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Floating wind turbines poised to harness ocean winds

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A British company is poised to construct the world's first floating wind turbine, in a move that could herald a new generation of cheaper, less problematic wind energy

A British company is poised to construct the world's first floating wind turbine, in a move that could herald a new generation of cheaper, less problematic wind energy.

Blue H, a firm registered in the UK but based in Holland, aims to anchor its prototype device 12 miles off the coast of southern Italy later this month.

The company is one of several racing to build commercial-scale floating wind turbines that sit in deep water far from land. These turbines benefit from more powerful winds and avoid many of the issues that afflict existing wind farms.

Neal Bastick, head of Blue H, said the Italian prototype would be "virtually invisible" from the shore, and that the company plans to build a full scale floating 90 megawatt wind farm in the region. Blue H also wants to build them off Scotland and the northeast US.

Bastick said the floating windmills would be more economic to install than existing offshore turbines, which sit on fixed foundations in the seabed. They could minimise problems with planning, as well as having less impact on shipping, military radar and coastal seabird populations. Electricity would be sent ashore using undersea cables.

The Blue H prototype will float a turbine platform on the sea surface and fix it in position using strong chains linked to heavy weights on the sea bed. Changing the length of the chains could allow the turbine to operate in water depths between 50m and 300m, enough to take it far out into the deep ocean.

The Blue H prototype turbine platform was launched in December 2007 and needs to be towed out to sea and connected to its seabed counterweight. Bastick said: "Within a few years I would very much like to be placing these off Britain." (Watch the company's film of the launch [here](#).)

Britain is seen as a key market for such technology because of the consistent winds around its coast. In June, the UK government said that it would need to build up to 7,000 wind turbines at sea to help meet EU renewable energy targets.

The Norwegian companies [Statoil](#) and [Statkraft](#) are also developing floating windmills.

Carl Erik Hillesund, vice president for **offshore wind** development for [Statkraft](#), said: "We need some new industrial thinking on the technology. Up to now, people have just focused on taking onshore wind turbines and putting them offshore. That has caused a lot of hassle and mistakes."

He said the floating technology could be sited more than 200 miles from the coast. "You could put them between the UK and Norway. That would be no problem. They would be out of sight and much more

flexible."

Statkraft is also bidding to build new wind farms in British waters, but Hillesund said it was too early to say if the floating wind turbines would be used. The company aims to build its first full scale prototype by 2011.

As part of a consortium called Windsea, it is developing a floating triangular platform, with a three to four-megawatt turbine mounted at each corner. The platform would be anchored to the sea bed, but by a single chain so it could rotate as the wind changed direction.

Statoil takes a different approach: fixing a conventional turbine to a concrete buoy, anchored to the sea bed with three cables. Called Hywind, the company aims to switch on a 2.3 megawatt prototype device in autumn 2009.

Perhaps the most elegant design is being worked on by another Norwegian company called Sway. It mounts its turbine on an elongated floating mast, the bulk of which sits below the water. Connected to the seabed by a metal tube, the turbine mast is designed to sway with the wind and waves, and can lean at an angle of up to 15 degrees. It could launch a prototype in 2010.

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