

Marine energy

Ruling the waves

Britain may become a pioneer in harvesting energy from the sea

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COMPARED with, say, Hawaii or Bali, Cornwall hardly counts as a surfer's paradise. Yet the waves off England's craggy southwestern toe—one, the Cribbar, is nicknamed “the widow-



Mixing water with electricity

maker”—have a gnarly quality all of their own. On November 7th an Australian firm, Carnegie Wave Energy, won EU backing to launch a £60m (\$74m) project to harness the power of those waves to generate electricity. If successful, it could help make Britain, with its NIMBYish aversion to onshore wind and solar farms, a pioneer in harvesting energy from the sea.

Wave power is not for the faint-hearted. It requires hefty subsidies. Bobbing power plants can be destroyed in an instant by freak waves. Two Scottish firms, Pelamis and Aquamarine Power, have gone bust in the past two years trying to commercialise it. Not for nothing is Carnegie's technology named after Ceto, a Greek goddess who personified the perils of the sea.

But Michael Ottaviano, Carnegie's boss, says his power plant is different from the others because instead of floating on the sea's surface, at the mercy of the waves, it is pushed underwater “like a big football” and tethered just below the surface by a thick cable attached to the seabed. As it moves up and down with the swell, the giant pod drives a hydraulic pump to generate electricity.

The European Regional Development Fund has provided £9.6m towards producing the first megawatt of power; Carnegie still needs a further £5.2m. The submerged power plant will be tethered 16 miles (26km) off Cornwall's Atlantic coast, feeding electricity back to the grid in Hayle via what looks like a 33,000-volt underwater extension lead. That has been in place since 2010 thanks to another EU-led development project, the so-called Wave Hub test site. The hub can handle up to 48MW of power, or the equivalent of 24 large offshore wind turbines. Carnegie hopes

to attach 15 of its pods to the hub by 2018, creating Britain's first grid-connected commercial wave farm.

But it still needs massive financial support. Mr Ottaviano says he "just about had a heart attack" after Britons voted in their referendum in June to pull out of the EU. Since then, however, he says the Treasury has provided reassurances that funding will continue.

On November 9th the government issued further good news for some developers of renewable energy. As well as confirming plans for a phasing-out of coal-fired power generation by 2025, ministers reaffirmed a budget of £290m a year for technologies such as offshore wind, wave and tidal energy.

That long-awaited announcement will promote future marine-energy plans in Britain, says Jonathan Marshall of the Energy and Climate Intelligence Unit, a think-tank. Later this year Edinburgh-based Atlantis Resources hopes to connect the world's largest tidal power scheme to the grid for the first time. Who says British sea power is in decline?

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