



**17 May 2024**

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!

---

[Announcements](#)  
[Upcoming Events](#)

[Tethys Eng. Documents](#)  
[MHKDR Update](#)

[Software Highlight](#)  
[News & Press Releases](#)

---

## **Announcements**

### Contributing to PRIMRE

Do you have marine energy data, documents, or other information to contribute to PRIMRE? Visit the [Contributing to PRIMRE page](#) to learn more and contribute today!

### SULI & CCI Applications Open

The U.S. Department of Energy's (DOE) Office of Science is accepting applications for the [Science Undergraduate Laboratory Internships \(SULI\)](#) program and the [Community College Internships \(CCI\)](#) program for the Fall 2024 term through 22 May 2024. Through SULI and CCI, undergraduates and recent graduates can gain hands on experience at the DOE national labs.

### ETIPP Applications Open

The U.S. DOE recently announced that applications are open for the [Energy Transitions Initiative Partnership Project \(ETIPP\)](#), which provides technical assistance for remote and island communities to bolster their energy resilience through tailored solutions, through 10 July 2024.

### Call for Abstracts

The [Call for Abstracts](#) for the [3rd GloFouling Research & Development Forum and Exhibition on Biofouling Prevention and Management for Maritime Industries](#) is now open through 15 June 2024. The event will take place 4-8 November 2024 in Busan, South Korea.

## Funding & Testing Opportunities

The U.S. DOE recently announced \$25 million in funding to [support clean energy technology deployment on Tribal lands](#). DOE is soliciting applications from Indian Tribes, which include Alaska Native Regional Corporations and Village Corporations, Intertribal Organizations, and Tribal Energy Development Organizations. Applications are due 30 May 2024.

Energiaren Euskal Erakundea / Ente Vasco de la Energía has opened an [investment support programme to support demonstration and validation activities of innovative technologies for wave and offshore wind energy](#), with the potential to contribute to greater adoption of renewable energies in the Basque Country. Applications are due 19 June 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 \(RFTS\) 13](#) applications through 28 June 2024 to support marine energy testing and development projects. Open Water Support applications can be submitted any time.

Horizon Europe recently opened a Call for Proposals, “[Our Blue Future – Co-designing a future vision of a restored ocean and water system in the EU by 2030 and 2050](#),” to support the co-creation of narratives and innovative visualization tools. Proposals are due 18 September 2024.

## Career Opportunities

The European Marine Energy Centre (EMEC) is looking for a [Project Officer](#), a graduate [Commercial Officer](#), and a graduate [Environment and Consents Officer](#) to support its portfolio of projects, including marine renewable energy projects. Applications are due 17 May 2024.

The Engineering and Physical Sciences Research Council’s Centre for Doctoral Training in Net Zero Maritime Energy Solutions, with support from the University of Liverpool and others, is offering a [funded PhD position](#) focused on process-based model tools for prediction of scour around offshore structural foundations. Applications are due 20 May 2024.

Ocergy is looking for a [System Engineer](#) to contribute to the design and deployment of its zero-emission environmental monitoring platform that offers an extensive biodiversity assessment and metocean data acquisition for the characterization of offshore wind sites.

---

## **Upcoming Events**

### Upcoming Webinar

The International Energy Agency's Ocean Energy Systems (IEA-OES) is hosting a webinar, “[Ocean Energy Outlook: Sweden, The Netherlands and Italy](#)”, on 23 May 2024 from 12:00-1:00pm UTC. The webinar will provide a comprehensive exploration of the latest advancements, projects, and key policies in these countries. [Register here](#).

## Upcoming Workshops

The Marine Technology Society and Pacific Northwest National Laboratory are hosting the [15<sup>th</sup> Buoy Workshop](#) on 20-23 May 2024 in Sequim, Washington, U.S. The workshop will focus on research and advancements in oceanographic, weather, and other buoy systems. [Register here.](#)

The Oceanic Platform of the Canary Islands (PLOCAN) is hosting its [2024 Glider School](#), which is a leading hands-on ocean-glider technology training forum, from 21-25 October 2024 in Telde, Gran Canaria, Canary Islands, Spain. Applications to attend are due 30 June 2024.

## Upcoming Conferences

The Pacific Ocean Energy Trust is hosting the [Ocean Renewable Energy Conference \(OREC 2024\)](#) on 20-23 May 2024 in Portland, Oregon, U.S. This year, OREC will feature the Marine Energy Collegiate Competition (MECC) finals. [View the full OREC+MECC agenda here.](#)

The Joint Research Lab on Offshore Renewable Energy (JRL-ORE) and Euskampus Fundazioa are hosting the [10th Marine Energy Conference](#) on 29 May 2024 in Bilbao, Spain. [Register here.](#)

Bluesign is hosting the [Seanergy 2024 Forum](#), France's international event on offshore renewable energy, on 26-28 June 2024 in Nantes, France. [Register here.](#)

The University of Southampton is hosting the [11th Partnership for Research in Marine Renewable Energy \(PRIMaRE\) Conference](#) on 27-28 June 2024 in Southampton, England. Register for free.

