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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 Telesto Overview Video

The PRIMRE team has released a new 2-minute [Telesto Overview Video](#) highlighting the Knowledge Hub's key features and uses. Dive in to learn more!



Contributing to the PRIMRE Blast

Do you have a marine energy announcement, career or funding opportunity, new document (e.g., journal article, paper, report), or relevant news to contribute to the [PRIMRE Blast](#)? Please email tethys@pnnl.gov to contribute relevant content to the PRIMRE Blast and/or [Tethys Blast](#).

EnergyTech UP

The U.S. Department of Energy's (DOE) Office of Technology Transitions has opened registration for the [EnergyTech University Prize \(EnergyTech UP\)](#), where student teams will compete for cash prizes for identifying a promising energy technology, assessing its market potential, and creating a business plan for commercialization. Informational webinars will take place on 23 January 2025. Faculty submissions are due 13 January 2025 and student registration for the Explore Phase is due 3 February 2025.

Marine Energy Fellowship

The U.S. DOE's Water Power Technologies Office (WPTO) and the Oak Ridge Institute for Science and Education (ORISE) are accepting applications for the [2025 Marine Energy Fellowship](#), which features one track for graduate students working on marine energy-focused research and a new post-graduate track for recent graduates advancing their careers in marine energy. Applications are due 7 March 2025.

Calls for Abstracts

The [Call for Abstracts](#) for [OCEANS 2025 Brest](#) is open through 20 December 2024. OCEANS 2025 Brest will take place from 16-19 June 2025 in Brest, France. The organizers are seeking cutting-edge technical presentations with an emphasis on marine energy, environmental marine engineering, and a digital ocean.

The [Call for Abstracts](#) for the [40th International Workshop on Water Waves and Floating Bodies \(IWWWFB 2025\)](#) is open through 10 January 2025. The workshop will take place on 11-14 May 2025 in Shanghai, China.

The [Call for Abstracts & Paper Submissions](#) for the [16th European Wave and Tidal Energy Conference \(EWTEC 2025\)](#) has now opened until 13 January 2025. EWTEC will take place on 7-11 September 2025 in Madeira, Portugal.

The [Call for Abstracts](#) for the [European Geoscience Union \(EGU\) General Assembly 2025](#) is now open through 15 January 2025. The EGU General Assembly 2025 will take place on 27 April–2 May 2025 in Vienna, Austria and online.

Funding & Testing Opportunities

The U.S. DOE has released the [Phase I Release 2 topics](#) for the [Small Business Innovation Research \(SBIR\) and Small Business Technology Transfer \(STTR\) Program](#). The Funding Opportunity Announcement will be released on 16 December 2024 and letters of intent will be due 7 January 2025.

Washington Maritime Blue, a leading maritime innovation cluster in the Pacific Northwest, has opened applications for its [2025 Blue Ventures Programs](#), which will support early-stage

founders validating their technology and preparing for market entry, including for renewable ocean energy. Applications are due 6 January 2025.

Horizon Europe has opened a Call for Proposal, [Critical technologies for the future ocean energy farms](#). Projects are expected to increase performance of ocean energy technologies with the focus on sustainability, operation, and maintenance; improve knowledge on how to operate ocean energy devices; and reduce levelized cost of interest. Proposals are due 4 February 2025.

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 \(RFTS\) 15](#) applications through 7 February 2025 to support marine energy testing and development projects. Open Water Support applications can be submitted any time. TEAMER is now offering [Results Dissemination Support](#) (i.e., travel and publication support).

The U.S. DOE Office of Clean Energy Demonstrations (OCED) has opened applications for up to \$400 million, through [the Energy Improvements in Rural or Remote Areas \(ERA\) Program](#), to spur innovative, community-focused, clean energy solutions for rural and remote communities across the United States. Concept papers are due by 27 February 2025.

Career Opportunities

University of College Cork is inviting applications for a [Post-Doctoral Researcher or Senior Post-Doctoral Researcher](#) to work within the Offshore Renewable Energy Research Group in MaREI/Lir – NOTF. Applications are due 20 December 2024.

Pacific Northwest National Laboratory is soliciting applications for a [Postdoctoral Research Associate – Coastal Biogeochemistry](#) to study different marine carbon dioxide removal (mCDR) technologies. Applications are due 13 January 2025.

Northumbria University is offering a [PhD opportunity to develop high-fidelity CFD models for offshore energy systems](#), such as wave energy converters and floating offshore wind turbines. Applications are due 3 February 2025.

