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:: Wave Power Connection Heralds New Era

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The world's first commercial wave power station has successfully fed electricity into the UK's national grid, on the Scottish island of Islay already famous for its malt whiskies. The station has secured a 15 year power purchase agreement with the major Public Electricity Suppliers in Scotland.

This important event has opened the door for wave power to become a major contributor of renewable energy and assist meeting obligations under the Kyoto Protocol by reducing emissions of greenhouse gases.

WAVEGEN, world leading wave power developers, and Queen's University Belfast (QUB) jointly developed LIMPET with European Union (EU) support. LIMPET is rated at 500 kW and able to provide enough electricity for about 400 local homes.

WAVEGEN is backed by UNOTEC Holding AG controlled by Dr Stephan Schmidheiny, a leading Swiss industrialist; AGIP UK, part of the large Italian ENI Group and 3i, Europe's leading venture capital company.

Managing Director of WAVEGEN, Allan Thomson said:

"This is a big day for us. Wave power has joined the important group of commercially viable, competitive and clean forms of sustainable energy; this is the launch of a new global market."

With modular construction and simple operation it will fulfill a growing need for coastal communities all over the world especially islands seeking to replace



Photo of LIMPET

Editors notes

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Established in 1992, by Professor Alan Wells FRS, inventor of the Wells Turbine and Allan Thomson. WAVEGEN is the world leader of commercial wave powered electrical generation technology. WAVEGEN has pioneered the research, development and manufacture of wave power systems.

The LIMPET (Land Installed Marine Powered Energy Transformer) device is a 0.5MW commercial wave energy converter providing power to the grid. The LIMPET is designed to operate right

diesel generation with clean indigenous power whilst revitalising maritime industries.

QUB installed a small research wave energy station on Islay in 1990. The successful operation of this plant has enabled the development of the LIMPET project. Professor Trevor Whittaker of QUB said:

“It is very satisfying to find 20 years of collaborative academic research being developed commercially. LIMPET is an important milestone in the development of this vast ocean resource.”

The EU is funding research and demonstration activities to bring renewable energy source into the energy market. Energy from the Ocean has the potential to be a large contributor to the European energy balance in the long term. Dr. Philippe Schild, European Commission Scientific Officer for LIMPET, said:

“To see a new renewable energy source reaching this stage is an important day for all people involved since its beginning. LIMPET is there to prove that energy can be extracted commercially from the ocean.”

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on the shoreline. Alternatively, LIMPET units may be incorporated within rubble mounds or caisson breakwaters to provide self-financing coastal protection schemes, providing power or potable water to local communities.

LIMPET is an oscillating water column (OWC) with Wells Turbine power take-off. The OWC consists of an inclined concrete tube with its opening below the water level. External wave action causes the water level in the collector to oscillate. This variation in water level alternately compresses and decompresses the trapped air above causing air to flow backwards and forwards through a pair of contra-rotating Wells turbines. Wells Turbines are self-rectifying: they are driven in the same direction irrespective of the direction of the airflow. Each of the two turbines is mounted on a shaft of a 250kW F3 Series ALSTOM induction machine.

Key innovative features of the shoreline technology are:

- :: Low cost power
- :: Simple air turbine - high reliability
- :: Maximum local content
- :: All electrical equipment on land
- :: Easy plant access - by road
- :: Easy construction and installation - no marine operations
- :: 60 year life - minimal maintenance

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