Cape Sharp Tidal generates Canada's first in-stream tidal energy at FORCE

Cape Sharp Tidal's 2MW turbine is now generating power to the Nova Scotia power grid at FORCE. (CNW Group/Cape Sharp Tidal)

PARRSBORO, NS, Nov. 22, 2016 /CNW/ - Nova Scotia homes and businesses are now powered by North America's first in-stream tidal turbine. Cape Sharp Tidal (a partnership between Emera and OpenHydro/DCNS) deployed its two-megawatt (MW) Open-Centre Turbine two weeks ago at the Fundy Ocean Research Center for Energy (FORCE) test site near Parrsboro—and it is now producing Canada's first in-stream tidal energy.

This milestone marks a turning point for Canada's renewable energy sector. It is the first time clean, renewable in-stream tidal power has successfully been generated from the Bay of Fundy, and the first time a turbine has been grid-connected at FORCE. The energy will be produced and consumed in Nova Scotia, thanks to the province's Renewable Electricity Regulations and agreements under the Developmental Feed-in Tariff program.

The demonstration turbine—designed and manufactured by OpenHydro—uses a fraction of the estimated 7,000 MW potential of the Minas Passage to power the equivalent of about 500 Nova Scotia homes with energy from our tides. A second turbine, planned for deployment in 2017, will make Cape Sharp Tidal one of the largest generating arrays in the world.

The completed 4MW demonstration project will displace the need to burn about 2,000 tonnes of coal, and eliminate 6,000 tonnes of greenhouse gas (GHG) C02 emissions—the equivalent of taking 1,000 cars off the road each year. This achievement contributes to Nova Scotia's over-achievement on national GHG reduction goals. Nova Scotia expects to reach between 43 and 46 percent reductions from 2005 by 2030.

Significant investments in Nova Scotia's tidal sector

FORCE has invested $30 million in onshore and offshore electrical infrastructure to allow demonstration turbines to connect to the power grid. In total, more than 125 organizations contributed to the creation of the FORCE facility and its research and monitoring programs. More than 90 percent of these are from Nova Scotia, a testament to the region's skills, expertise, and ability to innovate in the ocean sector.

Cape Sharp Tidal has invested tens of millions of dollars to develop the local tidal industry and supply chain, and has met its commitment to spend 70 percent of first-phase project costs in Nova

Scotia. More than 300 people have been employed on the project in areas such as fabrication, environmental monitoring, engineering, health and safety, marine services and more.

Environmental monitoring programs are also underway

This year, FORCE has collected additional baseline data on sound, and on fish and marine mammals. Cape Sharp Tidal now begins real time data monitoring from a combination of passive (icListen hydrophones) and active (Tritech Gemini) sonars mounted on the turbine, and from control sites to collect data on operational sound and ocean life interactions with the device. This work will complement additional fish, lobster, marine mammal, seabird and noise studies at FORCE. Monitoring reports will be shared with regulators and the public, and will contribute to a growing international body of research.

Monitoring to date at other tidal sites around the world has not observed a single collision between ocean life and turbines in a marine environment. Nova Scotia will now have the opportunity to test these findings in the Minas Passage.

QUOTES

"This is a proud, and historic moment in Nova Scotia's global leadership in the responsible development of a new and renewable energy source. As we make the first in-stream tidal energy connection to the Canadian grid, we are ushering in a new era in marine renewable energy and taking an unprecedented step toward a lower carbon future."

- Michel Samson, Minister of Energy

"This is a small but historic step in Nova Scotia's transformation from using imported coal to becoming a leader in clean, local energy. This achievement is the result of many people working to make all aspects of this project fit together – from environmental approvals to subsea cables to grid connection. How far can in-stream tidal grow? Now the most important research begins."

- Tony Wright, General Manager of FORCE

"This is a huge achievement for Cape Sharp Tidal, a company combining DCNS, OpenHydro and our partner Emera. In two hours, within one tidal cycle, we deployed an Open-Centre Turbine in the Bay of Fundy and within 24 hours, secured the export of power to the Nova Scotian grid. The successful delivery of this turbine, the most powerful in North America, also represents a significant milestone for the global tidal industry. When it is joined by a second device in 2017, Cape Sharp Tidal will be one of the largest generating, in-stream tidal energy arrays anywhere in the world."

- Thierry Kalanquin, Chairman of OpenHydro and Senior Vice President, Energy and Marine Infrastructure at DCNS.

"Emera's investment in Cape Sharp Tidal is an investment in Nova Scotia's renewable energy future. We're already seeing growth and momentum in this new Nova Scotia tidal industry. It's a promising economic driver and an important local source of clean energy with benefits for the whole Province."

