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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

Community Energy Innovation Prize

The U.S. Department of Energy (DOE) launched the [Community Energy Innovation Prize](#) to award cash prizes and mentorship opportunities to organizations supporting innovation, entrepreneurship, capacity building, and economic development in communities historically underrepresented in climate and energy technology funding. Applications for the Clean Energy Ecosystem and Manufacturing Ecosystem Track are due on 2 February 2024.

InDEEP Phase 2

The U.S. DOE's Water Power Technologies Office (WPTO) has launched Phase 2 of the [Innovating Distributed Embedded Energy Prize \(InDEEP\)](#) to encourage innovation in distributed embedded energy converter (DEEC) technology to generate new, precommercial materials for wave energy conversion. Join the [Webinar on DEEC-Tec 2.0](#) on 17 January 2024, the [Webinar on Innovation Methods 2.0](#) on 24 January, and the [Webinar on TPL Assessment 2.0](#) on 31 January to learn more about InDEEP and useful tools. Submissions are due 26 April 2024.

Synchro Wants Low-Cost Tech

To meet the growing demand for advanced ocean observing capabilities, Synchro recently launched a [solicitation for information to guide procurement of low-cost technology](#). This opportunity is aimed at supporting low-cost innovative technologies for marine biological and ecological observing. Submissions are due by 31 January 2024.

Calls for Abstracts

The Centre for Ocean Energy Research (COER) at Maynooth University Ireland has opened the [Call for Posters](#) for its [2024 Wave Energy Workshop](#) until 15 January 2024. The workshop will take place on 26 January 2024 in Maynooth, Ireland.

The [Call for Abstracts](#) for the [International Conference on Ocean Energy \(ICOE 2024\)](#) is open until 5 March 2024. ICOE 2024 will take place 17-19 September 2024 in Melbourne, Australia.

The [Call for Abstracts](#) for the [Asian Offshore Wind, Wave and Tidal Energy Conference \(AWTEC 2024\)](#) is now open through 20 March 2024. AWTEC will take place on 20-24 October 2024 in Busan, Korea.

Call for Papers

The Marine Technology Society Journal is seeking manuscript submissions for a special issue on [Marine Energy - An Update on Developments Globally](#) through 1 March 2024. The issue will examine a variety of topics, including technology development, resource assessment, social and economic considerations, and the development of international standards and certification.

Funding & Testing Opportunities

The European Commission's Horizon Europe Framework Programme has opened a [Call for Additional Activities for the European Partnership for a Climate Neutral, Sustainable and Productive Blue Economy](#). This call is open to companies from European Union (EU) countries and a selected number of non-EU/non-Associated countries. Applications due 28 February 2024.

The Testing Expertise and Access for Marine Energy Research (TEAMER) program, sponsored by the U.S. DOE and directed by the Pacific Ocean Energy Trust (POET), is accepting [Request for Technical Support \(RFTS\) 12](#) applications through 1 March 2024 to support marine energy testing and development projects. Open Water Support applications can be submitted any time.

The UK Research and Innovation (UKRI) recently announced the [Ayrton Fund](#), which is a UK government commitment of up to £1 billion that aims to accelerate the clean energy transition in developing countries, by creating and demonstrating innovative clean energy technologies and business models. Applications close on 9 April 2024.

Career Opportunities

Pacific Northwest National Laboratory (PNNL) is seeking an [Operations Specialist 3](#) to work with researchers to ensure that PNNL processes and procedures are followed for all laboratory and field research activities. Applications are due 12 January 2024.

The Marine Offshore Renewable Energy Lab (MOREnergy Lab) of Politecnico di Torino, Italy, is looking for a [postdoctoral research fellow](#) to carry out activities related to the techno-economic modelling and optimization of ORE systems. Applications are due 23 January 2024.

Swansea University is advertising a [fully funded PhD opportunity](#) on fatigue-resistant elastomers with integrated electrodes for modular self-sensing wave energy converters. Applications are due 26 January 2024.

Upcoming Events

Upcoming Webinars

The [IMPACT](#) and [VALID](#) projects are jointly hosting a webinar, “[Harnessing Ocean Power: Progressing with Wave Energy Converter Technology through Rig Testing](#)”, on 31 January 2024 from 2:00-3:00pm CET (1:00-2:00pm UTC). Register [here](#).

PNNL and the National Renewable Energy Laboratory are hosting an informational [Marine Energy Career Panel](#) on 7 February 2024 from 3:00-4:30pm PST that will feature National Laboratory staff who are working to advance the marine energy industry. The webinar is aimed at current students and those interested in working in the marine energy industry. Register [here](#).

