

Re: Wave machine supplies power to 500 homes

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Although less than one third of energy use is electricity , its a good start in an era when the oil supplies are running out and humankind faces starvation.

Wave power delivers electricity to grid

Paul Brown, environment correspondent
Tuesday August 24, 2004
The Guardian

The first wave-power machine to supply the national grid has been operating successfully for a week in Orkney at Emec, the European Marine Energy Centre, raising hopes that wave farms will soon join off-shore wind farms as a feature of coastal Britain.

The Pelamis machine has a 750-kilowatt output, sufficient for up to 500 households, and is the first of a number of advanced prototypes being tried out in Orkney before being put into commercial production by Ocean Power Delivery of Edinburgh.

The plan is to have 40 machines together in a wave farm occupying a square kilometre (0.386 sq mile) of sea, supplying electricity sufficient for 20,000 households to the grid via a single cable under the seabed.

In principle, wave machines use the sea's vertical rise and fall to create changes in pressure, analogous to those on the pistons in the cylinders of a car engine, which are harnessed to drive a turbine; an underwater tide machine uses the alternate ebb and flow to drive a turbine directly. Along with off-shore wind, wave and tide power are potentially a vast electricity resource for the UK.

While wind is now accepted as a "mature technology" that is economically viable, the others are at the expensive development stage – though between them they could produce more energy than wind.

The Orkney centre will test various wave machine designs in all sorts of conditions before commercial production.

Undersea turbines are being tested in the West Country.

If all three technologies work, and could be harnessed together out at sea, it would greatly reduce costs because the same cabling could bring the electricity ashore.

Andrew Mill, Emec's managing director, said yesterday: "It was extremely satisfying to witness the closing of the circuit breaker seeing the meters register the first electric power flowing into the UK grid from an offshore wave powered renewable energy device."