- Nancy Tower, Chief Corporate Development Officer of Emera Inc

FOR BROADCAST USE

North America's first in-stream tidal turbine is now powering homes in Nova Scotia. Last week, Cape Sharp Tidal installed a 2MW in-stream tidal turbine at the Fundy Ocean Research Centre for Energy, or FORCE, test site near Parrsboro.

The turbine is producing enough energy to power 500 Nova Scotia homes. This is the first of two demonstration turbines planned. Together, they will power 1,000 homes in Nova Scotia with a local, renewable energy source. Tidal energy holds great promise in tackling climate change. Just two turbines will displace 6,000 tonnes of GHG cO2 emissions. That's equal to taking more than 1,000 cars off the road every year.

FORCE will host five demonstration projects that will test their devices in the highest tides in the world. Nova Scotia stands to play a leading role in the global tidal energy industry.

Already more than 300 people are working on this project, and 250 Nova Scotia companies are involved in the tidal supply chain. Overall, Nova Scotia's tidal energy industry has potential to create up to 22,000 jobs and contribute as much 1.7 billion to the economy.

Cape Sharp Tidal is a partnership between Emera and OpenHydro, a DCNS company.

About Cape Sharp Tidal Venture
Cape Sharp Tidal is a joint venture between Emera Inc. and OpenHydro, a DCNS company, with the objective to deploy a grid connected 4MW tidal array demonstration project in the Bay of Fundy at the Fundy Ocean Research Centre for Energy. This project has potential to be one of the world's first multi-megawatt arrays of interconnected tidal turbines, providing clean, renewable, predictable energy to more than 1,000 Nova Scotians.
More at capesharptidal.com

About OpenHydro, a DCNS company
OpenHydro is a DCNS company specialising in the design, manufacture and installation of marine turbines generating renewable energy from tidal streams. The company's vision is to deploy turbine arrays under the surface of the oceans to produce energy silently, invisibly and with no impact on the environment. OpenHydro has achieved a number of industry firsts including being the first to deploy a tidal turbine at the European Marine Energy Centre (EMEC), the first to connect to and generate electricity from tidal streams onto the UK National Grid and the first to successfully demonstrate a method of safely and economically deploying and recovering turbines directly on the seabed. The deployment and recovery method delivers a step change in the economics of tidal energy.
OpenHydro has a project portfolio spanning Canada, France, Northern Ireland, Scotland, the Channel Islands and Japan, with utility partners including Emera, EDF, Brookfield Renewable Energy Group, SSE Renewables and Alderney Renewable Energy. OpenHydro has won a number of awards for its innovations in the field of renewable energy technology.
More at openhydro.com and dcnsgroup.com

About Emera
Emera Inc. is a geographically diverse energy and services company headquartered in Halifax, Nova Scotia with approximately $28 billion in assets and 2015 pro-forma revenues of $6.3 billion. The company invests in electricity generation, transmission and distribution, gas transmission and distribution, and utility energy services with a strategic focus on transformation from high carbon to low carbon energy sources. Emera has investments throughout North America, and in four Caribbean countries. Emera continues to target having 75-85% of its adjusted earnings come from rate-regulated businesses. Emera's common and preferred shares are listed on the Toronto Stock Exchange and trade respectively under the symbol EMA, EMA.PR.A, EMA.PR.B, EMA.PR.C, EMA.PR.E, and EMA.PR.F. Depositary receipts representing common shares of Emera are listed on the Barbados Stock Exchange under the symbol EMABDR.
More at: emera.com or at sedar.com

About FORCE
FORCE is Canada's lead test facility for in-stream tidal energy technology, located in the Bay of Fundy. As a not-for-profit research lab, FORCE collaborates with government, industry, academia and the public to better understand if this technology can play a safe, effective role in Canada's energy future. Since 2009, FORCE has built the electrical infrastructure to allow in-stream devices to deliver power to the provincial grid, and in partnership with academic and research institutions, invested $15 million in research, monitoring and the Fundy Advanced Sensor Technology program, increasing understanding and scientific knowledge of the Minas Passage. FORCE receives funding support from the Government of Canada, the Province of Nova Scotia, and participating developers.
More at fundyforce.ca

SOURCE Cape Sharp Tidal

Image with caption: "Cape Sharp Tidal's 2MW turbine is now generating power to the Nova Scotia power grid at FORCE. (CNW Group/Cape Sharp Tidal)". Image available at: http://photos.newswire.ca/images/download/20161122_C8681_PHOTO_EN_824300.jpg

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