

# Developing a WEC Mooring System



Columbia Power has awarded InterMoor, USA, the contract to design a cost-effective and survivable mooring system for its StingRay offshore wave energy converter (WEC) prototype. The project, which has already started with some advanced modelling and design work, will last for two years with potential for further work. In addition to overseeing offshore marine operations, InterMoor will provide analysis along with the design for the WEC's mooring system, field engineering, and operational logistics for deployment and recovery procedures.

InterMoor will draw on its vast offshore experience to deliver the necessary expertise in engineering, project management and advanced numerical analysis for its first wave energy project. The design will be targeted for offshore locations in the USA, Western

Europe and other high-energy sites around the world.

Designed to produce energy on a utility scale, the StingRay has been hydrodynamically optimised to produce energy with just a few moving parts. The device comprises a three-piece, fibre-reinforced-plastic hull and two high-torque, low-speed, large-diameter direct-drive rotary generators. It targets simple operation and inherent survivability to reduce operating and maintenance costs, and to produce electricity at prices competitive with other legacy and renewable energy sources with minimal environmental impact.

Developing a mooring system for wave energy projects will require some specific new technology advances to provide economic large-scale projects for the offshore renewable energy sector. This project will provide Columbia with an integral design solution that uses a systems engineering approach to the development and safe installation of the StingRay. It will also help to advance current mooring technology engineering approaches and installation methodologies and so help to establish and improve the economic viability of offshore renewable energy projects. The InterMoor project manager Michael O'Driscoll has recently completed the pioneering Papa Terra conductor project in Brazil.

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