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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 United States 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 Atlas User Review

The PRIMRE team requests your assistance in reviewing the [Marine Energy Atlas](#), an online, knowledge hub used to visualize, analyze, and download spatial data on marine energy. Please complete this [short survey](#) by 19 May 2023 to help us determine how researchers, developers, and other stakeholders use the Atlas and to get feedback on how to improve the resource.

MECC Applications Open

The U.S. Department of Energy's (DOE) Water Power Technologies Office (WPTO) has opened applications for the 5th annual [Marine Energy Collegiate Competition \(MECC\)](#), which challenges multidisciplinary teams to develop solutions for ways marine energy can help power the blue economy. Both U.S. and non-U.S. institutions can apply, but only U.S. institutions are eligible for WPTO funding. Applications are due 24 April 2023. Applications for the 2nd [Hydropower Collegiate Competition \(HCC\)](#) are also open.

InDEEP Applications Open

The U.S. DOE's WPTO recently launched the [Innovating Distributed Embedded Energy Prize \(InDEEP\)](#), which will award up to \$2.3 million to competitors investigating novel technologies for harnessing and converting the power of ocean waves into usable types of energy. Join the prize team for a [series of webinars](#) between April and July as they share additional information about the competition and answer your questions. Phase I applications are due 25 August 2023.

Internship Applications Open

The U.S. DOE's Office of Science has opened Fall term applications for the [Science Undergraduate Laboratory Internships \(SULI\)](#) program, [Community College Internships \(CCI\)](#) program, and [Visiting Faculty Program \(VFP\)](#). Applications are due on 25 May 2023.

FOSTWIN Control Competition

Sandia National Laboratories, in conjunction with Oregon State University and Evergreen Innovations, is hosting the [FOSWEC Digital-Twin \("FOSTWIN"\) Control Competition](#) to develop an effective power absorption controller for a digital twin of the Floating Oscillating Surge Wave Energy Device (FOSWEC). Try your hand at generating the most electrical power on a real-time digital-twin system for a chance to win reimbursement for travel to a control workshop at the Maneuvering and Sea Keeping Basin. Submissions are due 16 June 2023.

Calls for Abstracts

The [Call for Abstracts](#) for the [University Marine Energy Research Community \(UMERC\) 2023 Conference](#) is now open through 12 May 2023. UMERC 2023 will take place on 4-6 October 2023 in Durham, New Hampshire, U.S. Apply for travel/registration support by 15 June 2023.

The [Call for Abstracts](#) for [OCEANS 2023 Gulf Coast](#) has been extended through 1 May 2023. OCEANS 2023 Gulf Coast will take place 25-28 September 2023 in Biloxi, Mississippi, U.S.

The Call for Abstracts is now open for the [Structures in the Marine Environment \(SIME\) 2023 Conference](#) until 12 May 2023. SIME will take place on 28 June 2023 in Glasgow, Scotland.

The [Call for Sessions and Town Hall Proposals](#) for Ocean Sciences Meeting 2024 is now open through 24 May 2023. Ocean Sciences Meeting 2024 will take place from 18-23 February 2024 in New Orleans, Louisiana, U.S. and online.

Funding & Testing Opportunities

The U.S. DOE has opened applications for the [Energy Transitions Initiative Partnership Project \(ETIPP\)](#) for remote and island communities seeking technical assistance to transform their energy systems and increase energy resilience. Applications are due 19 May 2023.

The U.S. DOE's Office of Clean Energy Demonstrations recently announced \$15 million for the [Energizing Rural Communities Prize](#) to help rural communities build capacity needed for clean energy development and deployment. Submissions for the first round are due 24 May 2023.

The U.S. Ocean Energy Safety Institute (OESI) has launched a [Request for Proposals](#) focused on two target areas: small-scale marine energy solutions that enhance the safety, security, and sustainability of offshore wind and oil & gas operations; and utility-scale marine energy solutions that enhance marine energy operations. Submissions are due 19 June 2023.

Student & Employment Opportunity

Pacific Northwest National Laboratory is seeking a [Blue Economy Specialist](#) with a strong background in the blue economy to support regional and national maritime sectors accelerate maritime innovation and sustainability. Applications are due by 29 April 2023.

Upcoming Events

Upcoming Webinars

Sandia National Laboratories is hosting a webinar for students and educators across the country to learn about water power on 24 April 2023 from 12:00-1:00pm PDT (7:00-8:00pm UTC). During the webinar, researchers will explain the benefits of water power and share their personal experiences from working in the field. Register [here](#).

The European Technology & Innovation Platform for Ocean Energy (ETIP Ocean) is hosting a [webinar](#) on 27 April 2023 at 3:00pm CEST (1:00pm UTC). During the webinar, speakers from the Tidal Stream Industry Energiser Project (TIGER) project will share guidelines for project permitting in the UK and France. Register [here](#).