## Upcoming Symposium

The International Network on Offshore Renewable Energy (INORE) is accepting applications from graduate students, early-stage researchers, and young professionals in offshore renewable energy to attend its [2024 European Symposium](#) through 9 June 2024. The symposium will take place from 26 August to 1 September 2024 in Aberdeen, Scotland and is free to attendees.

---

## **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.*

### **[Ocean Energy: Stats & Trends 2023](#) – Ocean Energy Europe 2024**

The annual key trends and statistics publication from Ocean Energy Europe gathers data from the sector to present the latest state-of-play in Europe and worldwide. The report covers capacity additions, power production and industrial milestones. The ocean energy sector has made great progress towards commercialisation in 2023. The UK and French governments have played pivotal roles, contracting a combined 70 MW of tidal stream

capacity. This brings publicly supported tidal additions in the 5 next years to 127 MW. This significant leap forward is largely due to the introduction of long-awaited revenue support systems.

### **[Evaluating the Impact of Tidal Energy in the Cook Inlet on Alaska’s Railbelt Electrical Grid](#) – Schwarz et al. 2024**

This report presents the findings of a case study that evaluates the impact of integrating significant tidal energy generation in the Cook Inlet in Alaska. The case study is part of a series within the “Quantifying the Grid Value of MRE [Marine Renewable Energy] in Early U.S. Markets” project funded by the U.S. Department of Energy (DOE). The Cook Inlet represents approximately 30% of the total tidal energy in the United States. This study takes a scenario-based approach to evaluate the tidal energy potential in the Cook Inlet, in which 100–500 megawatts (MW) of tidal energy are integrated into the grid under different infrastructure scenarios.

### **[A compressible degree of freedom as a means for improving the performance of heaving wave energy converters](#) – Cotton et al. 2024**

A compressible degree of freedom (CDOF) can provide a means of improving wave power capture by adjusting the system stiffness and providing short-term energy storage, reducing or even eliminating the requirement for two-way electrical power flow as is typical in wave energy control systems. With the overarching goal of investigating and facilitating the application of a CDOF within wave energy converter (WEC) design, this paper focuses primarily on the case of heaving buoys, and on using air volumes to provide the compressible spring effect. Analytical formulae for the natural frequencies are used to gain fundamental insights into the main design considerations.

---

## **MHKDR Update**

*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.*

### **[TEAMER: Supporting model output files for Environmental Compliance Framework for Floating Tidal Turbines, Cook Inlet, AK](#) – Pacific Northwest National Laboratory (data from 2023, last updated 2024)**

Orbital Marine Power (Orbital) is seeking to deploy their floating tidal technology in US waters and has considered the possibility of deploying in temperate waters including the Pacific Northwest (PNW) and the Western Passage, Maine. It has become apparent that some of the most promising tidal sites in the US are located in high latitudes, within the State of Alaska. Through the TEAMER project, Pacific Northwest National Laboratory (PNNL) developed a framework to select environmentally compliant sites partially based on hydrodynamic model output. This uploaded dataset summarizes the key hydrodynamic model output files discussed in the TEAMER project report.

## **[HERO WEC V1 Upgrades - SolidWorks Models \(WEC, RO System, and Submersible Pump Housing\)](#) – National Renewable Energy Laboratory (data from 2024, last updated 2024)**

The attached zip files include SolidWorks pack-and-go assemblies of NREL's HERO WEC (hydraulic and electric reverse osmosis wave energy converter), the reverse osmosis (RO) assembly, and the submersible pump assembly that is used to provide flow to the RO assembly in the electric configuration. These 3 models were upgraded in 2023 from their baseline models. The HERO WEC model does not include all aspects of the design (i.e. RO system, electrical enclosure, hose, cable), it only includes the WEC and PTO (power take-off) design. This model supersedes the old MHKDR model submission.

## **[TEAMER: Experimental performance characterization of a shrouded axial-flow turbine](#) – University of Washington (data from 2023, last updated 2024)**

Sitkana has developed a shrouded hydrokinetic turbine with a modular, low-cost design that can be scaled to meet the needs of remote communities. With technical support from the University of Washington, Sitkana sought to experimentally characterize the mechanical power and structural loads of various 1:3.3 scale rotor geometries. In all, 11 different rotor geometries were characterized with variations in height-to-diameter ratio, blade number, and blade type (foiled versus flat). All tests were conducted in Reynolds-independent flow conditions in the Alice C. Tyler Flume at the University of Washington. Results allow Sitkana to (1) refine the optimal rotor geometry, (2) validate numerical models, and (3) predict power output for a full-scale system.

---

## **Marine Energy Software Highlight**

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

### **[MHKiT-Python v0.8.0 Release](#)**

The *Marine and Hydrokinetic Toolkit* ([MHKiT](#)) is open-source software, developed in Python and MATLAB, for rapid data processing, visualization, quality control, resource assessment, and device performance. [MHKiT-Python](#) and [MHKiT-MATLAB](#) provide robust and verified functionality in both Python and MATLAB to meet data processing needs of the marine energy community. MHKiT-Python v0.8.0 features a generalized zero up-crossing analysis, an automatic threshold calculation for significant wave events, and updates to the DOLfYN module. It also includes full support for Python 3.10-3.11 and Xarray data.

