



Project Profile: Bowbeat, Scotland

Project name:	Bowbeat
Owner:	E.ON Renewables Ltd.
Power utility:	E.ON Renewables Ltd.
Installed capacity:	31,2 MW
Wind turbine type:	N60/1300 kW
Tower height and type:	46 m. tubular tower
Number of wind turbines:	24
Wind speed:	9.5 m/s
Site:	The Bowbeat wind farm is located in the Moorfoot Hills in the Scottish Borders, 7 km north-east of Peebles and approximately 25 km south of Edinburgh
Site description:	The site is on a ridge of high ground at a height of 600 metres above sea level, on private land, and adjacent to an area of commercial forestry
Wind turbine siting:	The turbines are installed on a hill, but are not visible from nearby communities.
Building Period:	March 2002 – June 2002
Grid connection:	September 2002
Extent of delivery:	The site is managed by the Natural Power Company, with turbine maintenance activities being performed by Nordex UK Ltd, who have established a service centre in the Scottish Borders, to assist with this activity.
Calculated annual power output:	100.000.000 kWh
Maintenance:	Nordex UK Ltd.
Warranty period:	5 years

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The Bowbeat wind farm comprises 24 N60 wind turbines with a nominal output of 1,300 kilowatts each and a total installed capacity of over 31MW. The customer and operator of the wind farm is E.ON Renewables Ltd (formerly Powergen Renewables), Coventry.

The Bowbeat wind farm is located in the Moorfoot Hills in the Scottish Borders, 7 km north-east of Peebles and approximately 25 km south of Edinburgh. The site is on a ridge of high ground at a height of 600 metres above sea level, on private land, and adjacent to an area of commercial forestry. The average wind speed at the site is approximately 9.5 metres per second, making the site an excellent location for a wind farm.

The Nordex N60 turbines, with a hub height of 46 metres and a rotor diameter of 60 metres, generate a total of 100 GWh of clean electricity per annum. This means that the Bowbeat wind farm produces enough electricity to power approximately 22,500 homes.

The long-term feeding in of electricity into the public grid is guaranteed within the framework of the SRO (Scottish Renewable Obligation) programme. The acceptance of the people and the municipality is due not least to the fact that the energy generated from the 24 wind turbines will reduce annual carbon dioxide (CO₂) emissions by up to 80,000 tonnes.

The Bowbeat site was originally identified as a potential wind farm location by the Natural Power Company, who applied for two Scottish Renewables Order (SRO) two power purchase contracts for the site - one for turbines to be installed at Emly Bank (to the east of the site), and the other for turbines on Roughside Hill (on the west of the site). Powergen Renewables then purchased the project from them, in order to develop and operate it.

The planning consent process for the wind farm involved the submission of a detailed environmental impact report, which included an assessment of the visibility of the wind farm from the surrounding area. This assessment demonstrated that the surrounding terrain would, broadly speaking, obscure views of the turbines from nearby towns; with close views of the wind farm being obtained mainly from nearby hilltops, and more distant views being obtained to the north of the site. The environmental impact report also included an assessment of the effects of the wind farm upon local plant and animal life. After planning consent had been approved for the project, a more detailed agreement was reached between the developers and the local authority, to ensure that construction works would be conducted at the site in a manner that would protect local ecology and wildlife as far as was practicable.

The site is managed by the Natural Power Company, with turbine maintenance activities being performed by Nordex UK Ltd, who have established a service centre in the Scottish Borders, to assist with this activity. Remote monitoring and control of the turbines is possible, with daily monitoring of the wind farm performance being carried out from E.ON Renewables' Coventry office, and also by the Natural Power Company and Nordex.

Site inspections are conducted regularly, and the turbines are serviced twice annually. A small crane within each turbine nacelle can be used to lift small loads into the nacelles. A ladder within each turbine tower allows personnel to climb up to the nacelle at the top of the tower: with a vertical safety wire provided to prevent falls, and platforms providing stopping points to ease the climb.

