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[Tethys](#) is a knowledge hub with information and resources on the environmental effects of wind and marine energy. The bi-weekly [Tethys Blast](#) highlights announcements and upcoming events; new documents in the [Knowledge Base](#); and international energy news. [ORJIP Ocean Energy](#) has partnered with [OES-Environmental](#) to provide additional content. [Email us](#) to contribute!

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Announcements

OES-Environmental 2024 State of the Science Report Coming Soon

[OES-Environmental](#) will be releasing the *2024 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World* at the International Conference on Ocean Energy in Melbourne, Australia next week! The *2024 State of the Science Report* brings together the most up-to-date information on potential environmental effects of marine renewable energy; shares helpful resources, such as education and outreach tools, strategies to aid consenting, and data information systems; and identifies a path forward.

Request for Information

The U.S. Department of Energy (DOE) Grid Deployment Office (GDO) has issued a [Request for Information](#) to seek input from all parties regarding issues related to the planning and development of electric transmission facilities to service offshore wind power generating stations on the U.S. West Coast. Responses are due by 3 October 2024.

BOEM Seeks Public Comment

The U.S. Bureau of Ocean Energy Management (BOEM) recently published a [Call for Information and Nominations](#) for a second regional offshore wind energy sale in the Central Atlantic. BOEM will accept nominations and comments through 21 October 2024. BOEM will also host several virtual and in-person public meetings in September and October. [Register here.](#)

New WINDEXchange Equity Page

WINDEXchange has recently expanded the web content it offers to include information on wind energy equity, including what it is, why it's important, what the U.S. government is doing to improve equity, and how researchers are advancing equity, such as the above community input study. Visit WINDEXchange's new [Equity and Wind Energy page](#) to learn more.

Calls for Abstracts & Proposals

The [Call for Abstracts](#) for the [Nova Scotia Offshore Wind Research & Development Forum](#) is open through 13 September 2024. The Forum will take place on 18 November 2024 in Halifax, Nova Scotia, Canada.

The Oceanic Network has opened the [Call for Workshops](#) for the [2025 International Partnering Forum \(IPF\)](#) through 1 November 2024. IPF 2025 will take place from 28 April to 1 May 2025 in Virginia Beach, Virginia, U.S.

Funding & Testing Opportunities

The Supergen Offshore Renewable Energy (ORE) Hub launched its [Early Career Researchers \(ECR\) Research Fund](#), which is designed to be a research fund for ECRs to support activities that either develop existing research activities or develop your skills further. Applications should be directed at offshore wind, wave, or tidal energy research and are due 16 September 2024.

UK Research and Innovation has opened a follow-on [funding opportunity](#) to build on existing engineering and physical sciences research outputs to accelerate economic, societal, policy and environmental benefits. Applications must build on prior Engineering and Physical Sciences Research Council funding. Applications are due 24 September 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.

The U.S. National Science Foundation (NSF) opened applications for its [Engineering Research Initiation program](#), which aims to enhance engineering research capacity by supporting new academic investigators who have not received significant federal funding, and includes a special topic focused on Marine Energy and the Blue Economy. Applications are due 9 October 2024.

The Ocean Energy Safety Institute (OESI) has published a [Request for Proposals](#) to support research pathways across oil and gas, wind energy, and marine energy. OESI anticipates awarding up to \$16 million to foster enhanced safety protocols, improved technologies, and new insights into risk management. Proposals are due 18 October 2024.

The National Offshore Wind Research and Development Consortium (NOWRDC) has opened its [Solicitation 4.0 - Innovations in Floating Offshore Wind](#) to fund projects that address areas of

need for floating offshore wind, including innovation in ports and vessels, and uncrewed underwater vehicles for environmental monitoring. Proposals due 14 November 2024.

Career Opportunities

Pacific Northwest National Laboratory (PNNL) is hiring a [Post Masters Research Associate – Marine Energy and Environment](#) to assist with synthesizing and interpreting scientific information on interdisciplinary projects focused on environmental effects of marine energy and other areas like social and economic effects, community engagement, and aquaculture. Applications are due 17 September 2024.

The U.S. DOE Water Power Technologies Office (WPTO) is seeking a [Marine Energy Fellow](#) to engage with the DOE's Arctic Energy Office in Alaska. The Fellow will learn how WPTO and Arctic Energy Office carry out their work on water-power related topics within the state of Alaska. Applications are due 20 September 2024.

The Pacific Marine Energy Center (PMEC) at Oregon State University is recruiting two [Post-Doctoral Scholars](#) to develop numerical and scaled physical models of sub-surface wave energy converters, autonomous underwater vehicle recharging, and real-time hybrid simulation of offshore wind turbines. The tentative closing date is 20 September 2024.

