Smart grid integration of ocean energy project launches in Canada

By **Jonathan Spencer Jones** - Dec 22, 2020

Image: BMT

The Ocean Energy Smart Grid Integration Project has been launched by Canada's Ocean Supercluster.

The Ca$975,000 (US$760,000) initiative brings together a range of partners in ocean innovation to commercialise the integration of ocean energy solutions into communities.

The project will develop a single controller that has algorithms for different communities, whereas currently there is a bespoke design for each community. With this solution, algorithms are selected and parameterised based on ratings of the equipment.

The development of this technology should support the greening of energy for communities of all sizes, and particularly rural communities currently dependent on diesel power generation, as well as build capabilities in ocean energy smart grid integration.

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"We are excited to partner with Canada's Ocean Supercluster and our teammates at Sustainable Marine to further the development of a smart electrical grid solution for remote communities using ocean energy generators," says Darcy Byrtus, Canada President of engineering consultants BMT, which is leading the project.

"The Accelerated Ocean Solutions Program of the Ocean Supercluster is providing a unique

Canada's Ocean Supercluster is an industry-led initiative to accelerate the development and commercialisation of ocean solutions. The Accelerated Ocean Solutions Programme is focussed on the development of the smaller, shorter timeline projects.

Other partners include tidal energy solution provider Sustainable Marine, renewables company Turtle Island Innovation, electronics manufacturer Rainhouse and the University of Victoria.

According to the Ocean Supercluster, by 2030 the global ocean economy – or 'blue economy' as it is also known – is expected to double in value to $3 trillion, outpacing the growth of the broader global economy by almost 20%. With the largest coastline in the world, highly productive ecosystems, subsea resources and untapped potential, Canada is well-positioned to deliver on the demand for ocean solutions.

Ocean energy technology opportunities

The International Energy Agency's Technology Collaboration Programme on Ocean Energy Systems (OES) recent report on Ocean Energy in Islands and Remote Coastal Areas states that ocean energy technologies can be an appealing option for these energy markets, offering advantages compared to other renewable energy technologies such as low visual and environmental impacts and predictability.

Furthermore, islands and remote coastal areas tend to coincide with good resource potential for some of these technologies and, due to the high costs of incumbent energy technologies, ocean energy could face fewer difficulties to compete with more mature technologies
in these markets.

Near term market opportunities for ocean energy technologies identified for communities include desalination and isolated power systems, while emerging is disaster resilience and recovery. At sea, market opportunities include ocean observation and underwater vehicle charging in the near term, marine aqualculture as emerging and seawater mineral and gas mining in the future.

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