East Carolina University (ECU) is recruiting a [PhD in Integrated Coastal Sciences](#) to study the social acceptance and engagement around introducing marine energy technology and participate in Atlantic Marine Energy Center (AMEC) activities. Priority applications to the ECU program are due 15 February 2025.

CorPower Ocean is offering several job opportunities, including [Lead Marine Operations Engineer - Wave Energy](#), [Subsea Design Engineer - Wave Energy](#), [Mechanical Design Engineer \(Collection Hub\)](#), and [Mechanical Design Engineer \(Power Take Off\)](#).

European Marine Energy Centre (EMEC) is looking for an [Operations & Technology Director](#) to lead EMEC's operational, technical and project delivery activities, ensuring safe, efficient and high-quality outcomes.

Upcoming Events

Webinar Recordings Available

Australia's Blue Economy Cooperative Research Centre has shared the webinar recording for "[Ocean Wave Energy in Australia](#)", which it recently hosted on 3 December 2024. The webinar discussed a [recent report](#) that details the Australian wave resource, the markets and integration potential for wave energy, as well as the regulatory, environmental, social and cultural factors.

The National Aquaculture Association has shared the webinar recording for "[Opportunities for the Co-location of Marine Energy and Aquaculture](#)", which it recently hosted on 6 December 2024. During the webinar, researchers from the Pacific Northwest National Laboratory (PNNL) shared the results of their efforts to date in Washington, as well as outcomes of similar investigations in Hawaii, California, and Puerto Rico.

Upcoming Webinar

The International Ocean Energy Technology Collaboration Program (IEA-OES) is hosting a webinar, "[Restitution of activities carried out in France](#)", on 18 December 2024 from 9:00-10:00am UTC. The webinar will be hosted in French and provide an overview of the activities carried out by France Énergies Marines and feature a discussion with Ifremer.

Upcoming Conferences

The National Hydropower Association is hosting [Water Power Week 2025](#) from 31 March to 2 April 2025 in Washington, DC, U.S. Registration is now open.

Marine Energy Wales recently announced that it is hosting its [Marine Energy Wales Conference 2025](#) on 7-8 May 2025 in Wales. More details coming soon.

Upcoming Course

The Atlantic Marine Energy Center is hosting a fully funded, intensive course, [Introduction to Marine Energy](#), from 3-9 August 2025 at the University of New Hampshire in Durham, New Hampshire (U.S.). The course is designed for U.S. undergraduate students (rising juniors and seniors) and beginning graduate students interested in the field of marine energy. Applications are due 10 January 2025.

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.

[Simulation of an Autonomous Surface Vehicle With Colocated Tidal Turbine](#) – Weicht et al. 2024

Utility-class autonomous surface vehicles (ASVs) are small watercraft that can be equipped with environmental sensors used to collect data in coastal and marine locations. Their operation is constrained by energy storage limits, but with adequate resources, marine energy presents an opportunity to provide power in remote locations. To demonstrate the feasibility of using tidal energy to support ASV operations, we created a MATLAB-Simulink modeling tool. The model simulates an ASV performing surveys and charging at a nearby tidal turbine. Model components include the tidal turbine, generator, battery storage dynamics, ASV kinetics, and ASV control schemes. We refined the tool using experimentally collected data in the tidal-resource-rich Sequim Bay, which has been proposed for tidal energy testing, to empirically identify vehicle hydrodynamic drag and inertial coefficients.

[Understanding the uncertainty in the technical performance level assessment for wave energy](#) – Trueworthy et al. 2024

The design of wave energy converters (WECs) has been explored with interest, with varying design concepts emerging across both research and industry. WEC performance has been assessed using the Technology Performance Level (TPL) assessment, which provides designers with a quantitative score, situating a grid-scale WEC concept on a scale from 1 to 9. One concern that may be slowing developers' adoption of TPL is the inherent uncertainty in the assessment, and how uncertainty in the individual questions may contribute to the final score. In this work, we quantify the uncertainty present in the assessment using both traditional mathematical operations and a Monte Carlo simulation. Results show areas of improvement of the TPL assessment, enabling TPL practitioners and users to understand with more accuracy those design elements that can be improved to impact device performance.

