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Underwater kites set to power all households in city the size of Newcastle by 2020

Carbon Trust provides £350,000 grant for first seagoing trials of innovative tidal energy device

Tidal energy device developer Minesto UK Ltd is receiving a grant of up to £350,000 from the Carbon Trust funded by Invest Northern Ireland to deploy the first seagoing prototype of its innovative seakite technology - 'Deep Green'. The device works like a kite, tethered to the seabed, which flies through the sea current carrying a turbine. If trials are successful, Minesto plans to deploy enough devices around the UK's coastline to generate up to 530GWh a year by 2020, enough to power the annual electricity needs for all households in a city approximately the size of Newcastle.

The radically new concept can operate in slower currents than any other known tidal energy technology. Deep Green's kite-like structure flies in a figure of eight, steered by a rudder, allowing it to effectively accelerate the speed of the water entering the turbine by up to ten times allowing more power to be generated leading to a step-change reduction in the cost of tidal energy. The technology has the potential to unlock significant additional tidal resources by opening up whole new areas of low velocity tidal streams around the UK's coastline to generate electricity.

The trial will see a one-tenth size version of the Deep Green device put through its paces off the coast of Northern Ireland.

Benj Sykes, Director of Innovations at the Carbon Trust, said:

"The UK boasts some of the best tidal resources in the world and we are focussed on bringing down the cost of extracting that energy. Minesto's Deep Green is a very exciting technology as it could provide a step change reduction in the cost of tidal energy and open up swathes of the UK's coast to generating electricity. Tidal energy has the potential to produce up to 18 terawatt hours of electricity, equivalent to over 5% of the UK's electricity consumption."

Anders Jansson, Managing Director of Minesto, said:

"The support from the Carbon Trust has really helped Minesto to accelerate its technical development and proves that the UK has large ambitions for its marine renewable programme".

Tracy Meharg, Managing Director Invest NI said:

“Invest NI is delighted to see Minesto investing to develop its ongoing R&D plan in Northern Ireland. This investment serves to strengthen Invest NI’s aims and objectives to position this region as a leading renewable energy hub.”

The Carbon Trust research and development grant will support Minesto in gaining site permits for installations, testing survivability in a real sea environment and also develop and verify a model for the cost of energy from the device. The Carbon Trust first supported the concept through its Marine Energy Accelerator programme. Minesto also works with experts and prominent researchers and engineers at Det Norske Veritas UK, GL Garrad Hassan, Global Maritime Alliance, Queens University in Belfast, RPS Group and Strathclyde University in Glasgow.

Minesto has also recently been recognised at the Rushlight Awards. The jury, consisting of independent experts in the field, judged Minesto to be the winner of the Rushlight Marine and Hydro Award for the Deep Green technology.

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Notes to editors:

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About the Carbon Trust

The Carbon Trust is a not-for-profit company with the mission to accelerate the move to a low carbon economy, providing specialist support to business and the public sector to help cut carbon emissions, save energy and commercialise low carbon technologies. By stimulating low carbon action we contribute to key UK goals of lower carbon emissions, the development of low carbon businesses, increased energy security and associated jobs.

We help to cut carbon emissions now by
Providing specialist advice and finance to help organisations cut carbon
Setting standards for carbon reduction

We reduce potential future carbon emissions by
Opening markets for low carbon technologies
Leading industry collaborations to commercialise technologies
Investing in early stage low carbon companies