The European Marine Energy Centre (EMEC) is looking for a [Metocean Data Engineer](#) to implement and oversee environmental data management across EMEC's technical services. Applications are due 23 September 2024.

Natural Power is looking for an [Offshore Environmental Consultant \(Ornithology\)](#) to work on projects in the UK and Ireland. The ideal person for this role will understand seabird ecology and the impacts of offshore wind farms on birds. Applications are due 30 September 2024.

Upcoming Events

Upcoming Webinars

OES-Environmental is hosting a public webinar, "[The State of the Science on Environmental Effects of Marine Renewable Energy](#)", on 2 October 2024 from 8:00-9:30am PDT (3:00-4:30pm UTC). During this webinar, OES-Environmental will present on findings from the *2024 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World*, which will be published next week! [Register here.](#)

[WREN](#) is hosting a webinar, "[Using eDNA for wind energy and wildlife studies](#)", on 17 October 2024 from 10:00am-11:00am EDT (2:00pm-3:00pm UTC). During the webinar, researchers from France and the United States will present their research on the feasibility of using environmental DNA, or eDNA, to detect marine wildlife. [Register here.](#)

Upcoming Conferences

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

The [7th Asian Offshore Wind, Wave and Tidal Energy Conference \(AWTEC 2024\)](#) will take place on 20-24 October 2024 in Busan, Korea.

The Marine Alliance for Science and Technology Scotland (MASTS) is hosting its [2024 Annual Science Meeting](#) on 5-7 November 2024 in Glasgow, Scotland. Early bird tickets now available.

Upcoming Workshops

As part of ICOE 2024, the U.S. DOE WPTO and partners are hosting a workshop focused on [Knowledge Gaps: Off-Grid and Micro-Grid Uses of Marine Energy](#) on 18 September 2024. The workshop will share progress on research that supports off-grid and micro-grid uses of marine energy for remote communities and power at sea, and seek to understand international industry's current projects and interests and how off-grid applications are being developed internationally. Interested ICOE attendees can [RSVP here](#).

As part of ICOE 2024, OES-Environmental and Offshore Renewables Joint Industry Programme (ORJIP) are hosting a workshop focused on [Environmental Effects for Permitting Off-Grid Marine Energy Applications](#) on 19 September 2024. The workshop will explore what level of environmental effects might be expected from smaller scale (off-grid) wave and tidal energy devices, and to determine what information is needed to streamline permitting for these devices. Interested ICOE attendees can [RSVP here](#).

New Documents on Tethys

[Tethys](#) hosts thousands of documents on the environmental effects of marine and wind (land-based and offshore) energy, including journal articles, conference papers, and reports.

Marine Energy

[Life cycle assessment of ocean wave energy converter](#) – Singhapurage 2024

Very few amounts of Life cycle assessments (LCA) are conducted for ocean wave energy converters (WEC). Among those, no work can be found regarding the oscillating water column (OWC) wave energy converter devices. This study presents a cradle-to-gate life cycle assessment for the LIMPET OWC plant. The study aims to identify the impact of the LIMPET plant. OpenLCA software was used to perform the LCA. ReCiPe 2016 and EDIP 2003 methods were used to assess the impact of the use of the Ecoinvent database. The carbon payback period and the energy payback period of the LIMPET plant were 0.14 and 161.15 years respectively. The energy payback period is very high due to inefficient energy harnessing and plant failures.

Developing a Marine Energy Workforce Pipeline – Cardinal et al. 2024

If the marine energy sector is to achieve the domestic targets set by the NHA, jobs will require a combination of specialized training and advanced degrees. A fully functional industry will eventually require jobs across various disciplines including project development; environmental monitoring; manufacturing and supply chain; ports and staging; maritime construction; and operations and maintenance. As this industry expands, there is a critical need to develop a skilled and competent workforce capable of designing, constructing, operating, and maintaining marine energy systems. This paper explores the challenges, strategies and considerations involved in building a robust marine energy workforce pipeline to support the growth and sustainability of this sector.

In situ wake measurement behind a 25-kW freewheeling vertical axis hydrokinetic turbine in energetic riverine environment using acoustic Doppler current profiler and acoustic Doppler velocimeter – Dharamsi 2024

Hydrokinetic turbines present an opportunity for generating renewable energy sustainably in support of microgrids. This research examines the performance and environmental impact of a 25-kW New Energy vertical axis hydrokinetic river turbine under freewheeling conditions, focusing on flow and turbulence behavior. Field measurements of flow velocity at the Canadian Hydrokinetic Turbine Test Center on the Winnipeg River are measured using an acoustic Doppler current profiler and an acoustic Doppler velocimeter. Measurements are taken at various distances downstream of the turbine, from 1 to 17 turbine diameters, to analyze turbulence intensity, turbulent kinetic energy, and mean velocity profiles.

