

Bolt runs for commercial finishing line

Fred Olsen is stepping up commercialisation of its Bolt Lifesaver wave technology following the latest deployment at the US Navy's Wave Energy Test Site on the Hawaiian island of Oahu. The around 30kW machine is undergoing a six-month deployment, having been installed in October.

The device was put through its paces via a four-week commissioning phase, operating at reduced power settings to verify system functionality. A previous one-year demonstration of Lifesaver at WETS ended in mid-2017.

Funded by the US Navy, the US Department of Energy and the National Science Foundation, the current project is designed to improve device reliability and power performance.

The deployment also aims to demonstrate an alternative means of powering oceanographic instrumentation without using utility-supplied grid power or single-use batteries.

"We are feeding power to an on-board client sensor system, as well as testing and demonstrating a new capability to circulate 4kW through the winch line down to 10 metres

below sea surface," said Fred Olsen engineering manager Even Hjetland.

"We are working full steam on developing a buoy of five metres diameter with one single power take-off winch for simplified installation at deeper waters that can supply 1kW to 10kW of locally produced power to client systems on the surface and on the seabed," he added.

Fred Olsen is targeting the device to be used for subsea oil and gas, offshore wind, defence and oceanography applications.

"We aim to have this product available over the next 12 to 18 months. We are also tendering for commercial contracts in Europe for Bolt Lifesaver following the completion of the current deployment with the US Navy in Hawaii."

Irish developer Ocean Energy, meanwhile, is on track to deploy an OE Buoy wave device at WETS by the summer. Shipbuilding outfit Vigor is manufacturing the 750 tonnes, 38 metre-long device at its yard in Portland, Oregon.

The unit is due to be finished in spring, when it will be towed to

US SCHEDULE				
Developer	Location	kW	Technology	Type
Installed or due in 2018				
Fred Olsen	WETS, Hawaii	30	Bolt Lifesaver	Wave
New Energy Corporation	Living Bridge, Portsmouth, New Hampshire	25	EnviroGen	Tidal
TOTAL				55kW
Due in 2019				
Columbia Power Technologies	WETS, Hawaii	500	Stingray	Wave
Ocean Energy	WETS, Hawaii	500	OE Buoy	Wave
Verdant	Roosevelt Island, New York	105	KHPS Gen5	Tidal
TOTAL				1105kW
Coming in 2020				
ORPC	Cobscook Bay, Maine	300	TidGen	Tidal
TOTAL				300kW
CUMULATIVE TOTAL				1.46MW

WETS for installation. Initially rated at 500kW, it is due to be updated to 1.25MW once a new Dresser Rand power take-off is fitted after WETS testing is completed.

The \$12m Ocean Energy project has received funding from both the Irish and US governments.

Also at WETS, Columbia Power Technologies said it would kick off a grid-connected, open-water test of its 500kW Stingray wave device next year.

Wave developers are in the meantime eyeing the new test facilities in Oregon, due to become operational from 2021.

Oregon State University has partnered with the US Department of Energy and other stakeholders to build the PacWave test centre, which is located between Newport and Waldport.

PacWave operations and logistics manager Dan Hellin said the main focus of current activities is on progressing PacWave South, which will

be a grid-connected, pre-permitted test site. "PacWave South is currently in the design and permitting phase," he added.

"The draft licence application for the site was filed with the Federal Energy Regulatory Commission in April and we hope to file final licence applications in early 2019."

PacWave South is expected to be available for deployments from 2021. "We are currently in discussions with a number of developers and test clients but schedules have yet to be decided."

In the tidal sector, Verdant Power recently secured \$6m of funding to support the third phase of a project designed to demonstrate, test and commercialise its Free Flow System turbines.

Verdant will deploy its fifth-generation turbine units on a TriFrame mount at the 105kW Roosevelt Island Tidal Energy project in New York City's East River.

The turbines will generate electricity under a hydrokinetic pilot project licence issued by FERC, the first commercial licence issued for a tidal project in the US.

Maine outfit Ocean Renewable Power Company is stepping up development of its next-generation tidal technology. The company will deploy the first production unit of the new 300kW TidGen device in Cobscook Bay, Maine by the end of 2020.

In October, ORPC received a statement of feasibility from DNV GL for the second-generation power system.

In Portsmouth, New Hampshire, New Energy Corporation is commissioning a 25kW tidal device at the Living Bridge project.

The company stepped in to replace another vendor in the project, which will demonstrate power generation at a bridge in a tidal estuary. ■

OH BUOY: Fred Olsen's Bolt Lifesaver Photo: Royer Studios

