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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

New Funding for U.S. Colleges & Universities

The U.S. Department of Energy's (DOE) Water Power Technologies Office (WPTO) and Wind Energy Technologies Office (WETO) have released a [\\$14.5 million funding opportunity](#) to support foundational research at U.S. institutions of higher education to address challenges facing marine and ocean renewable energy industries and spur innovation and development. Concept papers are due 20 February 2024.

SCGSR Program Applications Open

The U.S. DOE's [Office of Science Graduate Student Research \(SCGSR\) program](#) is now accepting applications for its 2024 solicitation 1 cycle, which provides supplemental awards to U.S. graduate students to conduct part of their graduate research at a DOE national laboratory or facility in collaboration with a DOE laboratory scientist. Applications are due on 1 May 2024.

Calls for Abstracts & 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.

The University Marine Energy Research Community (UMERC) and Marine Energy Technology Symposium (METS) have opened the [Call for Papers](#) for the [2024 UMERC+METS Marine Energy Research Conference](#) until 1 March 2024. The conference will take place 7-9 August 2024 in Duluth, Minnesota, U.S.

The [Call for Abstracts](#) for the [3rd Annual Conference for the Sustainable Management of UK Marine Resources \(SMMR 2024\)](#) is now open through 4 March 2024. The hybrid event will take place 14-16 May 2024 in Bristol, England and online.

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.

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.

Career Opportunities

Pacific Northwest National Laboratory (PNNL) is looking for a [Post Masters Research Associate - Human Dimensions of Energy Systems](#) to join the Operational Systems Engineering group within its Earth Systems Science Division. Applications are due 11 February 2024.

The European Marine Energy Centre (EMEC) is seeking two [Administration Officers](#) and a [Senior Administration Officer](#) to support business functions across EMEC. Applications are due 22 February 2024.

EMEC is also looking for a [Marine Energy Development Manager](#) to identify, develop, and secure opportunities for EMEC to grow its portfolio of wave, tidal, and floating wind projects. Applications are due 26 February 2024.

National Renewable Energy Laboratory (NREL) is hiring a [Marine Energy Numerical Modeling Team Lead](#), an [Ocean Energy Systems Regulatory and Stakeholder Engagement Analyst](#), and a [Postdoctoral Researcher Marine Energy Numerical Model and Analysis Engineer](#).

The Energy Control and Optimization lab at the University of New Hampshire is offering multiple [PhD positions in ocean renewable energy systems](#) focused on design optimization and control co-design for wave energy converters (WECs) & WECs for powering the blue economy.

The University of Michigan is offering [multiple Postdoc positions on control co-design or power electronics](#) for 50 W – 500 kW marine energy. These positions require experience on dynamics, motion control, and power electronics design for system at 50W to 500kW power level.

Upcoming Events

Upcoming Webinars

The U.S. WPTO is hosting the [WPTO Semiannual Stakeholder Webinar – Looking Forward](#) on 15 February 2024 from 2:30-4:00pm EST (7:30-9:00pm UTC). Register to learn about WPTO's strategic planning process and the Advanced Manufacturing and Materials for Hydropower Strategy, and external collaborations that could guide next steps in the Marine Energy Program.

Sandia National Laboratories is hosting a webinar, "[MASK4 Test Report and Data Webinar](#)", on 26 March 2024 from 8:00-9:30am PDT (3:00-4:30pm UTC), to provide information on its recently completed testing of the WaveBot device at the U.S. Navy's Maneuvering and Sea Keeping (MASK) basin to further explore WEC co-design principles.

Upcoming Workshops

PNNL and the North Carolina Coastal Studies Institute are hosting two identical workshops on environmental effects of marine energy on [25 March 2024 from 1:00-5:00 pm EDT](#) at the Coastal Studies Institute in Wanchese, North Carolina, U.S., and on [27 March 2024 from 1:00-5:00 pm EDT](#) at the Duke University Marine Laboratory in Beaufort, North Carolina. Please register for the workshop most suitable to your location and schedule.