Wind Energy

Guidance for Pre- and Post-Construction Monitoring to Detect Changes in Marine Bird Distributions and Habitat Use Related to Offshore Wind Development – Avian Displacement Guidance Committee 2024

This document was developed by a Specialist Committee convened by the New York Offshore Wind Environmental Technical Working Group (E-TWG) and chaired by a representative from the U.S. Fish and Wildlife Service (USFWS). The goal, developed in consultation with the E-TWG and USFWS staff, was to advance recommendations for the effective detection and characterization of changes in the distributions and habitat use of marine birds in relation to offshore wind (OSW) energy development. The intended audience for these recommendations includes offshore wind energy developers, federal and state agencies that have oversight of marine birds and/or OSW energy activities in the U.S., and others conducting studies of marine birds at offshore wind energy projects.

Modeling the Underwater Sound of Floating Offshore Windfarms in the Central Mediterranean Sea – Baldachini et al. 2024

In the shift toward sustainable energy production, offshore wind power has experienced notable expansion. Several projects to install floating offshore wind farms in European waters, ranging from a few to hundreds of turbines, are currently in the planning stage. The underwater operational sound generated by these floating turbines has the potential to affect marine ecosystems, although the extent of this impact remains underexplored. This study models the sound radiated by three planned floating wind farms in the Strait of Sicily (Italy), an area of significant interest for such developments. These wind farms vary in size (from 250 MW to 2800 MW) and environmental characteristics, including bathymetry and seabed substrates.

Offshore wind farm operation contributed to a slight improvement in seawater quality along the Jiangsu Coast, China – Wei et al. 2024

The rapid growth of offshore wind farms (OWFs) is driven by concerns for energy security and climate change mitigation. However, their impact on marine environments remains poorly understood due to limited research. This study analyzes the effects of an OWF along China's Jiangsu Coast on seawater quality using data from different development phases. Results show the major pollutants were different across phases. Heavy metal pollution reached alert levels during construction compared to the safe levels observed in the pre-construction and operational phases, mainly due to increases in Pb, Cd, and Hg concentrations. Eutrophication was mild throughout all periods but exhibited a continuous decrease, primarily attributed to reductions in PH and COD concentrations.

News & Press Releases

Marine Energy

Innovative wave energy project receives green light from EU – WEDUSEA

A €19.6 million partnership project, which aims to be the stepping stone towards large scale wave energy commercialisation, has received formal go-ahead from the European Union. WEDUSEA is a pioneering collaboration between 14 partners, spanning industry and academia from across the UK, Ireland, France, Germany and Spain. It is co-ordinated by the Irish company OceanEnergy. The project is co-funded by the EU Horizon Europe Programme and by Innovate UK, the UK's innovation agency. The WEDUSEA project will demonstrate a grid connected 1MW OE35 floating wave energy converter at the European Marine Energy Centre (EMEC) wave energy test site at Billia Croo in Orkney, Scotland. A rigorous technical and environmental demonstration will happen over a two-year period in Atlantic wave conditions.

6 tidal stream projects successful in the UK's latest renewable auction – UK Marine Energy Council

The results of Allocation Round 6 (AR6) of the UK's Contracts for Difference renewable auction were today announced, with 6 projects across 5 sites, successfully securing contracts to deliver 28MW of tidal stream capacity at £172/MWh. AR6 is the third consecutive renewable auction with a ringfence for tidal stream energy. This has given the UK an unrivalled deployment pipeline. With the results of this year's auction the UK is on track to have over 130MW of tidal stream capacity deployed in its waters by 2029. The strike price represents a 34% saving against the Administrative Strike Price and is the lowest cost that tidal stream projects have been contracted at since the introduction of the ringfence. The projects that secured contracts in AR6 are HydroWing (10MW in Wales), MeyGen (9MW in Scotland), Seastar (4MW in Scotland), Magallanes (3MW in Scotland), and Ocean Star Tidal (2MW in Scotland).

TEAMER Network Director Announces RFTS 13 Technical Support Recipients – TEAMER

On September 10, 2024, the U.S. TEAMER program announced the selection of 13 projects through its thirteenth RFTS, reflecting a total funding amount of nearly \$2.1 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. Supported by the U.S. Department of Energy and directed by the Pacific Ocean Energy Trust, TEAMER accelerates the viability of marine renewables by providing access to the nation's best facilities and expertise to solve critical challenges, build knowledge, foster innovation, and drive commercialization.

