



Facts and Figures

- Wind turbine type (Vestas) V90/3.0 MW
- Total output 90 MW
- Expected average annual output 305,000 MWh
- Rotor diameter 90 m
- Hub height 75 m
- Weight, blade 7 tonne
- Weight, nacelle 91 tonne
- Weight, tower 153 tonne
- Total weight per wind turbine 765-845 tonne
- Cut-in wind speed 4 m/s
- Full power output from 14 m/s
- Cut-out wind speed 25 m/s
- Mean wind speed at 75 metres' height 9 m/s
- Depth of water 15 – 20 m
- Distance from shore 7.5 km
- Distance between wind turbines 500 m (750 m between rows)
- Wind farm site 10 km²



Electrical island in the Irish Sea:
Barrow Offshore Substation
(Photos courtesy BOW)

A Wind Farm in the East Irish Sea

VACUTAP® for Barrow Offshore Substation

An outstanding product for an outstanding project: A VACUTAP® VR was the first choice for Barrow Offshore Wind Farm (BOW). The generation of the first green electricity from the 90 MW wind farm became possible with the commissioning of UK's first offshore substation and with the completion of the first eight turbines. This 480 tonne substation transforms the power generated from the wind turbines up to 132 kV for transmission to the mainland.

The British and Danish energy groups Centrica and DONG are developing the

wind farm in the East Irish Sea approximately 7 km southwest of Walney Island, near Barrow-in-Furness.

The wind farm will comprise 30 modern, efficient, wind turbines, each capable of producing 3 MW of electricity, delivering power to the existing grid system at Heysham via buried subsea and onshore cables. When complete, anticipated annual production will be 305 GWh, which is capable of supplying around 65,000 homes. This figure is based on average wind availability and efficiency ratings of the wind turbines.

Electrical Island

BOW's rectangular site will cover an area of approximately ten square kilometres around 7 km from Walney Island and the farm will have its own offshore substation. It will consist of a total of 30 turbines in four rows, two with seven turbines and two with eight. The turbines will be spaced 500 metres apart. The rows will be spaced 750 metres apart.

Centrica's subsidiary British Gas will take all of the electricity produced by the wind farm under a long-term power purchase agreement. British Gas is the UK's biggest household electricity supplier with around 6 million customers.

Centrica and DONG will keep local people informed about the development plans and timescales, as more information becomes available, through media announcements and exhibitions. —

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