### **[TEAMER WEC Modeling and Controls In-Depth Workshop](#)**

The TEAMER Wave Energy Converter (WEC) Modeling and Controls In-Depth Workshop took place at Oregon State University (OSU) this past week. Experts from

OSU, Sandia National Laboratories, National Renewable Energy Lab, and Evergreen Innovations presented on topics like wave resource assessments, numerical WEC-Sim modelling, experimental wave laboratory test campaigns, and application of control theory. Attendees had the opportunity to enhance their class learnings at the Large Flume at the Hinsdale Wave Lab to control OSU's [LUPA](#) device as well as Sandia's [SWEPT Lab](#). The workshop resources will be made publicly available on the [TEAMER website](#) in the coming weeks, so stay tuned for updates!

---

## News & Press Releases

### [First three-month milestone of trouble-free Dragon 12 testing reached – generating valuable data on performance and robustness](#) – Minesto

Minesto, leading ocean energy developer, recently announced that for three months, since its initial installation in February 2024, the tidal kite Dragon 12 has been successfully grid connected and delivers as expected at the site in Vestmanna. In addition, for the first time, an array of tidal kites is in operation – the 1.2 MW D12 and one 100kW D4, adding valuable production data for array build-out. The data being generated underlines commercial readiness of Dragon Class systems and the continued testing supports both critical sales activities and preparations for product delivery. Operating two systems in parallel contributes to new ways of verification and learning in core areas, such as kite-park design, product range modularity and performance optimization.

### [Ocean Power Technologies Announces Renewable Energy Production Milestone](#) – OPT

Ocean Power Technologies, Inc. (OPT), a leader in innovative and cost-effective low-carbon marine power, data, and service solutions, recently announced it is approaching 15MWh of renewable energy production from its family of PowerBuoys® (“PB”). The recent launch of its Next Generation PB off the coast of New Jersey has materially accelerated average energy production by combining solar, wind, and wave energy production capabilities. The energy generation numbers are based on deployments in the Atlantic, Pacific, Mediterranean, and North Sea. These deployments came from a mix of renewable energy investments from government backed development programs and commercial leases and sales.

### [TEAMER Network Director Announces RFTS 12 Technical Support Recipients](#) – TEAMER

On May 14, 2024, the TEAMER program announced the selection of eleven projects through its twelfth Request for Technical Support (RFTS), reflecting a total funding amount of over \$1.1 million. These projects will receive support for testing expertise and access to numerical modeling, laboratory or bench testing, tank/flume testing, and expertise within the growing TEAMER Facility Network. Selected applicants, along with their supporting Facility, will now submit their completed Test Plans, a requirement

before assistance activities can commence. Applications for RFTS 13 are currently being accepted through June 28, 2024.

### **Orbital Marine Power and Global Energy Group sign preferred supplier agreement** – **Orbital Marine Power**

Orbital Marine Power (Orbital), the renewable energy company focused on the commercial deployment of its innovative floating tidal turbine technology, has selected Global Energy Group as preferred supplier to lead the manufacture and assembly of turbines for the company's initial Orkney projects which have secured contracts under the UK Government's Contract for Difference auction rounds 4 and 5. It is anticipated that turbine manufacture will start at Global Energy Group's Port of Nigg facility on the Cromarty Firth, later this year with first power expected from the Orkney connected projects in 2026. These projects will build on the success of Orbital's O2, the world's most powerful tidal turbine.

### **MARENDATA: The Comprehensive Marine Renewable Energy Data Platform Gets an Upgrade** – **SAFEWAVE Project**

The European funded SAFEWAVE project – Streamlining the Assessment of environmental effects of Wave Energy – has updated the MARENDATA, a data platform designed to provide instant access to marine renewable energy industry-specific information related to resource and impact assessment. MARENDATA integrates data sets from various sites, providing scientifically robust data on the potential environmental effects of marine energy devices to support consenting and licensing processes. The platform is suitable for both technical and non-technical audiences, making it easy for stakeholders to access detailed information on a particular marine energy project or test site, as well as view data on one or multiple environmental parameters at different test centers.

### **Intertek to Provide Hydrodynamic Modelling in Support of Tidal Lagoon Research Study** – **Intertek**

Intertek, a leading Total Quality Assurance provider to industries worldwide, has won an important research project to provide hydrodynamic modelling expertise as part of the Welsh Government's Tidal Lagoon Challenge. The Tidal Lagoon Challenge is an innovative competition to help quantify the potential benefits of tidal lagoons and reduce or remove the barriers to development in Wales. Partnering with the Offshore Renewable Energy (ORE) Catapult, Cardiff University and Western Gateway, Intertek will be undertaking an assessment to quantify the value of developing tidal range power as part of the Flexible Lagoon Operation for Maximal Value (FLOMax) research project. The research project's three main objectives include: (1) Modelling the flexible operation of tidal lagoons (2) Quantifying their true long-term economic value (3) Presenting a recommendation for policy support.