

World's first commercial wave power station

The world's first commercial wave power station has been connected to the national grid in the United Kingdom. Located on the Scottish island of Islay, energy generated at this facility can fulfil the requirements of 400 households. The technology employed at this plant was developed by Wavegen and the Queen's University, Belfast. Fiscal assistance for developing the Land Installed Marine Powered Energy Transformer (LIMPET) wave system was volunteered by the European Union.

The LIMPET wave system offers modular construction and simple operation, and is expected to replace diesel generation in coastal areas. It uses an oscillating water column in an inclined concrete tube that has its opening below the water level. Wave action causes the water level in the collector to oscillate, and this variation alternately compresses and decompresses the trapped air in the column. Air flows back and forth through a pair of generating turbines, which are propelled in the same direction at all times, regardless of the direction of the airflow.

The unit is designed to operate on the shoreline, or can be incorporated within rubble mounds or caisson breakwaters to provide coastal protection schemes as well as power generation. Key features include low-cost power, maximum local content and a 60-year lifespan with minimal maintenance. The Islay facility has secured a 15-year power purchase agreement with Public Electricity Suppliers in Scotland.

Website: <http://www.wired.com/news/technology/0,1282,40325,00.htm>