[Thermodynamic and economic analysis of ocean thermal energy conversion system using zeotropic mixtures](#) – Zhang et al. 2024

Zeotropic mixtures offer a promising strategy for enhancing the thermodynamic efficiency and economic feasibility of ocean thermal energy conversion (OTEC) systems. This study investigates two binary mixtures containing R32: R32/R125 and R32/R134a. Through the development of comprehensive thermodynamic and economic models, the research examines the impact of mass fraction and evaporation temperature on the efficiency and cost-effectiveness of the OTEC system. The results indicate that, especially at high evaporation temperatures, the R32/R134a mixture—characterized by significant temperature glide—substantially increases the total energy production capacity of the OTEC system. Compared to pure R32, the OTEC with R32/R134a (mass fraction of R32 is 0.55) has a net output power increase of 9.87 kW and a reduction in LCOE of about 61.4%.

MHKDR Highlight

The Marine Hydrokinetic Data Repository ([MHKDR](#)) is the repository for all data collected using funds from the U.S. DOE's WPTO, including results from tank tests and open sea trials.

[Version 2 - Tidal Energy Resource Characterization, Velocity and Turbulence Measurements, Cook Inlet, AK, 2021](#) – Pacific Northwest National Laboratory 2021

Version 2 of MHKDR [submission #475](#), which also contains the metadata for these measurements. This submission contains processed datasets from a long-term deployment of 3 moorings and a transect survey of the proposed tidal energy site off the East Forelands in Cook Inlet, AK.

[Northwest National Marine Renewable Energy Center, OR - Project Plans](#) – Northwest National Marine Renewable Energy Center 2016

This submission features plans for the Northwest National Marine Renewable Energy Center (NNMREC) project, including Mobile Ocean Test Berth (MOTB) plans and Pacific Marine Energy Center - South Energy Test Site (PMEC-SETS) plans.

[Admiralty Inlet Advanced Turbulence Measurements: June 2014](#) – National Renewable Energy Laboratory 2014

This data is from measurements at Admiralty Head, in Admiralty Inlet (Puget Sound) in June of 2014. The measurements were made using Inertial Motion Unit (IMU) equipped ADVs mounted on Tidal Turbulence Mooring's (TTMs). The TTM positions the ADV head above the seafloor to make mid-depth turbulence measurements. The inertial measurements from the IMU allows for removal of mooring motion in post processing.

Marine Energy Software Update

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

[Capytaine v2.2.1 Release](#)

[Capytaine](#) is a Python package for the simulation of the interaction between water waves and floating bodies in the frequency domain. It is built around a full rewrite of the version 2 of the open-source Boundary Element Method (BEM) solver Nemoh for the linear potential flow wave theory. [Capytaine v2.2.1](#) features a few bug fixes when using a lid and clipping the mesh at the free surface and when using a symmetric mesh with the direct solver.

[Tsdatt v 0.8.6, 0.8.7, and 0.8.8](#)

[Tsd](#) is an open-source Python framework developed by PNNL that makes creating pipelines to process and standardize time-series data easier, clearer, and quicker to stand up, so that you can spend less time data-wrangling and more time on data analysis. Tsd now features automated unit conversion, simpler configuration files, and improved documentation to name a few. Check out the [most recent version of Tsd](#) today!

Call for Contributions: Marine Energy Software

Like most open-source resources, the more information users contribute, the better the resource becomes! The Marine Energy Software knowledge hub is no different. With each software addition to the knowledge hub, the better it becomes for users in the marine energy industry. Have a software you'd like to contribute to the Marine Energy Software knowledge hub? Visit the [Register Software](#) page to add your software today!

News & Press Releases

Investment of Nearly \$2 Million in Projects to Harness Wave Energy to Produce Clean Drinking Water – U.S. DOE

The U.S. DOE's WPTO announced nearly \$2 million for projects at two universities to advance research on wave-powered technology to desalinate seawater. These projects focus on harnessing wave energy to produce clean drinking water. The two selected projects are: A Wave-Powered Pumpless Seawater Desalination System and Hydraulic Switch-Mode Power Transformer Power-Take Off for Wave-Powered Reverse Osmosis Desalination. Purdue University, based in West Lafayette, Indiana, will develop a wave-powered desalination system that uses hydraulics instead of electricity. The University of Minnesota, based in Minneapolis, will advance an innovative power take-off system for a wave-powered desalination system designed to produce both electricity and clean drinking water.

