

# 100% Renewable UK

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## Wave and Tidal

Wave power and tidal power are technologies which have mostly been abandoned in England but which are still being pursued in Scotland. In fact these energy sources cover a range of technologies. With wind power and solar pv looking so cheap interest in giving large incentives to wave and tidal seems to have waned. However, solar pv and wind power used to be as expensive as some wave and tidal energy technologies today, yet they currently do not have incentives such as feed-in tariffs to enable them to have an initial market to allow them to develop further.

### Tidal Power

Tidal Power can mean one of three basic technologies.. **First** there is conventional tidal 'range' technology, the biggest example of which was built in La Rance in France. See <https://www.edf.fr/en/the-edf-group/industrial-provider/renewable-energies/marine-energy/tidal-power>. This involves a barrier being built across an entire river from bank to bank, and harvesting energy as it goes through turbines. A very large project has been proposed for the River Severn. **Second** there is tidal lagoon technology which involves just enclosing part of an estuary – this can still involve big projects, but is regarded as being less intrusive to wildlife by conservationists. It has been proposed for Swansea and Cardiff. See <http://www.tidallagoonpower.com/tidal-technology/what-is-a-tidal-lagoon/> Ultimately these projects were refused support from the Government on the grounds that they are too expensive. **Third** there is tidal stream projects. These are different in that they are, in effect, upside-down-wind turbines which extract energy from passing currents. There are several projects that have been installed. See <https://www.renewableuk.com/page/WaveTidalEnergy>, also the Offshore Renewable Energy Catapult (ORE), <https://ore.catapult.org.uk/These> centres cover wave energy as well. The European Marine Energy Centre (based at Orkney) is a major player in marine energy, conducting testing and evaluation of technologies. See <http://www.emec.org.uk/>

### Wave Power

Wave Power features prominently in the arguments about energy policy since the 1980s when Steven Salter suggested wave power ducks, and many posed it as an alternative to nuclear power. However wave power is an entirely new technology in engineering terms (at least tidal stream has wind turbines to start its design work), and it has struggled. A number of different designs have been tested, and Wave Energy Scotland (funded by the Scottish Government) continues to push forward

research and development of the technology. See <https://www.waveenergyscotland.co.uk/news-events/oceanset-newsletter-1-now-published/>

There has also been efforts to design and deploy wave power at the small scale using niche markets in the offshore monitoring sector. See <https://www.oceanpowertechnologies.com/index.php/> See also <http://www.resenwaves.com/>. Certainly if such markets can be developed then the technology could be further optimised.

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