Upcoming Conferences

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

[Ocean Sciences Meeting 2024](#) will take place on 18-23 February 2024 in New Orleans, Louisiana, U.S. Register [here](#).

The Supergen Offshore Renewable Energy Hub is hosting its [7th Early Career Researchers Forum](#) on 23 April 2024 and [7th Seventh Annual Assembly](#) on 24 April 2024 at the University of Plymouth in Plymouth, England. Registration is now open.

Upcoming Workshops

In addition to the PAMEC 2024 Conference Program, PAMEC in partnership with key partners, is hosting several workshops prior to the conference.

- PNNL is hosting an [Ocean Thermal Energy Conversion \(OTEC\) Workshop](#) on 19 January to review OTEC technologies, discuss potential environmental effects, and examine additional uses of deep cold water. Register [here](#).
 - The PRIMRE team is also hosting a workshop on [Marine Energy Data Organized – PAMEC Workshop on PRIMRE and International Data Sharing](#) on 20 January to present on the resources available within PRIMRE and discuss opportunities for international databases to connect to the system. Register [here](#).
 - Fundy Ocean Research Centre for Energy (FORCE) and OES-Environmental are hosting a workshop on [Monitoring for Interactions Between Marine Animals and MRE Devices](#) on 20 January to present on environmental monitoring around wave and tidal devices. Register [here](#).
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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.

[Powering the Blue Economy: Marine Energy at Kelp Farm Sites](#) – Branch et al. 2023

Marine energy (ME) has the potential to power businesses in the blue economy. Kelp farms are an emerging maritime market of the blue economy and are predicted to grow, but they are not currently using ME for their power needs. As the number and size of kelp farms increase, more offshore power will be needed onsite for operations, monitoring, and harvesting. ME devices such as tidal current energy converters and wave energy converters (WECs) may be used to supply power for these needs. This article assesses the status of kelp farming in the continental United States, investigates the electricity needs of kelp farms, and examines the feasibility of generating the required electricity from wave and tidal current energy.

[Numerical modelling of a 1.5 MW tidal turbine in realistic coupled wave–current sea states for the assessment of turbine hub-depth impacts on mechanical loads](#) – Guy et al. 2024

This paper considers hub-depth impacts on mechanical loads for a tidal turbine operating in realistic coupled wave–current sea states. A novel medium-fidelity actuator-line CFD model for simulating tidal turbine non-steady hydrodynamic rotor load responses in the presence of turbulence, shear, and surface waves is developed. The model is validated using tank testing data from a lab-scale turbine. The validated model is then upscaled, to a power rating of 1.5 MW, and simulated in realistic wave–current conditions consistent with those of the MeyGen site. Mean torque and thrust are found to increase with turbine hub height, and the presence of waves is shown to increase mean torque and thrust values by up to 22% and 11%, respectively.

[The global techno-economic potential of floating, closed-cycle ocean thermal energy conversion](#) – Langer & Blok 2023

Ocean Thermal Energy Conversion (OTEC) is an emerging renewable energy technology using the ocean's heat to produce electricity. Given its early development stage, OTEC's economics are still uncertain and there is no global assessment of its economic potential, yet. Here, we present the model pyOTEC that designs OTEC plants for best economic performance considering the spatiotemporally specific availability and seasonality of ocean thermal energy resources. We apply pyOTEC to more than 100 regions with technically feasible sites to obtain an order-of-magnitude estimation of OTEC's global technical and economic potential. We find that OTEC's global technical potential of 107 PWh/year could cover 11 PWh of 2019 electricity demand.

Telesto Highlight

[Telesto](#) provides information and guidance for testing, measurement, and data analysis for marine energy research, development, and demonstration, as well as additional resources.

[Introducing Telesto: PRIMRE's Knowledge Hub for Marine Energy Development Resources and Guidance](#) (Webinar Recording)

The PRIMRE team recently hosted a [public webinar](#) to officially launch the new and improved version of [Telesto](#), which is home to open-source wiki pages, structured databases, and tools that provide information about the development life cycle of marine energy. Telesto also features information on performance metrics, economics, standards, compliance, and lessons learned from lab and field testing. Telesto also provides useful information for calculating the levelized cost of energy of devices, a testing facilities database, software for working in the marine energy industry, information on Technology Performance Level assessments, a materials testing database and more.

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.

[Dive Into the Marine Energy Atlas](#) (Short Video)

The Marine Energy Atlas is a free interactive mapping tool that allows anyone to access the data they need to harness the power of oceans and rivers. The Atlas supports everything from project siting to device design by providing access to high resolution comprehensive data sets. This tool was created in collaboration with the U.S. DOE's WPTO, National Renewable Energy Laboratory, PNNL, and Sandia National Laboratories. Check out the [Dive Into the Marine Energy Atlas video](#) on YouTube!

