



22 March 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](#)
[Telesto Highlight](#)

[PRIMRE Update](#)
[News & Press Releases](#)

Announcements

Power at Sea Prize

The U.S. Department of Energy's (DOE) Water Power Technologies Office (WPTO) recently launched the [Powering the Blue Economy: Power at Sea Prize](#), which will award up to \$1.7 million to competitors to advance technologies that use marine energy to power ocean-based activities. Submissions for the Concept Phase are due 26 July 2024.

SULI & CCI Applications Open

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

Calls for Abstracts & Papers

The International Council for the Exploration of the Sea (ICES) is [accepting abstracts](#) for the [ICES Annual Science Conference \(ASC 2024\)](#) through 22 March 2024. ICES ASC will take place 9-12 September 2024 in Gateshead, England.

The [Call for Abstracts](#) for the [International Conference on Ocean Energy \(ICOE 2024\)](#) has been extended through 28 March 2024. ICOE 2024 will take place 17-19 September 2024 in Melbourne, Australia.

The University of Southampton is now accepting abstracts for the [11th Partnership for Research in Marine Renewable Energy \(PRIMaRE\) Conference](#) until 29 March 2024. The PRIMaRE Conference will take place 27-28 June 2024 in Southampton, England.

The Energy Modelling Hub and Net Zero Atlantic have opened the [Call for Abstracts](#) for the [Atlantic Canadian Conference on Energy System Modelling](#) through 29 March 2024. The conference will take place on 19-20 June 2024 in Moncton, New Brunswick, Canada.

The [Call for Abstracts](#) for [OCEANS 2024 Halifax](#) is now open through 26 April 2024. OCEANS Halifax will take place 23-26 September 2024 in Halifax, Nova Scotia, Canada.

Funding & Testing Opportunities

The UK Research and Innovation (UKRI) recently announced the [Ayrton Fund](#), which is a UK government commitment of up to £1 billion that aims to accelerate the clean energy transition in developing countries, by creating and demonstrating innovative clean energy technologies and business models. Applications close on 9 April 2024.

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.

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.

Career Opportunities

The University of Manchester is seeking a [Research Associate](#) to apply computational fluid dynamics (CFD) models to the analysis of offshore wind and tidal turbine farms and farm-scale wakes, subject to turbulent atmospheric and marine flows. Applications are due 27 March 2024.

Pacific Northwest National Laboratory (PNNL) is seeking an [Operations Specialist](#) to provide leadership and safety oversight of its Energy and Environment Directorate's portfolio of research operations across the PNNL Sequim Campus. Applications are due 31 March 2024.

The European Marine Energy Centre (EMEC) is looking for a [Project Engineer](#) and an [Assistant Project Manager](#) to contribute to projects across EMEC's portfolio, including marine energy, green hydrogen, offshore wind, and other associated services. Applications are due 1 April 2024.

EMEC is also looking for a [Senior Electrical Engineer](#) to manage operations of EMEC's electrical systems, ensuring they meet client requirements, and that they are operated to relevant standards. Applications are due 22 April 2024.

The University of Southampton is offering a fully funded [PhD research project](#) (UK only) focused on developing new concepts for the anchoring design of floating renewable facilities and harnessing beneficial ‘whole-life’ responses of the seabed. Applications are due 1 April 2024.

University of Galway is inviting applications for a [Professor in Environment and Marine](#) with relevant research and teaching interests to join its School of Business and Economics. Applications are due 11 April 2024.

Upcoming Events

Upcoming Webinars

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 wave energy converter co-design principles.

Sandia National Laboratories is also hosting a webinar, “[Pioneer WEC Concept Design Report Webinar](#)”, on 2 April 2024 from 8:00-9:30am PDT (3:00-4:30pm UTC), which will focus on a novel “pitch resonator” wave energy converter (WEC) concept to support the power needs of the Coastal Surface Mooring system within the Ocean Observatories Initiative Pioneer Array.

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.

The U.S. DOE’s Water Power Technologies Office is hosting a [Resilient Coastal Communities Strategy Development Input Session](#) on 27 March 2024 from 12:00-4:00pm EDT (4:00-8:00pm UTC). The virtual, facilitated strategy session will cover systems providing power or water delivery for nearshore marine energy technologies for coastal and island stakeholders.

