October was 'bumper' month for Scotland's renewables

7 November 2014, by Nancy Owano

The Shepherds Flat Wind Farm is an 845 MW wind farm in the U.S. state of Oregon. Credit: Steve Wilson / Wikipedia.

Any way you look at it— the solar PV panels, the solar hot water panels, the wind turbines—Scotland turned out to have a bumper month for renewables in October. Wind turbines generated an estimated 982,842MWh of electricity, enough to power 3,045,000 homes in the UK, equivalent to 126 percent of electricity needs of every home in Scotland. Sunshine? For those homes fitted with solar PV panels, there was enough sun to meet an estimated 46 percent of electricity needs of an average home, for example, in Edinburgh. For those with solar hot water panels, there was enough sunshine for an estimated 41 percent of hot water needs of an average home in Edinburgh. WWF Scotland's director Lang Banks said:"While nuclear power plants were being forced to shut because of cracks, Scotland's wind and sunshine were quietly and cleanly helping to keep the lights on in homes across the country." Banks called it a "bumper month" for Scotland's renewables.

For households in the UK, a solar PV system tends to be mounted onto the structure of a building, often but not exclusively, a roof. Individual PV cells usually comprise layers of doped crystalline silicon, sandwiched beneath glass to create a photodiode. These cells are assembled into panels, linked together to form larger arrays. A solar thermal system uses solar absorber panels, also usually installed on the roof, to absorb the sun's radiant heat to heat hot water. The panels have a network of pipes inside them containing water and antifreeze. The liquid is heated by the sun and pumped from the panel to a heat exchanger coiled inside the hot-water cylinder of the property. The mixture of water and antifreeze never comes into contact with the water in the tank. For UK residential properties, solar hot water systems are designed to work in conjunction with another water heating system, such as gas, oil or biomass boiler.

The World Wildlife Fund (now simply called the WWF), published the figures earlier this week. The data came from WeatherEnergy, which is part of the European EnergizAIR project. The project has partners in ten European countries. The WeatherEnergy website is updated daily, providing information on how much the average UK household photovoltaic and solar thermal system could have provided the average household the previous week. It also indicates how many homes could have been powered by the capacity of the UK's existing wind turbines.

A report in The Guardian earlier this year said that Scotland has 10 percent of the UK population but a third of its renewable energy.

As for wind power, Scotland is the windiest country in Europe. Scotland's Whitelee Windfarm is the UK's largest onshore windfarm, 20 minutes from central Glasgow, with 215 turbines that generate up to 539 megawatts of electricity, enough to power 298,837 homes per year based on the expected average capacity factor of 27 percent and an average annual domestic electricity usage of 4,266kWh.

More information:
scotland.wwf.org.uk/what_we_do …
world/index.cfm?7365

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