ONDEP project secures €19M EU funding to deploy WaveRoller Array in Portugal – AW-Energy

The Ondas de Peniche (ONDEP) project has been awarded €19 million from the EU's Horizon Europe funding program to deploy a 2 MW wave energy array featuring four WaveRoller wave energy converters. The ONDEP project will commence in October 2024 and last for five and a half years, encompassing the full spectrum of project activities — from design and manufacturing to testing, deployment, and operation. Set in the surfing hub of Peniche, Portugal, the pilot wave farm will be installed and connected to the grid and will continue generating electricity for an additional eight years after the project's official end. ONDEP's mission over the next five and a half years is to address the technical challenges of future large-scale wave farms, ensuring the technology's reliability and scalability.

University of Michigan Awarded NSF Grant to Establish the GO Blue Center for Growing Ocean Energy Technologies and the Blue Economy – University of Michigan

The University of Michigan has announced the establishment of the Center for Growing Ocean Energy Technologies and the Blue Economy (GO Blue), a significant initiative under the umbrella of the National Science Foundation's Industry-University Cooperative

Research Centers (IUCRC) program. This center, a collaborative effort among the University of Michigan, Stevens Institute of Technology, and Texas A&M-Corpus Christi, aims to accelerate marine energy innovation and foster the development of the blue economy. The GO Blue Center is designed to address pressing global challenges in marine energy and the blue economy by bridging the gap between academia, industry, and government labs.

Wind Energy

[Biden-Harris Administration Marks Major Milestones for Offshore Wind, Approves Tenth Project](#) – U.S. Department of the Interior

The Biden-Harris administration recently announced the approval of the Maryland Offshore Wind Project – the nation’s tenth commercial-scale offshore wind energy project approved under President Biden’s leadership. With the approval, the Department has approved more than 15 gigawatts of clean energy from offshore wind energy projects – equivalent to half of the capacity needed to achieve President Biden’s goal of 30 gigawatts of offshore wind energy by 2030. Projects approved to date will power 5.25 million homes. The Maryland Offshore Wind Project consists of three planned phases, which include the proposed installation of up to 114 wind turbine generators, up to four offshore substation platforms, one meteorological tower, and up to four offshore export cable corridors.

[New vision for UK seabed as The Crown Estate publishes bold approach to drive energy transition and nature recovery](#) – The Crown Estate

An ambitious vision for how the UK’s seabed can continue to support the accelerated delivery of nature recovery and the transition to clean energy has been set out by The Crown Estate, which manages the seabed around England, Wales, and Northern Ireland. Amid increasing demand on the seabed from sectors critical to the UK economy, The Crown Estate has been working with stakeholders to develop initial plans for a ground-breaking [Marine Delivery Routemap](#). The Crown Estate has also published its thinking on the [Future of Offshore Wind](#) on behalf of the Great British Energy: The Crown Estate partnership. This report sets out its approach to leasing this additional capacity for delivery out to 2040 in support of the UK’s net zero and energy security ambitions.

[After four years of operations, WindFloat Atlantic project achieves a total cumulative production on 320GWh, surpassing the anticipated figures](#) – WindFloat Atlantic

Ocean Winds (OW), international company dedicated to offshore wind energy and created as a 50-50 joint venture in 2020 by EDP Renewables and ENGIE and majority shareholder of WindFloat Atlantic, announces that after four years of successful operation, the WindFloat Atlantic project has not only exceeded expected numbers but has also fostered a strong alliance within the region. Since July 2020, the project’s three turbines have been supplying power to the Portuguese national grid, showcasing the potential of floating wind technology and each January, it has been reported with pride

that the project's electricity production has steadily increased, reaching 78 GWh in 2022 and 80 GWh in 2023.

Indian Ocean off Bunbury, WA declared for offshore wind – Government of Australia

The Australian Government has declared an area in the Indian Ocean off Bunbury, Western Australia (WA) between Cape Naturaliste and Dawesville where offshore renewable energy, such as offshore wind, could be developed. The South West Interconnected System is predicted to need 50 GW more electricity by 2042. Offshore wind offers a large scale, secure, reliable and clean energy source for our electricity network. The declared area has the potential to generate up to 11.4 gigawatts of renewable wind energy. Offshore wind projects can't be built yet. Interested companies will need to apply for feasibility licences between 3 September and 6 November 2024. Companies are expected to maximise local content and demonstrate their contribution to local and Australian communities by using Australian goods and services.

Revolution Wind Completes Installation of Project's First Offshore Wind Turbine – Ørsted

Revolution Wind has successfully completed installation of the project's first offshore wind turbine, an historic milestone for Rhode Island and Connecticut's first large-scale offshore wind farm and the first multi-state offshore wind farm in the nation. A centerpiece of the region's blue economy, Ørsted and Eversource's Revolution Wind is directly creating roughly 1,200 jobs across Rhode Island and Connecticut and accelerating the states' clean energy sectors with significant investments in workforce development, union partnerships, shipbuilding, and port infrastructure. Revolution Wind will utilize 65 Siemens Gamesa turbines, the same 11-megawatt turbine model used at the recently completed South Fork Wind.