



## 6 October 2023

The Portal and Repository for Information on Marine Renewable Energy ([PRIMRE](#)) provides access to marine energy data, information, and resources in the U.S. and internationally. The bi-weekly [PRIMRE Blast](#) highlights relevant announcements and upcoming events; new content in the [Knowledge Hubs](#); and international marine energy news. [Email us](#) to contribute!

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### Announcements

#### Marine Energy Graduate Student Research Program

The U.S. Department of Energy's (DOE) Water Power Technologies Office (WPTO) and the Oak Ridge Institute for Science and Education (ORISE) recently opened applications for the [2024 Marine Energy Graduate Student Research Program](#), which supports graduate students working on marine energy by providing access to expertise, resources, and capabilities available at DOE offices, national laboratories, government and industry partners, and other approved facilities. Applications are due 1 December 2023.

#### Calls for Abstracts

The [Call for Abstracts](#) for [OCEANS 2024 Singapore](#) is now open through 15 October 2023. OCEANS will take place in 14-18 April 2024 in Singapore.

The [Call for Abstracts](#) for the [34<sup>th</sup> International Ocean and Polar Engineering Conference \(ISOPE 2024\)](#) is open through 20 October 2023. ISOPE 2024 will take place on 16-21 June 2024 in Rhodes, Greece.

The [Call for Abstracts](#) for the [43rd International Conference on Ocean, Offshore & Arctic Engineering \(OMAE 2024\)](#) is now open through 26 October 2023. OMAE 2024 will take place 9-14 June 2024 in Singapore.

## Funding & Testing Opportunities

The U.S. DOE is now accepting applications for the [Renewable Energy Siting through Technical Engagement and Planning \(R-STEP\)](#) program, which seeks to expand the decision-making capacity and expertise of state and local governments around large-scale renewable energy planning, siting, and permitting. Applications are due 3 November 2023.

The U.S. Testing Expertise and Access for Marine Energy Research (TEAMER) program is now accepting [Request for Technical Support 11 applications](#) until 3 November 2023. Applicants can apply to work with approved facilities on tank and flume testing, lab/bench testing, numerical modeling and analysis, and open water support.

The U.S. DOE and Department of the Interior recently released the [Installation Noise Reduction and Reliable Moorings for Offshore Wind and Marine Energy Funding Opportunity Announcement](#), which includes \$6.4 million for projects to improve the reliability of moorings for floating offshore wind energy and marine energy systems and \$10 million for projects to reduce the noise associated with the installation of fixed-bottom offshore wind energy projects. Concept papers are due 9 November 2023 and full applications are due 29 February 2023.

## Career Opportunities

The University of Massachusetts Amherst is inviting applications for multiple tenure-track [Assistant Professors - Mechanical and Industrial Engineering](#) with expertise in fluid dynamics, ocean engineering, heat transfer, or thermodynamics, especially with application to sustainable and renewable energy. Applications are due 15 October 2023.

The National Renewable Energy Laboratory (NREL) is seeking a [Postdoctoral Researcher](#) to support projects evaluating and characterizing wave energy measurement technologies, developing wave measurement calibration methods, and researching methods to improve wave measurements. Applications are due 20 October 2023.

Florida Atlantic University is inviting applications for multiple [Assistant Professor tenure-track positions](#) in the broad areas of naval architecture and naval engineering, maritime autonomy and robotics, aerospace engineering, offshore engineering, resilient structures, and marine energy.

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## **Upcoming Events**

### Upcoming Conferences

Marine Renewables Canada is hosting the [Marine Renewables Canada 2023 Conference](#) on 4-6 December 2023 in Ottawa, Canada. Register [here](#).

WavEC Offshore Renewables, in collaboration with the Netherlands Embassy, is hosting the [2023 WavEc Seminar](#) on 6 December 2023 in Lisbon, Portugal. Register for free [here](#).

The [Pan American Marine Energy Conference \(PAMEC 2024\)](#) will take place on 22-24 January 2023, in Barranquilla, Colombia, with workshops on 19-21 January. Register [here](#).

### Upcoming Workshop

The Argentine Network of Marine Energies, in collaboration with the Center for Ocean Energy Research (COER), Maynooth University, Ireland, and the Marine Offshore Renewable Energy Lab are hosting the [8th Wave Energy Workshop](#) in conjunction with the 2023 Argentine Meeting on Marine Energies (ENAEM 2023) on 6-8 November 2023 in Buenos Aires, Argentina.