Upcoming Conferences

Marine Energy Wales is hosting its annual [Marine Energy Wales Conference \(MEW 2024\)](#) on 13-14 March 2024 in Swansea, Wales. Register [here](#).

The National Hydropower Association is hosting [Waterpower Week 2024](#) on 13-15 March 2024 in Washington, D.C., U.S. Register [here](#).

Ocean Energy Europe (OEE) is hosting a members-only [OEE Strategy Day & Annual General Assembly 2024](#) on 26-27 March 2024. The annual event is your chance as an OEE member to connect with other members, to give input into OEE's work, and to get insight into the latest policy and funding initiatives.

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.

[Machine learning-based diagnosis in wave power plants for cost reduction using real measured experimental data: Mutriku Wave Power Plant – M'zoughi et al. 2024](#)

In comparison to wind farms, the relative scarcity of actual operational data from wave power plants has contributed to a significant research gap in the areas of wave farm forecasting and cost reduction. In this context, this manuscript presents a new Machine Learning-based Power Take-Off (PTO) diagnosis for wave energy generation farms which has the potential to serve as an extensive reference for other wave energy farms and offer substantial benefits to both investors and policymakers involved in the advancement of the emerging wave technologies. The suggested method has been employed at the Mutriku Wave Power Plant (WWP) to facilitate the implementation of predictive maintenance strategies and reduce the Levelized Cost of Energy (LCoE).

[On the impact of tidal generation and energy storage integration in PV-rich electric distribution systems – Peerzada et al. 2024](#)

Deep decarbonization of power system operations requires the maximal utilization of available renewable resources. At distribution-level operations, however, grid operators can face numerous challenges in integrating renewables at scale owing to the inherent intermittence of renewable energy resources. These include phenomena such as voltage fluctuations, which are typically mitigated through control actuators such as on-load tap changers (OLTC) as well as energy storage devices, such as battery energy storage systems (BESS). In this paper, we employ a Bayesian framework for equipment lifetime estimation to understand the impact of including tidal energy resources and BESS in distribution system operations for feeders having substantial distribution photovoltaic generation.

[Data-driven model based adaptive feedback-feed forward control schemes for open cycle - OTEC process – Pattanaik et al. 2024](#)

Open Cycle - Ocean Thermal Energy Conversion (OC-OTEC) is one of the most important renewable energy sources that generate electricity and fresh water from seawater utilizing the temperature gradient between the warm surface seawater and the cold deep seawater. This paper aims to develop non-linear data-driven model-based adaptive Feedback Control (FBC) schemes for the OC-OTEC process to track the output power and a dynamic Feed-Forward Control (FFC) scheme to reject the effects of temperature disturbance on power caused by climate variations in OC-OTEC. The experiments are conducted on a laboratory-scale OC-OTEC experimental setup at the National Institute of Ocean Technology, Chennai.

Marine Energy Software Update

[Marine Energy Software](#) is a collection of commercial and open-source software relevant to marine energy, including software for simulating devices, and processing and analyzing data.

[Marine Energy Software has a New Look!](#)

The PRIMRE team has launched a new version of the Marine Energy Software knowledge hub, which now features a more unified and streamlined access to marine energy relevant software for users. Rather than visiting the old Code Hub and Code Catalog pages to search through open-source and commercial software separately, users can now find all that information in one place. Check out the new facets, sort by features, view recent activity on your favorite repositories, and discover new ones! Want to register your own software? Go to the [Register Software](#) page to contribute.

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.

[Standards Page](#)

In addition to pages on each phase of the marine energy development life cycle, [Telesto](#) is home to several pages focused on topics that cover all phases: lessons learned, economics, performance metrics, compliance, and standards. The [Standards page](#) summarizes international standards that are relevant to marine energy development.

A standard is a document that has been developed through expert consensus; is approved and published by a recognized body; and comprises rules, guidelines, processes, or characteristics that allow users to achieve the same outcome. Standards encourage best practices and facilitate communication between developers within a field. Aligning the development of new technologies with international standards can ease negotiations for regulation, certification, and marine insurance.

