

Science grads can rule the waves -Plug into water power

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The enormous power of the sea has long been a source of awe. Now serious efforts are under way - led by British engineers - to harness some of the energy surging around our shores. The search for the best machine for the job is gathering pace, with more than 40 types of technology trialled worldwide.

There are two main types of marine power technology. Some devices on the surface of the water aim to tap the power of waves, while underwater turbines are used to capture energy from powerful tidal currents. Suitable tidal currents are scarcer but more dependable than waves and Britain has a large number of potential sites.

One of the best locations in Britain for turbines is the Pentland Firth, whose currents race between the Orkneys and the Scottish mainland. Among those braving its challenging conditions is the Irish company Open-Hydro, which has developed a new kind of technology to harness tidal energy, in conjunction with consulting engineers at RPS. The Open-Centre turbine is much smaller than the SeaGen, being planned by Marine Current Turbines for a "tidal power farm" off the Anglesey coast, and sits on the sea bed. "The idea is to minimise the impact on the environment," says Dr Mike Shaw, a director at RPS, who led the team that installed a prototype turbine on the sea bed. "It's been quite a challenge getting it down there with such fast currents, but we've shown the technology works. This is a young branch of the energy industry so it's an exciting time, especially for graduates because it's very hands-on."

Andrew Carlisle, 24, a graduate engineer at RPS in Belfast, has worked on the tidal turbine. "My Cambridge degree - which RPS sponsored - gave me a lot of transferable skills," he says. "The whole industry is really taking off at the moment."

Despite its potential, tidal technology is suffering from a lack of government investment compared with wind. "We're blessed with the best tidal resources in Europe but the amount of money going into marine power has definitely been sub-scale," said Dr Mark Williamson, director of innovations at the Carbon Trust.

The trust is running a programme, the Marine Energy Accelerator, aimed at supporting the most commercially viable types of technology and the government has set up the Marine Renewables Deployment Fund with a £42m budget but no company has yet qualified for any grants.

There are more ambitious developments abroad. One in Florida aims to tap the power of the Gulf Stream. Florida Atlantic University in Boca Raton plans to place a fleet of turbines on the sea floor, 15 miles east of the coast. The turbines would spin as the current flows north. A prototype turbine is being tested in a laboratory before it goes into the water next year. Florida Atlantic's Centre for Ocean Energy Technology, the project's sponsor, says that when it is fully deployed, the Gulf Stream could produce as much electricity as eight nuclear power plants.

Source: TimesOnline.co.uk

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