News & Press Releases

[Project update Vestmanna – Launch and Recovery procedure for utility scale tidal powerplant Dragon 12 verified](#) – Minesto

Minesto has successfully executed the Launch & Recovery method (LARS) for the first megawatt tidal kite Dragon 12 (1.2 MW, 25 tons). The operations developed for the Dragon 4 (100 kW, 2.5 tons) were proven equally effective with the large-scale kites utilizing the same small work vessel. The commissioning of the Launch and Recovery System (LARS) of the Dragon 12 has been successfully completed. The scale-up of the powerplant has not required changes in the smaller Dragon 4 kite operation for launch and recovery when applied to the Dragon 12. The D12 is ten times heavier, three times

larger, uses a longer tether and is installed at larger water depth. These changes in the kite parameters proved to be fully manageable with the existing LARS method, thus verifying both technical method and assessments of operating costs.

The Mutriku wave plant achieves cumulative electricity production of three million kilowatts per hour – Biscay Marine Energy Platform (BiMEP)

The wave plant of Mutriku, the first worldwide commercial project associated with the wave power sector, has surpassed a new milestone in the field of wave energy by reaching cumulative electricity production of three million kilowatts per hour. The Mutriku plant is the first European commercial plant that uses wave energy to generate electricity, the world's oldest and the one that accumulates more hours of operation. Since its launch in 2011, the Mutriku wave energy plant has been 12 and a half years old, generating clean energy continuously. It has passed several stages of development and has exceeded the production records achieved so far by a renewable installation of marine energy. It produces approximately 300,000 kWh per year.

Inyanga Marine Energy Group opens new base in Wales to deliver its groundbreaking tidal energy project – Inyanga Marine Energy Group

Inyanga Marine Energy Group has kicked off the New Year by opening a new office in Wales. The new office will support the development of their innovative HydroWing tidal stream energy project at Morlais on Anglesey. Inyanga has recently been awarded a contract for a 10 MW tidal stream energy project at Morlais, through the latest round of the UK Government's 'Contracts for Difference' allocation. Morlais is the UK's largest consented tidal energy scheme and one of the largest in Europe. It is managed by the social enterprise Menter Môn. The new office is based at M-SParc, a science park on Anglesey in Wales, owned by Bangor University. HydroWing technology is based on a unique patented modular design that dramatically improves the cost-efficiency and production of tidal stream energy.

Carnegie's MoorPower demonstration project approaches deployment – Offshore Energy

Carnegie Clean Energy is carrying out final preparations for the deployment of the MoorPower demonstration project, whose aim is to introduce a CETO-derived wave energy product for the aquaculture sector. Carnegie's CETO-derived MoorPower technology is designed to deliver sustainable energy supply for vessels moored offshore – such as barges in the aquaculture sector – by harnessing wave energy and therefore reducing their reliance on diesel. Final preparations are underway at the Fremantle onshore testing facility in Western Australia for the deployment of the Blue Economy Cooperative Research Centre-funded MoorPower project, which targets the reduction of reliance on diesel generators in offshore environments, aiming to minimize risk and carbon emissions.

Eco Wave Power Commences Sending of Clean Electricity to the Israeli National Electrical Grid – Eco Wave Power

Eco Wave Power Global AB, a leading, publicly traded onshore wave energy company, recently announced that it has commenced sending of clean electricity from its EWP-EDF One project in the Port of Jaffa, to the Israeli National Electrical grid. Eco Wave Power has recently finalized the construction of the EWP-EDF One project in the Port of Jaffa, in Israel. The EWP-EDF One Project was co-funded by EDF Renewable IL, who owns 50% of the project, and by the Israeli Ministry of Energy, which recognized the Eco Wave Power technology as a Pioneering technology. The project has 100KW installed capacity and is comprised of 10 floaters. In August 2023, the power station was officially connected to the Israeli national electrical grid, marking the first time in the history of Israel, that electricity produced by the power of the waves is sent to the national grid.

Leask Marine drills a ‘first’ for tidal developer – Offshore Energy

Leask Marine has installed the first offshore grouted pile with its Raptor Submersible Drilling Rig (SDR) technology in the Faroe Islands, for a Swedish tidal developer. This marks the final commercialization phase of the Raptor SDR, from concept, design, manufacturing, and full testing program complete with third-party verification, Leask Marine said. The Raptor SDR has now installed a subsea anchor with a diameter of over 980mm weighing 12 tonnes, at a water depth of more than 80 meters in basalt rock. The unit includes hydraulic stabilizers and its independent leveling systems, once reaching the seabed, allowing the Raptor SDR to install anchors in a single deployment in tidal currents up to 6 knots, Leask Marine said.