



8 November 2024

[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

[Marine Energy Collision Risk Video Game](#)

Pacific Northwest National Laboratory recently launched a new version of its [Marine Energy Adventure: Collision Risk Video Game](#) on Tethys. This interactive tool illustrates the different factors influencing collision risk and the spatial scales at which they operate underwater. Please take a moment to share your feedback through [this online survey](#).

[2025 Marine Energy Fellowship](#)

The U.S. Department of Energy (DOE) 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 6 December 2024 and 7 March 2025.

[UMERC Call for Nominations](#)

The University Marine Energy Research Community (UMERC) is now accepting nominations to fill vacant seats on their Board of Directors, including 2 university seats, 1 National Laboratory seat, and 1 blue energy cluster seat. UMERC is a DOE WPTO initiative to increase collaboration among U.S. marine energy researchers. The [Call for Nominations](#) will close 8 November 2024.

BOEM Accepting Study Ideas

The U.S. Bureau of Ocean Energy Management (BOEM) is beginning to formulate its Fiscal Year 2026–2027 Studies Development Plan covering BOEM’s offshore energy and minerals activities and invites you to [submit study ideas](#) by 9 December 2024. Study ideas must be relevant to BOEM's information requirements in the areas of biological, oceanographic (physical and chemical) or social sciences (economic and cultural research), or Indigenous knowledge.

Calls for Abstracts

The [Call for Abstracts](#) for the [Society of Environmental Toxicology and Chemistry \(SETAC\) Europe 35th Annual Meeting](#) is open through 20 November 2024. The meeting will take place from 11-15 May 2025 in Vienna, Austria. Please consider submitting an abstract to Session 3.20: [Chemical Emissions and Associated Environmental Impacts from Offshore Energy Production](#).

The [Call for Abstracts](#) for [OCEANS 2025 Brest](#) is now 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 & Paper Submissions](#) for the [16th European Wave and Tidal Energy Conference \(EWTEC 2025\)](#) has now opened until 13 January 2024. 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 National Offshore Wind Research and Development Consortium has opened its [Solicitation 4.0 - Innovations in Floating Offshore Wind](#) to fund projects that address areas of need for floating offshore wind in the United States, including innovation in ports and vessels, and uncrewed underwater vehicles for environmental monitoring. Proposals due 14 November 2024.

The Clean Energy Transition Partnership (CETPartnership) has opened its [Joint Call 2024](#) to support technology providers, research institutions, infrastructure providers, and industrial or energy companies interested in receiving funding for ideas or in need of innovative clean energy solutions. Pre-proposals are due 21 November 2024 and full proposals are due 2 April 2025.

Net Zero Atlantic has issued a Call for Proposals for the [Nova Scotia-USA Subsea Cable Socioeconomic Study](#), which will develop a report that will provide the Government of Nova Scotia with the information necessary to further understand the socioeconomic impacts of a subsea transmission cable connecting offshore wind energy developments in Nova Scotia to the northeastern U.S. Proposals are due on 22 November 2024.

The Avangrid Foundation recently opened applications for its [2024 Wildlife Rehabilitation Program](#) and welcomes eligible wildlife organizations within its service areas to apply by 22 November 2024. Its goals include supporting local organizations caring for injured wildlife, promoting public outreach and education about wildlife resources and renewable energy, and strengthening relationships with the environmental community where the company operates.

The Research Infrastructure Services for Renewable Energy (RISEnergy) project has opened applications for its first [Transnational Access \(TA\) Call](#), which offers industrial and academic researchers free-of-charge access to a selection of the best scientific infrastructures and services related to renewable energy technologies in Europe. Applications are due 30 November 2024.

The U.S. DOE's Wind Energy Technologies Office (WETO) has announced an [Offshore Wind Workforce Readiness](#) program that will award successful applicants offering offshore wind education and training programs that offer apprenticeship readiness programs, registered apprenticeship programs, or maritime/mariner programs. Applications due 13 December 2024.

The U.S. DOE has announced a new program, [Clean Energy Careers for All \(CEC4A\)](#), that will award nearly \$3 million to non-profit educational organizations—including engineering, scientific, and technical societies—to support programs that promote awareness and interest in clean energy careers among K-12 and university students, alumni and academic professionals, veterans, and formerly incarcerated individuals. Phase 1 submissions are due 13 December 2024.

The U.S. DOE's WETO has issued a [Funding Opportunity Announcement](#) in coordination with Innovation Fund Denmark to support U.S.-Danish consortia collaborating on shared research objectives to improve floating offshore wind energy mooring and anchoring technologies and methods towards commercialization and industry growth. Submissions are due 14 January 2025.

Horizon Europe (HORIZON) has opened several Calls for Proposals including, [Minimisation of environmental, and optimisation of socio-economic impacts in the deployment, operation and decommissioning of offshore wind farms](#), [Demonstrations of innovative floating wind concepts](#), and [Critical technologies for the future ocean energy farms](#). 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.

The Responsible Offshore Science Alliance (ROSA) has announced a Notice of Intent to issue a Request for Proposals for its [Regional Research Program](#), which aims to advance the methods

and understanding of regional and cumulative effects of offshore wind on fish and fisheries and support meaningful solutions to the challenges surrounding responsible ocean co-use.

Career Opportunities

The University of Washington School of Marine and Environmental Affairs invites applications for a tenure-track [Assistant Professor in Coastal and Environmental Affairs](#). Applications will be reviewed beginning 15 November 2024 and those received by 2 December will be given priority.

Ocean Energy Europe is seeking a [Policy & Research Officer](#) to lead the gathering and publication of key information and analysis on and for the ocean energy sector, including deployment statistics, financing needs and priorities, environmental impacts, and manufacturing capacity. Applications are due 18 November 2024.

