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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

Power at Sea Prize Submissions Open

The U.S. Department of Energy's (DOE) Water Power Technologies Office (WPTO) is accepting submissions for the [Powering the Blue Economy: Power at Sea Prize](#), which awards competitors to advance technologies that use marine energy to power ocean-based activities, through 26 July 2024.

Calls for Abstracts

The American Geophysical Union (AGU) has opened the [Call for Abstracts](#) for the [AGU 2024 Annual Meeting](#) through 31 July 2024. AGU 2024 will take place 9-13 December 2024 in Washington, D.C. and will feature a session on [Marine Energy to Power the Blue Economy](#).

The Ocean Thermal Energy Association has opened the Call for Speakers for the [10th International Ocean Thermal Energy Conversion \(OTEC\) Symposium](#) through 31 July 2024. The symposium will take place 4-5 December 2024 in Rio de Janeiro, Brazil.

The Call for Abstracts for [7th Asian Offshore Wind, Wave and Tidal Energy Conference \(AWTEC 2024\)](#) has been extended through 31 July 2024. AWTEC will take place 20-24 October 2024 in Busan, South Korea.

The Marine Alliance for Science and Technology for Scotland (MASTS) has opened the [Call for Abstracts](#) for the [MASTS 2024 Annual Science Meeting](#) through 22 August 2024. The meeting will take place 5-7 November 2024 in Glasgow, Scotland.

The [Call for Abstracts](#) for the [Offshore Technology Conference \(OTC 2025\)](#) is open through 10 September 2024. OTC will take place 5-8 May 2025 in Houston, Texas, U.S.

Funding & Testing Opportunities

The U.S. Advanced Research Projects Agency-Energy (ARPA-E) recently announced up to \$150 million in funding through its [Vision OPEN Call](#) to develop ground-breaking systems that provide abundant primary energy, enable intermodal energy transport, and sustainably meet demand for polymer and other materials. Concept papers are due 16 July 2024.

The U.S. DOE's WPTO recently opened a [\\$5 million funding opportunity](#) to support programs that will support programming and services for entrepreneurs and small businesses in marine energy. Concept papers are due 7 August 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 \(RFTS\) 14](#) applications through 4 October 2024 to support marine energy testing and development projects. Open Water Support applications can be submitted any time.

Career Opportunities

The University of Hawai'i is looking for a [Technical Program Manager](#) to manage the U.S. Navy's Wave Energy Test Site, marine energy research & development, and other Department of Defense-funded marine energy research projects. Applications are due 19 July 2024.

The European Marine Energy Centre (EMEC) is looking for a [Senior Process Engineer](#) to support the design, development, operation, safety, and continual improvement of hydrogen production at both client and EMEC owned sites. Applications are due 19 July 2024.

Upcoming Events

Upcoming Webinars

The U.S. TEAMER program is hosting its [State of the Network Webinar](#) on 16 July 2024 from 11:00am-12:30pm PDT (6:00-7:30pm UTC). The webinar will feature program updates, testing highlights from the past year, and news for the future of the program. [Register here.](#)

The U.S. DOE's WPTO is hosting its [WPTO Semiannual Stakeholder Webinar: AI, Machine Learning, and Water Power](#) on 22 August 2024 from 12:30-2:00pm EDT (4:30-6:00pm UTC). The webinar will feature experts from WPTO for a discussion on artificial intelligence and

machine learning, including where they see potential benefits and uses of these tools in the hydropower and marine energy sectors and where they may already be in use.

Upcoming Masterclass

The Supergen Offshore Renewable Energy Hub is hosting a [Masterclass on Real-Time Hardware-in-the-Loop Experiments for Grid Integration of Offshore Renewable Energy Systems](#) on 4 September 2024 at the University of Warwick in Coventry, England. [Register here.](#)

Upcoming Conferences

The [University Marine Energy Research Community \(UMERC\) + Marine Energy Technology Series \(METS\) Conference 2024](#) will take place on 7-9 August 2024 in Duluth, Minnesota, U.S.