Upcoming Workshops

After successful Ocean Energy Systems (OES) Workshops on Marine Energy Data Sharing in 2021 and 2022, the PRIMRE team is also hosting a third online workshop on 2 May 2023 from 3:00-5:00 PM UTC. We are particularly looking for those who develop or manage marine energy databases, portals, and/or tools. Please register [here](#) by 24 April 2023 and email questions [here](#).

The University of Illinois Urbana-Champaign and North Carolina State University are hosting a [Workshop on Control Co-Design](#) on 4-6 May 2023 in Champaign, Illinois, U.S. Sponsored by the National Science Foundation, the workshop will focus on bringing together a diverse set of viewpoints related to the topic of combined physical and control system design. Register [here](#).

Upcoming Conferences

[OCEANS 2023 Limerick](#) will take place on 5-8 June 2023 in Limerick, Ireland. Early bird registration is available [here](#) before 25 April 2023.

Pacific Ocean Energy Trust is hosting [Ocean Renewable Energy Conference 2023](#) on 21-22 June 2023 in Portland, Oregon, U.S. Early bird registration is available [here](#) before 12 May 2023.

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.

Characterising the wave energy resource of Lanzarote, Canary Islands – Christie et al. 2023

Waves of varying magnitude and frequency, characteristic of all coastal locations throughout the world, could be converted into electricity via wave energy converters. However, one challenge with wave energy conversion is lack of knowledge of the regional distribution of wave properties, and how the wave power varies at inter- and intra-annual timescales. Here, we apply physics- and non-physics-based approaches to accurately simulate the wave climate of the Canary Islands—a region in the eastern North Atlantic that relies heavily on the import of diesel to generate much of its electricity. Over the 11-year time period of the physics-based wave hindcast, the annual mean wave power of Lanzarote, one of the largest of the Canary Islands was approximately 25 kW/m along the exposed north-western coast of the island.

Hydrodynamic independence and passive control application of twist and flapwise deformations of tidal turbine blades – de Arcos et al. 2023

The load-induced deformations experienced by axial-flow rotor blades can result in significant hydrodynamic impacts on rotor operation. These changes in hydrodynamics are dominated by the flapwise and twist deformation components, affecting blade loading and performance. This work uses blade-resolved computational fluid dynamics simulations to explore the hydrodynamic interactions of coupled flapwise and twist deformations, and their potential for use in passive control strategies. The rotor blades were simulated under parametrically prescribed flapwise-only, twist-only and coupled flapwise–twist deformations. The results show that the hydrodynamic effects are adequately described by blade-element theory for twist deformations regardless of the presence of flapwise deformations, whereas flapwise deformations induce changes in the local lift and drag coefficients that are independent of twist.

Reliable control of turbine–generator set for oscillating-water-column wave energy converters: Numerical modelling and field data comparison – Carrelhas & Gato 2023

Global energy strategy has quickly shifted to a new paradigm. Countries understand the importance of a near-zero carbon energy mix and the need to reduce their energy imports and become energy independent. One immediate solution is the re-enforcement of renewable energy infrastructures such as wind, solar and hydro generation. However, certain sectors, particularly the Blue Economy, may need a different solution. The oscillating-water-column (OWC) wave energy converter is a proven concept, many prototypes of which are already being deployed on the open sea, and can help bridge this gap. Energy harvesting from this system will be improved if more efficient (and reliable) power take-off (PTO) systems and control algorithms are used. A novel control algorithm for a turbine–generator set was developed based on the physical interactions between the PTO and the OWC system.

Marine Energy Projects Database Updates

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

[Barbados Wave Energy Farm](#) – Wello Oy

Finnish wave technology provider Wello Oy and the Barbadian Barbados Investment and Development Corporation partnered for deployment of a 5 MW wave energy farm in Consett Bay, Barbados. Wello, is a Finnish company with over a decade of experience in wave energy conversion technology. Their unique way of capturing wave energy by their technology, The Penguin, is by way of a floating vessel which captures the waves' rotational power and converts it into clean ocean energy. The wave power park will be 5 MW in nominal power in the beginning. There is already a plan and an option to extend up to 50 MW feeding the power into a hydrogen production plant.

[Igiugig Alaska](#) – Ocean Renewable Power Company (ORPC)

In 2014, ORPC built and operated its RivGen® Power System, the Company's first river energy project, delivering power to the remote Alaskan village of Igiugig. ORPC re-installed and operated an updated RivGen® Power System in Igiugig in 2015 to demonstrate its latest technology advancements and provided one-third of the community's electricity needs, significantly offsetting Igiugig's diesel fuel use.