The IMPACT project recently announced that its [Wave Energy Rig Testing Workshop: Bridging the Gap between Research and Deployment](#) will take place on 12 April 2024 in Perugia, Italy. The event will showcase how rig testing can contribute to accelerating the development of the European wave energy sector, and feature presentations from international and Italian experts from both academia and industry.

The Supergen Offshore Renewable Energy Hub is also hosting a [Masterclass on Advanced Experimental Fluid Mechanics for Offshore Renewable Energy](#) on 22 April 2024 at the University of Plymouth in England. Participants will be introduced to the world-leading facilities

at the Coast Laboratory and the new UK Floating Offshore Wind Turbine Test Facility, Babbage wind tunnel, and Hexapod. Register [here](#).

The Marine Environmental Data and Information Network (MEDIN) is hosting an [Open Meeting](#) on 24 April 2024 in London, England and online to introduce the new MEDIN Business Plan 2024-2029 and to discuss how the wider community can contribute to the future developments of UK marine data management. Registration closes on 31 March 2024.

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 Supergen Offshore Renewable Energy Hub is hosting its [7th Early Career Researchers Forum](#) on 23 April 2024 and [7th Seventh Annual Assembly](#) on 24 April 2024 at the University of Plymouth in Plymouth, England.

Pacific Ocean Energy Trust (POET) is hosting the [Ocean Renewable Energy Conference \(OREC 2024\)](#) on 20-23 May 2024 in Portland, Oregon, U.S. Early bird registration is available through 5 April 2024.

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.

Tidal Stream Technology Roadmap – Ocean Renewable Energy (ORE) Catapult 2024

This report covers tidal stream (TS) cost reduction via technology innovation and demonstrates how cost reduction is crucial in enabling an accelerated growth trajectory for the sector. The focus here is on innovations which will be needed to achieve ~1GW of installed TS capacity in the UK by 2035 as per recommendations put forward by the Marine Energy Council (MEC). With the UK grid becoming ever more dependent on variable renewable generation, grid balancing costs have risen substantially in recent years, with the cost of balancing the UK's power grid coming to £4.19bn in 2022, an increase of 250% since 2019.

Optimization of power take-off system settings and regional site selection procedure for a wave energy converter – Mehdipour et al. 2024

Ocean wave energy stands as a crucial component in the quest for sustainable and renewable energy sources, essential in the global effort to mitigate climate change. However, a significant challenge in this field is optimizing the efficiency of Wave Energy Converters (WECs) on a regional scale, particularly Oscillating Surge Wave Energy

Converters (OSWECs). This challenge stems from the complex, nonlinear interactions between ocean waves and these devices, necessitating precise tuning of Power Take-Off (PTO) system settings and optimal placement for the highest possible performance and stability. To address this challenge, our study introduces the Hill Climb - Explorative Grey Wolf Optimizer (HC-EGWO), a novel algorithm combining local search and swarm-based global optimization strategies.

[Unlocking osmotic energy harvesting potential in challenging real-world hypersaline environments through vermiculite-based hetero-nanochannels](#) – Wang et al. 2024

Nanochannel membranes have demonstrated remarkable potential for osmotic energy harvesting; however, their efficiency in practical high-salinity systems is hindered by reduced ion selectivity. Here, we propose a dual-separation transport strategy by constructing a two-dimensional (2D) vermiculite (VMT)-based heterogeneous nanofluidic system via an eco-friendly and scalable method. The cations are initially separated and enriched in micropores of substrates during the transmembrane diffusion, followed by secondary precise sieving in ultra-thin VMT laminates with high ion flux. Resultantly, our nanofluidic system demonstrates efficient osmotic energy harvesting performance, especially in hypersaline environment.

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.

[Project Planning Resources on Telesto](#)

[Telesto](#) is home to open-source wiki pages and structured databases that provide information about the development life cycle of marine energy, including the planning phase. Early and effective planning can save time and money when navigating decisions around site selection, environmental impacts, permitting requirements, and stakeholder engagement.

Telesto's [Project Planning](#) page is a one-stop-shop with years of research and a variety of resources on marine energy, including links to key funding sources. The Project Planning page also highlights where resource characterization data, reports, and other tools are available in PRIMRE, as well as permitting information, details on relevant standards, and lessons learned.

PRIMRE Update

The PRIMRE team is active in the international marine energy data sharing space and hosts an annual workshop, in partnership with OES, to connect with others working on data sharing.

