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Trident Energy announces breakthrough in sea wave renewable energy technology

Milestone tests at UK's New and Renewable Energy Centre (NaREC) demonstrate viability of Direct Energy Conversion Method.

Low-cost, patented technology now ready for 12 month intensive testing ahead of full-scale commercial roll-out.

LONDON, OCTOBER 11TH 2005: Trident Energy Ltd today announced a further major step towards cost effective, flexible and uncomplicated production of energy from sea wave power.

Trident Energy Ltd, based in Southend on Sea, Essex, UK, reports that its patented Direct Energy Conversion Method (DECM) has successfully completed testing at the UK's New and Renewable Energy Centre (NaREC) at Blyth, Northumberland.

Trident Energy's technology differs fundamentally from that of all other existing wave energy devices. Rather than using air or hydraulics as part of the conversion train, it converts wave energy directly to electricity through a unique and patented form of low cost linear generator.

The principle is as simple as it gets. Floats rising and falling with the waves, drive the generators to produce electrical power. In the event of a storm, the linear generators –now acting as linear motors- simply extract the floats from the sea, so protecting the entire energy conversion mechanism.

Individual units can be made using floats as small as a domestic fridge, or up to the size of a sea container, and could eventually be used singly or en-masse in coastal areas around the world to help produce carbon emissions free energy. Because of their modular design the converters can be mass-produced and are easy to deploy at any favourable sea location.

Performance of the Trident Converter at NaREC has surpassed expectations and proved the viability of the technology for use at sea. The tests show that a wave farm occupying just 1.5 square kilometers would generate > 100MW in favourable wave conditions, enough to power 62,000 homes. The DECM enjoys one of the best performance/cost ratios of any known design.

Trident's next step is to build a platform for testing at EMEC, Orkney or the proposed WaveHub facility off Cornwall. After a year's intensive testing and system-proving, the company plans to build a pilot wave farm.

Launching the test results at the Institute of Mechanical Engineers in London, **Hugh-Peter Kelly**, managing director of **Trident Energy** said, *"Our goal is to make harnessing energy from the sea a commercial reality, both for developed and evolving economies. Our testing at NaREC demonstrates the technological advantages of the Direct Energy Conversion Method. We are excited at the prospect of demonstrating our technological leadership now on a larger scale."*

Dr James Grimwade of **NaREC** commented on the initial test results - *"The prototype under test appeared to perform satisfactorily across the entire range of test conditions. Members of the NaREC team were able to witness a practical demonstration that proved electricity was being generated."*

Dr Richard McMahon, senior lecturer in Electrical Engineering at **Cambridge University** said *"The linear generator developed by Trident Energy Ltd is capable of generating electricity from the relatively slow motion of floats in sea waves while using commonly available and inexpensive materials in its construction"*.

Caroline Howles, project supervisor for the **Carbon Trust** grant funded project said, *"We were impressed by quality and completeness of the model tested at NaREC. The test programme demonstrated that the device has an innovative single moving part design that can offer simplified operation and maintenance requirements."*

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Notes for Editor

1) Trident Energy Ltd is a marine renewable company and has patented the Direct Energy Conversion Method using linear generators to generate electricity from wave power, technology which doesn't use any hydraulic equipment in the generation process and which is significantly cheaper and easier to maintain. A linear generator is simply a linear motor used in reverse. These are already in use world wide in the automation industry.

2) The company has been developing the DECM technology over several years in the UK, financed by a government grant, the Carbon Trust and private equity investment. Further investment is now being sought to take the technology forward to commercialisation.

3) To help combat climate change by cutting green house emissions, the UK Government wants 10% of UK energy to come from renewable sources by 2010. The Cabinet Office Performance and Innovation Unit has recommended that this should rise to 20% by 2020.

4) Trident Energy is the first company to generate electricity using linear generators at the NaREC facility.

5) More information, including the results of the tests, and illustrations of the equipment, is available on the company's website – www.tridentenergy.co.uk