For marine energy specifically, the [International Electrotechnical Commission \(IEC\) Technical Committee \(TC\) 114](#) has developed over 20 standards applicable to wave, tidal, riverine, ocean current, and ocean thermal energy conversion technologies. Telesto provides a description of each IEC TC 114 standard and links to where the standards themselves may be purchased from the IEC web store.

Other standards that may be applicable to marine energy development, such as those created for the offshore oil and gas industry, are also highlighted on the Standards page, including American Petroleum Institute (API), International Standards Organization (ISO), and American National Standards Institute (ANSI) standards.

News & Press Releases

[Biden-Harris Administration Invests Nearly \\$16 Million to Advance Marine Energy in the U.S. – U.S. DOE](#)

In support of the President's Investing in America agenda, the U.S. DOE recently announced two innovative marine energy projects will receive a combined \$6 million to develop a tidal energy research, development, and demonstration pilot site in the United States. In addition, a community-led river current energy research and development project was selected to receive \$9.5 million. This funding, supported by the Bipartisan Infrastructure Law, encourages U.S. leadership in tidal and current energy development, supporting the Biden-Harris Administration's goals to help communities meet their energy priorities and develop the marine energy sector's supply chain and workforce.

[A Decade of Ocean Energy Crowdfunding – The Liquid Grid](#)

Over the past decade ocean energy crowdfunding has attracted no fewer than 30,000 investors and \$69 million. What's fueling this surge in crowdfunding for ocean energy technologies? Ocean energy start-ups have it rough. They face the mundane tasks of any new business, like finding an office space, as well as the more complex challenge of building hardware that survives for years in the ocean. Before a wave or tidal energy system is connected to the grid and delivering power there are countless tests, permits, models, and site assessments that take significant time and money. Start-ups raise funds from a variety of sources, including angel or impact investors, venture capitalists, family and friends, corporate funds, or government grants. No matter who provides the funds, each balances the risk of losing their investment against the potential upside of a return.

[After TotalEnergies and PTTEP, Shell joins wave power for subsea equipment project – Offshore Energy](#)

Energy major Shell has joined the Renewables for Subsea Power (RSP) collaborative project which is powering subsea equipment off the coast of Orkney, Scotland, through a combination of wave power and subsea energy storage. The £2 million demonstrator initiative, nearing 12 months in the water, has connected the Blue X wave energy converter built by Mocean Energy with Verlume's Halo underwater battery storage system. The fully operational project, located 5 kilometers east of Orkney Mainland, aims to show how green technologies can be combined to provide reliable low-carbon power and communications to subsea equipment, offering a cost-effective alternative to umbilical cables.

[Consortium including Eco Wave Power, Toshiba, Hitachi Energy, and UK Universities Secure £1.5 Million Grant to Develop Wave-Powered Microgrid for Island in Thailand – Eco Wave Power](#)

Eco Wave Power, a leading, publicly traded onshore wave energy company, recently announced that it has won a £1.5 million grant as part of a consortium led by Toshiba

(U.K.) and Aquatera Ltd. (U.K.) to design a pilot microgrid project for a remote island in Thailand. The £1.5 million grant is part of Innovate UK's Energy Catalyst program Round 10, which supports U.K. and international businesses and organizations in developing market-focused technologies that provide clean, affordable and accessible energy. The consortium is led by Toshiba Europe Limited, Aquatera Ltd, and includes Hitachi Energy Ltd., and teams from the University of Manchester, the University of Exeter, the Asian Institute of Technology, and the Queen Mary University of London.

Continued collaboration between Minesto and Swedish Energy Agency – 3 MSEK funding awarded for upgrading of mooring system – Minesto

The Swedish Energy Agency has awarded Minesto a 2.8 MSEK grant to support development and testing of next generation mooring system. The grant co-funds a project through which Minesto will advance performance of the unique tether system that moors the powerplant to the seabed. Minesto has been awarded funding by the Swedish Energy Agency to continue optimization of tethering solutions to further leverage reliability and performance of this core system. The funding is part of the CETPartnership (Clean Energy Transition Partnership) program and include collaboration with Swedish, Spanish and French partners, in coordination by RISE Research Institutes of Sweden.