[4th International Marine Energy Data Sharing Workshop](#)

Ocean Energy Systems ([OES](#)) and the [PRIMRE](#) team invite you to attend the 4th International Marine Energy Data Sharing Workshop online on 8 May 2024 from 3:00-5:00 PM UTC.

Past workshops have featured presentations on marine energy data resources available around the world (e.g., databases, portals, tools) and small group discussions focused on the value of data sharing, barriers to data sharing, and opportunities to overcome those barriers.

The 2024 workshop will continue this collaborative effort with updates on several international marine energy resources, discussions focused on data sharing principles (e.g., FAIR, FARR), and potential applications of machine learning (e.g., data lakes, large language models).

[Please register for the workshop here by April 26, 2024.](#)

Please let us know if you have suggestions for additional attendees. We are particularly looking for those who develop or manage marine energy databases, portals, and/or tools.

News & Press Releases

[Winners of Welsh Government's £750,000 Tidal Lagoon Challenge named](#) – Welsh Government

Climate Change Minister Julie James has just announced the successful applicants of the Welsh Government's £750,000 Tidal Lagoon challenge. The challenge was announced by First Minister Mark Drakeford in March 2023 where he said the funding would be made available for at least three research projects working on tidal lagoon technology. The three successful lead organisations have been named as: Swansea University in the Environment category; ORE Catapult in the Engineering and Technical category; and Cardiff University in the socio-economic and finance category. At the conference, the Minister also announced that up to £1m will be match funded by Milford Haven Port Authority for preparatory work to enable future floating offshore wind projects to deploy from Pembroke.

[Minesto strengthens market activities in Australia and New Zealand by partnering with local project developer](#) – Minesto

Minesto, leading ocean energy developer, strengthens the market activities in Australia and New Zealand by signing collaboration agreement with a new business partner, Hydrokite Project Development. The new partner is established fit-for-purpose to exclusively bring Minesto's technology to these new markets. Minesto expands the market activities in Australia and New Zealand by signing local business partner Hydrokite Project Development to spearhead market entry activities in the region. Adding to the potential project portfolio, the Australian island state of Tasmania is the initial focus, with further potential development sites in the Northern Territory, Western Australia and New Zealand also under consideration.

Could a New Renewable Energy App Help Inspire Future Climate Crusaders? – National Renewable Energy Laboratory (NREL)

NREL, WPTO, and IKM 3D recently released the long-anticipated REDi Island app, an educational virtual world powered entirely by renewable energy. REDi Island is designed for students from high school and beyond (and eventually from kindergarten on up), educators, or anyone curious about how we can build a more sustainable world powered by clean energy. Students can explore technologies and careers through waystations, videos, 3D visualizations, and more. And teachers can access curriculum resources and activities, like a scavenger hunt that encourages users to think like a fish. Right now, REDi Island gets most of its energy from water power because, well, it is an island. These coastal communities live right beside powerful ocean waves, currents, and tides, and an energetic river, too.

Tidal Turbine Successfully Trialied at Wales' Marine Energy Test Area – META

A tidal turbine designed to operate in remote communities has been successfully deployed and tested at Wales' Marine Energy Test Area (META). The device is being developed by a team of researchers at Swansea University led by Professor of Ocean Energy Ian Masters, and tested at META's consented Warrior Way site in Pembroke Dock. Warrior Way, META's primary tidal stream test site, is located upstream of the Cleddau Bridge in Pembroke Dock. It has consistent tidal flow, shelter from waves and good transport links by both road and water. The site ranges in depth from 2m to 20m, providing ample space to test both scaled and micro tidal devices, as well as components, subassemblies and scientific instruments.

Seven companies across Caithness and Orkney begin pioneering programme to parachute them into offshore renewable success – ORE Catapult

Seven businesses hailing from the north of Scotland and Orkney aiming to break into the multibillion-pound offshore renewables energy market have been selected for the first Fit For Offshore Renewables (F4OR) programme in the region. The industry leading F4OR supply chain growth programme is delivered by the Offshore Renewable Energy (ORE) Catapult, will be supported by £125,000 from West of Orkney Windfarm, and will take companies 12-18 months to complete. The chosen companies come from a wide range of sectors including engineering, marine renewables, offshore operations and maintenance, and subsea monitoring. The F4OR programme has been designed alongside offshore wind industry experts with a focus on giving businesses the skills and expertise to deliver success in the offshore renewables sector.