The [International Conference on Ocean Energy \(ICOE 2024\)](#) will take place on 17-19 September 2024 in Melbourne, Australia. The [preliminary program](#) is now available.

The National Hydropower Association is hosting [Clean Currents 2024](#) on 7-10 October 2024 in Portland, Oregon.

Ocean Energy Europe is hosting the [Ocean Energy Europe 2024 Conference & Exhibition](#) on 5-6 November 2024 in Aviemore, Scotland.

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.

[System identification and centralised causal impedance matching control of a row of two heaving point absorber wave energy converters](#) – Vervaet et al. 2024

Similar to offshore wind turbines, multiple point absorber wave energy converters (WECs) will be installed in an array configuration, to increase the total capacity, and to benefit from the economies of scale. Whereas wind turbines always interact destructively due to wake effects, WECs can interact constructively, since hydrodynamic interactions between the WECs occur through radiation and diffraction of waves, changing the direction of the incoming wave energy. This paper presents the dataset and results of the experimental modelling of a row of two ‘WECfarm’ heaving point absorber WECs at the wave basin of Aalborg University (AAU). Impedance matching enables maximum power transfer between two oscillatory systems, from the waves to the Power Take-Off (PTO) of the WEC.

[Structural analysis of small-scale 3D printed composite tidal turbine blades](#) – Gonabadi et al. 2024

The existing research literature lacks comprehensive investigations into assessing the structural performance of marine renewable energy conversion devices, particularly 3D printed turbine blades, which often rely solely on computational modelling without experimental validation methods and/or established mechanical characterization techniques. This leads to significant uncertainty regarding the performance of 3D printed turbine blades manufactured by additive manufacturing technology. This study aims to fill this gap by proposing a procedure for evaluating the structural integrity of commercial small-scale tidal turbine blade (5 KW) manufactured using fused filament fabrication 3D printing with a linear infill pattern.

[Theoretical modeling of a bottom-raised oscillating surge wave energy converter structural loadings and power performances](#) – Nguyen et al. 2024

This study presents theoretical formulations to evaluate the fundamental parameters and performance characteristics of a bottom-raised oscillating surge wave energy converter (OSWEC) device. Employing a flat plate assumption and potential flow formulation in elliptical coordinates, closed-form equations for the added mass, radiation damping, and excitation forces/torques in the relevant pitch-pitch and surge-pitch directions of motion are developed and used to calculate the system's response amplitude operator and the forces and moments acting on the foundation. The model is benchmarked against numerical simulations using WAMIT and WEC-Sim, showcasing excellent agreement. The sensitivity of plate thickness on the analytical hydrodynamic solutions is investigated over several thickness-to-width ratios ranging from 1:80 to 1:10.

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](#)

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, Pacific Northwest National Laboratory, and Sandia National Laboratories. Check out the [Dive Into the Marine Energy Atlas video](#) on YouTube now!

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.

[OIST Maldives Demonstration](#) – Okinawa Institute of Science and Technology Graduate University (OIST)

The Okinawa Institute of Science and Technology Graduate University (OIST) signed a Memorandum of Understanding (MOU) with the Ministry of Environment and Energy (MEE) of the Republic of Maldives and Kokyo Tatemono Company Ltd. of Japan, to embark on a demonstration wave energy project in Kandooma Island, Maldives. OIST's technology uses an array of wave energy converter (WECs) consisting of turbines that are placed at the wave-breaking zone to generate electricity. Kandooma Island was chosen as the field test site for this project because the wave-breaking zone is very close to the island, thus convenient to transport the experimental equipment.

[EEL Energy Pilot](#) – EEL Energy

Located in the Port of Brest, this pilot project is the first open water test campaign of EEL Energy's 30-50 kW tidal generator. Based on the concept of bio-mimicry, EEL Energy's tidal energy converter has been designed to replicate the undulating movements of marine life to produce clean power. Energy is captured along the whole length of the membrane surface which undulates under moving fluid pressure, and this periodic motion is transformed into electricity by an electromechanical system. The results of tests in the Port of Brest will help to validate the design of the machine, which according to EEL Energy is 10 times more powerful than the prototypes tested earlier.