[Oneka Glacier Project](#) – Oneka Technologies

The Oneka Glacier Project is a utility-scale wave powered sustainable desalination project. Oneka will scale up its wave-powered desalination technology to utility-scale, creating a desalination "Glacier" system to make the ocean a sustainable and affordable source of freshwater. Oneka Technologies will work with project partners AF Theriault who is supporting the manufacturing the hull and structure of the Glaciers'; H2O Innovation who is providing the process plant for the desalination portion of the Glacier technology; and government partner, the City of Barrington, NS who will provide a coastal site for buoy installation at Cape Sable Island.

MHKDR Updates

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.

[MHKDR Data Management and Best Practices for Submitters and Curators](#) – National Renewable Energy Laboratory (data from 2021, last updated 2022)

Resources for MHKDR data submitters and curators, including training videos, step-by-step guides on data submission, and detailed documentation of the MHKDR. The Data

Management and Submission Best Practices document also contains API access and metadata schema information for developers interested in harvesting MHKDR metadata for federation or inclusion in their local catalogs.

News & Press Releases

[Global OTEC Gets First Certificate of Approval of a Cold-Water Riser Installation for an OTEC Platform](#) – Global OTEC

An important milestone on the way to building the first commercial Ocean Thermal Energy Conversion (OTEC) platform was achieved by Global OTEC Resources. This April, the UK-based company received its first Certificate of Approval for the methodology of installation of a Cold-Water Riser, for the purposes of an offshore OTEC platform. This forms a crucial step in the design process, using standards already tested and applied to the Oil and Gas industry for implementation in OTEC deployments. Global OTEC has designed what will be the first commercial-scale OTEC system, the 1.5 MW floating platform named Dominique. Set to be installed in São Tomé and Príncipe in 2025, this will be a shining example to the rest of the world of how diesel fuel imports can be replaced with clean energy from the ocean.

[EU-SCORES gets official go-ahead for renewable energy multi-use parks](#) – Offshore Energy

The EU-SCORES (European Scalable Offshore Renewable Energy Sources) project, focused on developing energy multi-use parks incorporating different offshore renewable energy sources at one site, has received an official go-ahead from the European Climate, Infrastructure and Environment Executive Agency (CINEA). The €45 million marine energy project is now one step closer to realizing bankable multi-source offshore energy parks across Europe. Namely, the project secured an official approval from CINEA, meaning the green light has been given for both demonstrations of wave energy developer CorPower Ocean and offshore floating solar company Oceans of Energy at the respective test sites WavEC – Offshore Renewables and POM West-Vlaanderen Blue Accelerator.

[Canadian company Oneka sets foot in Chile with sustainable wave-powered desalination technology](#) – Oneka Technologies

In addition to the naturally arid northern parts of Chile, climate change and population growth as well as water intensive major economic drivers (mining, forestry, and agriculture) are exacerbating water shortages in Chile. To address these shortages, Canadian company Oneka Technologies installed and successfully tested its demonstrator project for desalinating water using wave energy on the coast of Algarrobo, a seaside town in the central coast of Chile, some 80 kilometers from Chile's capital, Santiago. The initiative is aligned with the Agreement between Canada and Chile on Environmental

Cooperation and in an event held recently, attended by governmental authorities of both nations, Oneka announced a new milestone: the opening of Oneka's subsidiary in Chile.

Marine Renewables Canada and the UK Marine Energy Council Strengthen Ties – Marine Renewables Canada

With growing potential for marine renewable energy to help fight climate change and meet net zero goals worldwide, Marine Renewables Canada and the UK Marine Energy Council have entered into an agreement to share knowledge and support development of the resource. The two organisations are leaders for marine renewable energy in their respective nations and share many aims and objectives. This agreement demonstrates the commitment to collectively work together to build a productive worldwide marine renewable energy industry. This marks an important step towards positive collaboration between the two regions, both of which have been working to address barriers to sector development and champion growth of marine renewable energy.

Eco Wave Power to Open First North American Subsidiary in New York City; Expands Presence in the United States – Eco Wave Power

Eco Wave Power recently announced the opening of a U.S. subsidiary, under the name Eco Wave Power U.S. The Company plans to also establish a corporate office in New York City, which will be Eco Wave Power's first office in the United States. The subsidiary will serve as a North American base for Eco Wave Power's executives and team. Eco Wave Power's decision reflects its commitment to expanding its footprint and impact in the United States, an increasingly important market for renewable energy. In January 2022, the Company signed an agreement with AltaSea at the Port of Los Angeles to bring its innovative wave energy technology to the AltaSea campus. In just over a year, Eco Wave Power has successfully modified, upgraded, and transported the conversion unit to Los Angeles and will soon begin installation on the pilot project.