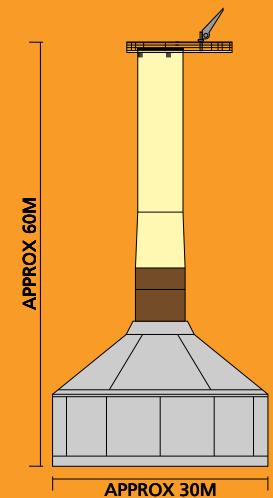
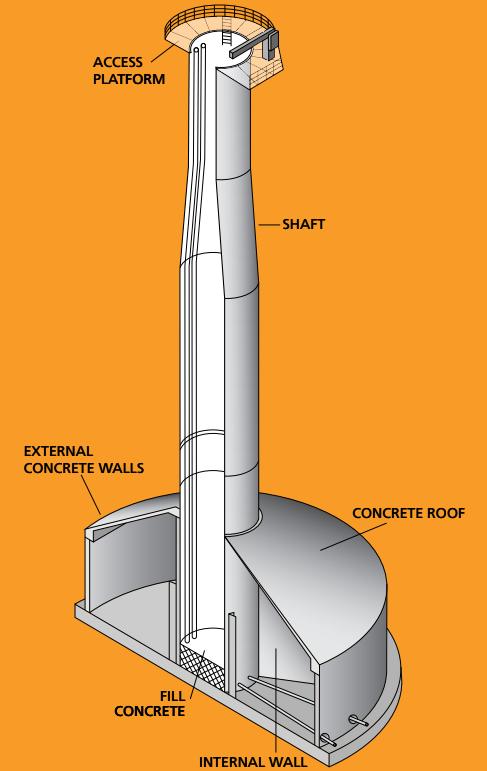


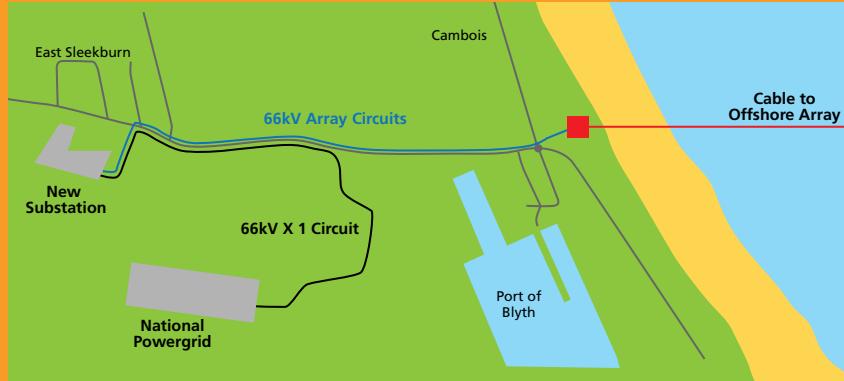
## Gravity based foundations

The Blyth Offshore Demonstrator project will utilise a 'float and submerge' gravity based foundation (GBF) design method - the first time this has been used for the installation of offshore wind turbines.

The gravity based foundations are being constructed by Royal BAM Group in the Neptune dry dock on the River Tyne, Wallsend. These concrete and steel structures will be floated into position at sea and submerged onto the seabed to provide the support structures that act as the foundations for the installation of the turbine towers.

Each gravity based foundation includes over 1,800m<sup>3</sup> of concrete and will weigh over 15,000 tonnes when fully installed on the seabed. The structures have a total height of approximately 60 metres from the base to the access platform.





## Connectivity

Blyth Offshore Demonstrator will be the first offshore wind project to use 66kV rated inter array and export cables to connect the turbines to the new onshore substation being built by Balfour Beatty on part of the site of the former Blyth power station.

The substation will be connected to the National Grid distribution network via the nearby Northern Powergrid substation during Quarter 2 2017, ahead of power being generated from the turbines later in the year.

Around 11km of buried offshore cables will connect the turbines and bring the electricity onshore, where a further 1.5km of onshore cable will link to the substation.

## Operations & maintenance

When construction is complete and the wind farm is fully operational, a dedicated Operations and Maintenance facility will be established in the Port of Blyth. This facility will incorporate an office, stores and pontoon for vessel berthing to enable ongoing electrical maintenance and inspection activities to be carried out.

## Your questions answered

### When was the project consented?

The Blyth project was originally taken through the planning and marine licencing process by Narec (now ORE Catapult) and was approved in October 2013. As part of the original application for consent for the scheme, a comprehensive Environmental Impact Assessment was carried out by former owners NAREC. EDF Energy Renewables (EDF ER) acquired the rights to develop the Blyth Offshore Demonstrator Wind Farm project near the port of Blyth in October 2014.

### How are you monitoring the environmental impacts?

The Environmental Impact Assessment (EIA) carried out by former project owner NAREC included extensive site studies on marine ecology, birdlife, landscapes and seascape, commercial fishing and other environmental matters. Environmental monitoring will continue at the site post-construction. This is available to view at <http://www.edf-er.com/OurProjects/Proposed/BlythOffshore/ProjectDocuments.aspx>

In 2015 EDF Energy Renewables commissioned Newcastle University to install C-pod devices at the site to monitor the vocalisations of some marine mammal groups. These devices tell us more about what mammals are doing in the area and also provide information on the relative occurrence and distribution of porpoises and dolphins so that we can monitor the area. The devices will remain at the site until 2018.

### What will be the impact of the wind farm on fishing activities?

A Fisheries Working Group has also been established to bring together representatives of the local fishing community and the project. The group provides a forum for engagement so that any concerns can be raised and any necessary arrangements made to minimise any impacts the construction and operation of the wind farm might have on local commercial fishing activities.

### How will the new wind farm benefit the local community?

As a responsible developer and operator of many wind farms around the country, EDF Energy Renewables is committed to establishing and maintaining meaningful engagement with local communities.

To demonstrate this commitment, the new Blyth Offshore Demonstrator Community Fund will be established to support local groups and charitable activities in the area. The fund is being set up by EDF ER Asset Management and will be in place when the wind farm becomes operational. More details will be provided ahead of its introduction.