News & Press Releases

[Successful Completion of 3rd Generation Drakoo Wave Energy Converter Sea Trial in Shengsi](#) – Hann-Ocean Energy

Hann-Ocean Energy announced on 8 July 2024, the successful completion of its wave energy conversion project on Shengsi Island, Zhejiang Province, following an extensive two-and-a-half-year sea trial. Launched in January 2022, the project primarily aimed to test the performance and stability of the Drakoo 15kW wave energy converter and evaluate various coating schemes to inform the selection of more durable technologies for future applications. Throughout the sea trial, the wave energy converter not only demonstrated its reliability under extreme weather conditions but also exhibited higher energy conversion efficiency in the open sea compared to previous pool tests.

Wavepiston to announce collaboration with Ørsted. – Wavepiston

Wavepiston has started a collaboration with Ørsted to investigate the potential for co-location of offshore wind and wave energy in Denmark. The collaboration will analyse the benefits of combining offshore wind and wave energy and show the potential of optimising the energy yield from the natural resources available in Danish waters. A co-location of offshore wind and wave energy presents a multitude of benefits, including increased energy production, enhanced grid stability, cost efficiency, and environmental benefits. Emiel Schut, CCO, says, “We are excited about the opportunities this collaboration presents and the positive impact it can have on the environment and energy market of the future.”

Decommissioning of tidal energy platform – Ocean Kinetics

Scottish engineering partners, Ocean Kinetics and Green Marine (UK) have successfully completed the first phase of decommissioning a tidal energy platform at EMEC’s Falls of Warness test site in the Orkney Islands. The contract to decommission the facility, which was previously operated by OpenHydro to streamline its tidal turbine technology, was awarded by EMEC in early April this year. Ocean Kinetics divers, riggers, welders and ROV operators are deployed alongside Green Marine’s offshore management, vessel, mooring and operational cable services, with both companies carrying out the operational engineering, cutting and heavy lifts. To return the seabed to its original condition, diamond wire cutting machines will cut each pile foundation flush to the seabed.

Ocean Power Technologies signs MoU with AltaSea to explore marine energy opportunities – Offshore Energy

Ocean Power Technologies, Inc., a leader in innovative and cost-effective low-carbon marine power, data, and service solutions, recently announced it has signed a Memorandum of Understanding (MOU) with AltaSea at the Port of Los Angeles (AltaSea). The joint aim is to explore exciting opportunities within the Blue Economy. This agreement follows a recent visit to AltaSea by Philipp Stratmann, CEO and President of OPT. OPT provides intelligent maritime solutions and services that enable safer, cleaner, and more productive ocean operations for the defense and security, oil and gas, science and research, and offshore wind markets.

The Marine Energy Council announces 13 new Lead Partners – UK Marine Energy Council

The Marine Energy Council (MEC) is proud to announce 13 new companies have joined the industry group as Lead Partners. These Lead Partners will support the MEC’s ambition to make the UK the world leader in tidal stream and wave energy. The MEC, established in 2018, has been instrumental in improving the investment landscape for marine energy in the UK. This includes securing three successive tidal stream ringfences in the UK’s renewable auctions, and raising the profile of wave energy’s role in the future

energy mix. The MEC has undergone an exciting period of growth, with new members joining from around the world and across the marine energy value chain.

[Australian wave energy prototype gears up for deployment after performance data review](#)

– Offshore Energy

The Moored MultiModal Multibody (M4) wave energy prototype project by the University of Western Australia (UWA), SMC Marine, and Everett Consulting, funded by local and national entities, will be deployed for the 2024-2025 summer period in King George Sound, Western Australia. The project aims to convert wave energy into electricity to provide a constant electrical supply to a coastal microgrid for local customers, said Weld Australia, who visited the M4 prototype in early June 2024. Over six months, the device will generate electricity from the hinging motion. Data collected will model wave energy's potential for continuous baseload energy and assess the device's performance and survivability in various sea conditions, said Weld Australia. This data will be publicly available in real time to evaluate the feasibility of a full-scale device powering a local microgrid.