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## **New Documents on Tethys Engineering**

*[Tethys Engineering](#) hosts thousands of documents on the technical aspects of marine energy research and development, including journal articles, conference papers, and reports.*

### **Wave climate and energy resources in the Mariana Islands from a 42-year high-resolution hindcast – Li et al. 2023**

A high-resolution wave hindcast from 1979 to 2020 was developed for Guam and the Commonwealth of the Northern Mariana Islands, which are influenced by mesoscale and synoptic weather systems from the western Pacific Rim to the Central Pacific. The spectral wave modeling utilized structured global and unstructured regional grids with improved resolution in nearshore waters, where wave resources development is most feasible. The hindcast demonstrates its capability in capturing multi-modal seas through reproduction of bulk and partitioned wave parameters derived from altimetry and buoy measurements. The local wave climate is influenced by the year-round trade winds and tropical cyclones as well as seasonal monsoons, frontal systems, and midlatitude high- and low-pressure systems.

### **Mission Analysis for Marine Renewable Energy To Provide Power for Marine Carbon Dioxide Removal – Niffenegger et al. 2023**

The mission of this project was to provide a preliminary feasibility assessment of powering different marine carbon dioxide removal (mCDR), marine carbon capture (mCC), and marine carbon sequestration (mCS) strategies with marine energy. In this report, carbon capture (CC) refers to methods that can separate or capture carbon dioxide (CO<sub>2</sub>) from the air or ocean; carbon sequestration (CS) refers to methods that store CO<sub>2</sub> obtained by capture methods out of the atmosphere for long periods of time; and carbon dioxide removal (CDR) refers to methods that do both. The project found that mCDR powered by marine energy and offshore wind energy available in the United States could meet global CDR scales needed by 2040 and 2050 to limit warming to 1.5°C by 2100.

## **Tidal Turbine Benchmarking Project: Stage I - Steady Flow Experiments – Harvey et al. 2023**

The tidal turbine benchmarking project, funded by the UK's EPSRC and the Supergen ORE Hub, has conducted a large laboratory scale experiment on a highly instrumented 1.6m diameter tidal rotor. The turbine is instrumented for the measurement of spanwise distributions of flapwise and edgewise bending moments using strain gauges and a fibre Bragg optical system, as well as overall rotor torque and thrust. The turbine was tested in well-defined flow conditions, including grid-generated freestream turbulence, and was towed through the 12.2m wide, 5.4m deep long towing tank at Qinetiq's Haslar facility. The experimental tests are well defined and repeatable, and provide relevant data for validating models intended for use in the design and analysis of full-scale turbines.

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## **Marine Energy Atlas Highlight**

*The [Marine Energy Atlas](#) is an interactive mapping tool that maps high-resolution, spatially comprehensive data on global wave, tidal, riverine, ocean current, and ocean thermal resources.*

### **Take a Tour of the Marine Energy Atlas**

The Marine Energy Atlas features three brief tours for users to learn how to (1) create an account; (2) use the Data Library, which provides access to hundreds of existing map layers; and (3) use the Capacity Factor Tool, which offers the ability to create Capacity Factor maps of specific wave energy converters based on their power matrices.

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## **Marine Energy Projects Database Update**

*The [Marine Energy Projects Database](#) provides up-to-date information on marine energy projects, test sites, devices, organizations, and technologies around the world.*

### **Vestmanna Tidal Power Plant – Minesto**

Minesto commissioned the first Dragon 4 unit (100 kW) in Vestmanna, Faroe Islands (Denmark), in May 2022. Construction of a second foundation was completed in December 2022 and in March 2023 a second Dragon 4 unit was installed in parallel with the first unit. The new installation features an upgraded tether design aimed at improving the production performance by reducing resistance to water. New infrastructure is already in place for a future installation of a Dragon 12 unit (1.2 MW) that is currently in quayside assembly.

### **Oneka City of Fort Bragg Desalination – Oneka Technologies**

For the pilot project, an Iceberg-class wave energy unit, the 9th generation of this technology which has been refined over seven years in the ocean environment, will be

deployed along the Fort Bragg coast (U.S.). During the pilot project, one Iceberg-class unit is expected to produce up to 13,200 GPD (50 m<sup>3</sup>/day) over a 12-month period while emitting zero greenhouse gases and saving 1 ton of CO<sub>2</sub>e per year for each m<sup>3</sup> of fresh water produced daily, compared to diesel-powered desalination plants. The goal of this demonstration project is to display the benefits of Oneka's desalination technology, on all facets of sustainable development.

