

Cornwall's first smart-grid connected wind turbine

Transforming the energy sector is an essential part of Cornwall Council's response to tackling the climate emergency to help Cornwall become carbon neutral by 2030.

Currently Cornwall generates around 37% of electricity from renewables, up from around 6% in 2009.

Cornwall Council have installed a 2.3 megawatt (MW) smart-grid wind turbine that is creating enough green energy to power over 1,400 Cornish homes a year and helping to cut carbon emissions.

The smart grid-connected turbine will help Cornwall better manage its energy supply and reduce Cornwall's greenhouse gas emissions by more than 3,300 tonnes a year over the next two decades.



Cornwall Council has been innovative in its approach to renewable energy over the last two decades.

With rotor blades spanning 40m in length, the turbine at Ventonteague, is the first to be built in Cornwall since 2016. It is the only one wind turbine to have been installed in the South West in 2020.

The wind turbine is part of an EU-funded trial and forms part of energy company Centrica's innovative Cornwall Local Energy Market (CLEM) which aims to help increase the amount of renewable energy that can be deployed by managing the electricity network more efficiently.

This turbine is the first in the UK to demonstrate the concept of making small adjustments to the output in order to help smooth peaks and troughs in electricity supply and demand on the grid. Such flexibility will be incredibly important as society electrifies transport and heating, allowing us to rely more heavily on zero carbon sources of energy in the process.

Cornwall Council owns and operates the turbine, with Centrica responsible for constructing and commissioning the infrastructure that connects the turbine to the grid and the Cornwall Local Energy Market.

To watch a video of the BBC Spotlight coverage of the smart-grid wind turbine please visit: <https://vimeo.com/444819303>

For a video of the rotary blades being installed at the Ventonteague wind turbine please visit: <https://vimeo.com/433933721>

More information

The site is less than half a mile from the existing 20MW Carland Cross wind farm.

The new wind turbine is part of an EU-funded trial and forms part of the innovative Cornwall Local Energy Market (CLEM) which aims to help increase the amount of renewable energy that can be deployed by managing the electricity network more efficiently.

Cornwall Council made a £3 million commercial investment into the wind turbine and will own and operate it once constructed.

Centrica contributed £1 million in funding to the project and is responsible for constructing and commissioning the infrastructure that will connect the turbine to the grid and the Cornwall Local Energy Market. For more information about CLEM visit: <https://www.centrica.com/innovation/cornwall-local-energy-market>

The project brings Cornish homes and businesses together via a fully automated online flexible energy market platform. The platform allows network operators, the organisations that run the electricity distribution and transmission networks, to improve the way the grid works by buying energy flexibility from local homes and businesses, helping to balance both grid demand and capacity.

Launched in December 2016, the Local Energy Market (LEM) programme is receiving £11.5 million support from the European Regional Development Fund (ERDF), in a collaboration between Centrica, Western Power Distribution (WPD), N-SIDE, Imperial College, the University of Exeter and National Grid ESO.

Other projects

Cornwall Council is also a key investor in two, pioneering geothermal heat and power projects at the Eden Project and at United Downs near Redruth and it was also the first local authority to develop its own solar farm.

The Cornwall Local Energy Market is installing one of Cornwall's largest battery storage units on premises owned by Wave Hub Limited in Hayle. The 1MW battery will provide energy resilience to the Wave Hub site and the local grid.

The partnership between Centrica and Cornwall Council is a great example of how the private and public sectors can work together to help tackle climate change.

Wave Hub Limited, which is solely owned by Cornwall Council, will own the battery storage system once in place, with Centrica responsible for the funding, construction and operation. Commissioning is due next month.

Wave Hub Limited exists to help wave energy technologies and offshore wind developers from around the world test in open sea conditions and provides some of the best conditions in Europe.