

Clue: A major city



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## Europe's biggest wind farm switches on

Portugal reinforces its reputation as a renewables champion with 120 new windmills

**Giles Tremlett**

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Europe's biggest wind energy park in the northern region of Viana do Castelo, Portugal.  
Photograph: Estela Silva/EPA

Europe's biggest onshore wind farm plugged itself into the grid today to provide enough electricity for up to a million people in northern Portugal.

A total of 120 windmills are dotted across the highlands of the Upper Minho region of Portugal as one of western Europe's poorer nations continues to forge its reputation as a renewables champion.

"Europe's largest onshore wind farm is now fully operational," a spokeswoman for France's EDF Energies Nouvelles, which co-owns the farm, announced this morning.

The two megawatt turbines on each windmill deliver electricity to a single connection point with the electricity grid and should supply around 1% of Portugal's total energy needs.

A second, smaller wind farm is already functioning nearby, giving a combined output of 650 gigawatt hours per year. "That is above 1% of national consumption," said Nuno Ribeiro da Silva, head of the VentoMinho company that runs the farm.

That would provide enough energy for 300,000 homes, or most of the northern city of Viana do Castelo and its surrounding districts, he told the Publico newspaper.

Portugal's mixture of government enthusiasm, subsidies and special tariffs has turned it into one of the focal points of renewables development in Europe over the past five years.

The world's largest solar photovoltaic farm is being built near the southern town of Moura. The Moura solar farm, which will include a research centre, should be twice the size of any other in the world when it is fully up and running in two years time.

Portugal also recently inaugurated the world's first commercial wave power plant in the Atlantic Ocean off Aguçadoura, using technology developed in Scotland.

The country is heavily dependent on imported fossil fuels and has set a target of obtaining 31% of energy needs from renewables by the year 2020. That is more than twice the UK target. It also uses its subsidies policy to insist that manufacturers of turbines and solar panels set up production plants.

"By 2010 we will have 5,000MW of wind energy installed, meaning we will have increased it tenfold in just five years," economy minister Manuel Pinho said. "This is another step towards putting our country in the vanguard of what is being done with renewable energy."

Portugal, which claims to be one of the world's top five renewable energy countries, provides subsidies of up to 40% for new projects.

The world's largest onshore wind farms are in the United States, with the Horse Hollow farm in Texas providing more than 700MW.

These will soon be dwarfed by proposed offshore wind farms of up to 5,000MW each.

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