### **PowerPier Ålesund – Havkraft**

In 2021 Havkraft installed two Havkraft A-Class wave energy powerplants on an Ulsteinflåten pier, in cooperation with Ulstein Betong Marine and Marina Solutions. The project demonstrated production of power to grid by delivering power to the Atlanterhavsparken aquarium in Ålesund, Norway. The project was performed in cooperation with electro-partner Bosch.

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## **News & Press Releases**

### **ESB to join Simply Blue Group as partner on pioneering Saoirse Wave Energy project off the Clare coast – Simply Blue Group**

Simply Blue Group, a leading blue economy developer, and ESB, Ireland's premier energy company, have announced that they are pooling expertise and resources to deliver a pioneering 5MW wave farm array, located adjacent to the Co Clare coast. The project will be a 50:50 joint venture between the two companies. Known as Saoirse and developed by Simply Blue Group, the wave energy demonstration project aims to prove the viability of wave energy in Irish seas. Subject to the necessary consents and a grid connection, the project is on target to be completed by the mid to late 2020s. The chosen technology for deployment is CorPower Ocean's Wave Energy Converter.

### **QED's Vision for Holyhead & 'Tidal Town' – QED Naval Limited**

QED recently held constructive discussions with Ynys Môn MP Virginia Crosbie who introduced key stakeholders to their flagship Menter Môn Morlais Ltd project. A strong advocate for decarbonization, Virginia believes that tidal energy will play an important factor in the UK's renewable targets. QED and its Welsh subsidiary MOR Energy recently celebrated the award of revenue support funding secured through the government's CFD renewable incentive scheme and Allocation Round 5 (AR5). This supports QED's initial 4.5MW project at Menter Môn Morlais at Holy Island, Anglesey, North Wales, and its long-term plans for 30MW. With its ambitions to scale up their MOR Energy project to its full berth allocation of 30MW, this would spawn at least 30 Subhub platforms and 90 of their Tocardo T3 turbines.

### **Crown Estate Scotland joins Marine Data Exchange – Crown Estate Scotland**

Crown Estate Scotland and The Crown Estate recently announced a new partnership to collect and share data that will provide a more comprehensive and integrated understanding of the UK's seabed. This new arrangement will benefit its many different users, the natural environment and support the faster, more sustainable roll-out of offshore technologies that are critical to the UK's transition to a net zero energy future. Founded by The Crown Estate in 2013 as the first resource of its type, the Marine Data Exchange provides a world-leading digital platform for gathering and disseminating vital information on a wide-range of offshore activities. It currently holds one of the world's largest collections of freely available data relating to the seas around England, Wales, and Northern Ireland, and will now be extended to cover Scottish waters.

### **Final quayside assembly of tidal energy kite Dragon 12 initiated in Uddevalla, Sweden – Minesto**

Minesto, leading ocean energy developer, has completed the manufacturing of the Dragon 12 wing and started system integration at quayside in Uddevalla port, Sweden. The quayside completion of the kite enables an efficient shipment directly to Minesto's tidal energy production site in Vestmannaasund, Faroe Islands. The wing, spanning 12 metres, is a key component in the Dragon 12 system to which all other modules connect. All subsystems, including the 1.2 MW power take off, steering pods, and control system are being prepared for integration. The manufacturer of the wing is Swedish composite specialist Elitkomposit.

### **Welsh government starts assessing applications for tidal lagoon challenge – Offshore Energy**

The Welsh government has started the review of 10 applications received from more than 20 organizations as part of its €860,000 (£750,000) Tidal Lagoon Challenge. Launched by the Welsh first minister Mark Drakeford earlier in 2023, the grant fund was set up to directly support research, as part of the government's commitment to make Wales a world center for emerging tidal energy technologies. The money will be made available for at least three research projects focusing on the deployment of tidal lagoon technology. The funded research will help address the barriers that have so far prevented the development of the technology and give more insight into the benefits it could bring to Wales. The Welsh government has confirmed 10 applications have been received from 22 organizations, showing strong collaboration between academia and the industry.