Oneka Technologies and Asfalcom together contributing to water security in Chile – Oneka Technologies

Oneka Technologies and Asfalcom are proud to announce the signing of a Memorandum of Understanding (MOU) to deploy an innovative water supply solution at Asfalcom's production facility in Chile. This partnership marks a significant milestone in advancing the adoption of groundbreaking water solutions for industrial operations in South America. The MOU underscores the commitment of both companies to sustainability and innovation. Asfalcom's production facility is set to become the first industrial water user in South America to integrate Oneka's wave-powered desalination technology. The MOU also marks an important milestone for Oneka Technologies, representing the company's first step into Chile and the broader South American market.

Minesto completes Hestfjord Dragon Farm specification based on Dragon 12 achievements – Minesto

After successful commissioning and four months of grid connected operation with Dragon 12, this autumn Minesto has focused on evaluation of powerplant performance, analysis of critical technical systems and operating procedures, as well as identification of selective upgrades of the megawatt-scale power plant. An integral part of this work is a third-party technology review performed by independent expert DNV. In parallel, further site development work to assess and compare tidal flow conditions between the existing site in Vestmanna and Hestfjord has been advanced, confirming excellent conditions for operation at the site in Hestfjord. Relying on this work, Minesto has completed the overall design and technical specification of the upgraded Dragon 12 system targeting the first Dragon farm in Hestfjord (Phase 1: 10MW) in the Faroe Islands.

DNV confirms feasibility of C-Power's ocean energy systems – Offshore Energy

U.S.-based marine energy company C-Power's SeaRAY ocean energy system has secured a statement of feasibility from third-party verifier DNV, paving the way for its deployment at PacWave South, located off the Oregon coast, in 2025. C-Power's CTO, Ryan Calder said: "Third-party qualification milestones go a long way toward building confidence in what we are doing and in the industry as a whole." According to C-Power, this achievement marks progress for the company, as the SeaRAY system, designed for low-power offshore energy needs, and its high-power counterpart, StingRAY, have received similar feasibility statements from DNV. The next step in the SeaRAY's journey will be obtaining a statement of qualified technology for the Oregon deployment.

Biden-Harris Administration identifies 4 business 'accelerators' to boost the Blue Economy: Ocean entrepreneurs to spur new technology, services that strengthen our coasts – U.S. National Oceanic and Atmospheric Administration (NOAA)

The Department of Commerce and NOAA announced that it is recommending awards totaling \$54.3 million to four organizations to support small businesses and entrepreneurs. Organizations will use these funds to bring to market solutions that will benefit coastal resilience and a sustainable Blue Economy. The selection demonstrates NOAA's commitment to advance maritime commerce and inspire the next generation of Blue Economy leaders. This investment is funded by the Inflation Reduction Act as part of the Biden-Harris Administration's Investing in America agenda. The four organizations, deemed business "accelerators," will provide guidance, support and funding to help small businesses scale quickly to spur the development of technologies and services that address a wide range of maritime issues. They were recommended for awards through the Ocean-Based Climate Resilience Accelerators program.

Spiralis Energy's tech reveal brews change with tidal energy for 'price of cup of tea' – Offshore Energy

London-based tidal energy developer Spiralis Energy has launched its national 'Tides2Tea' campaign, which aims to raise public awareness and support for tidal energy, setting the stage for 2025 testing in Alderney waters. By linking the campaign to

something as ordinary as brewing a cup of tea, the initiative seeks to simplify public engagement while showcasing the potential of Spiralis Energy's tidal energy technology. The campaign invites the public to symbolically purchase a cup of tea powered by tidal energy for a small donation. In return, participants' names will be inscribed on Spiralis Energy's inaugural Axial Skelter technology, slated for testing in Alderney waters in 2025. According to the UK tidal energy developer, the campaign underscores the affordability and reliability of tidal energy as a renewable power source.

EuropeWave at OEE2024: Advancing Wave Energy Towards Commercialisation – EuropeWave

The third annual EuropeWave event took place on 5 November 2024 in Aviemore, Scotland, as a side event to the Ocean Energy Europe Annual Conference (OEE2024), where ocean energy experts, national and regional authorities, supply chain companies and test centres gathered together to explore cutting-edge innovations and discuss pathways for the commercialisation of ocean energy technologies. The event opened with a warm welcome and introduction from Wave Energy Scotland (WES), which set the stage by outlining EuropeWave's mission to accelerate innovation in wave energy technology through its pre-commercial procurement (PCP) programme. Now in its third and final phase, the programme is supporting three standout projects, which presented their progress to date: ACHIEVE by CETO Wave Energy Ireland Limited; MARMOK Atlantic by IDOM Consulting, Engineering, Architecture S.A.U.; and Blue Horizon by Mocean Energy Limited.