Aquatera has several [Graduate Internship](#) opportunities available covering a broad range of projects and disciplines, including renewables, environmental assessment, data management, and GIS. Applications are due 18 November 2024.

The University of Oxford is offering [Research Studentships in Tidal Stream Energy](#) and seeking doctoral students to work on the CoTide program with interests in one or more areas of: turbine hydrodynamics and design, resource modelling, naval architecture and ocean engineering, system optimization and control co-design. Applications are due 3 December 2024.

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. Materials are due by 15 November 2024 for full consideration; applications to ECU are due by 15 January 2025.

MarineSitu, a spin-off from the University of Washington's Pacific Marine Energy Center and Applied Physics Lab, is seeking a [Full Stack Software Engineer](#) and a [Machine Learning Engineer](#) to join its dynamic team in creating underwater monitoring technology.

The National Audubon Society is looking for a [Director of Offshore Wind](#) to represent its science, conservation, and coastal and marine expertise in advocacy on federal and state planning processes, permitting under federal laws that protect birds, and selected priority projects in collaboration with industry, federal and state agencies, eNGO partners, and other groups.

The National Renewable Energy Laboratory (NREL) is hiring an [Undergraduate/Graduate \(Spring\) Intern – Marine Energy Converter Design and Development](#) to design, analyze, and optimize the Novel Kelp-Inspired Marine Energy Converter (PKelp™).

Upcoming Events

Upcoming Webinars

The New York State Energy Research and Development Authority (NYSERDA) is hosting the “[NYSERDA Offshore Wind Program Webinar](#)” on 13 November 2024 from 11:00am-12:00pm EST (4:00-5:00pm UTC). The webinar will explain the interactions between NYSERDA's offshore wind and supply chain solicitations and provide other program updates.

The Supergen Offshore Renewable Energy Hub is hosting a webinar, “[Wind Farm Modelling](#)”, on 14 November 2024 from 1:00-2:00pm UTC. The webinar will be hosted by Professor Tim Stallard from the University of Manchester on the topic of Wind Farm Modelling.

The Marine Alliance for Science and Technology for Scotland (MASTS) [Marine Planning & Governance Forum](#) is hosting an Open Forum Session, “[Policy approaches to enhancing the marine and coastal environment](#)” on 18 November 2024 from 1:00-2:30pm UTC online.

NYSERDA is also hosting a webinar, “[Learning from the Experts: Scaling Offshore Wind Turbines](#)” on 20 November 2024 from 1:00-2:00pm EST (6:00-7:00pm UTC). In this webinar, Walt Musial with NREL will discuss the benefits and challenges of increasing offshore wind turbine size, including cost and risk implications and impacts to the offshore wind supply chain.

ETIP Ocean, the European Technology & Innovation Platform for Ocean Energy, is hosting the [SafeWave Final Event: Streamlining the Assessment of Environmental Effects of Wave Energy](#) on 28 November 2024 at 11:00am-12:30pm CET (10:00-11:30am UTC).

Upcoming Conference

The Chilean Marine Energy Research and Innovation Center (MERIC) is hosting the first [Offshore Wind Energy Seminar in Chile](#) on 6 December 2024 in Santiago, Chile. Complete this [form](#) if you are interested in participating and staying up to date with the latest news and details.

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

[2024 State of the Science Report - Chapter 2: Progress in Understanding Environmental Effects of Marine Renewable Energy – Copping & Hemery 2024](#)

Chapter 2 examines the status of environmental monitoring around deployed and upcoming MRE devices in countries around the world, with a major emphasis on OES-Environmental member countries. While there is currently no accurate count of the number of MRE devices that have been deployed around the world over the past two decades, it is safe to say that many have had no environmental assessments or post-installation monitoring associated with them. However, 86 MRE projects were identified for which environmental baseline and/or post-installation monitoring were carried out,

with an emphasis on stressor-receptor interactions. The United Kingdom, Europe, and the Americas lead with the greatest number of MRE devices with associated environmental monitoring, while other locations around the world are also moving forward with environmental assessments and research.

ALFA Task 10: Quantifying Collision Risk for Fish and Turbines – Polagye et al. 2024

The objective of this task was to add to that knowledge base in four areas: (1) To collect data on fish interactions with an operating tidal turbine; (2) To contextualize these interactions with the changes the turbine makes to the physical environment – specifically, the proximate flow disturbance and radiated noise that are a consequence of energy harvesting; (3) To interpret the behavior of fish interacting with the turbine and how this could increase or mitigate collision risk; and (4) To employ models for these interactions that could be used in a predictive manner at other locations. The project was initiated in 2017 as a collaboration between Pacific Northwest National Laboratory (PNNL) and PMEC researchers at the University of Washington (UW) and University of Alaska Fairbanks (UAF). Fish interactions were to be monitored around a pair of cross-flow turbines with a rated power output of 1 kW that were to be deployed in Sequim Bay, WA at PNNL’s Marine & Coastal Research Laboratory (MCRL).

Working Group on Offshore Renewable Energy (WGORE; outputs from 2023 meeting) – Copping et al. 2024

WGORE focuses on coordinating scientific knowledge application for offshore energy installations. It aims to optimize ICES service in managing tidal, wave and offshore wind energy by assessing environmental impacts, regulatory processes, and future challenges. In this report we give an overview of the work done on cumulative effects assessment of offshore renewables, chemical usage impacts, and environmental effects of emerging marine renewable energy technologies. As well as progress on the review of emerging and re-emerging environmental issues associated with offshore wind, wave and tidal energy developments. Collaborative efforts in drafting peer-reviewed journal papers addressing each Term of Reference are ongoing. Future work will include a review on the effectiveness and transferability of management measures to reduce, mitigate or compensate damage of the natural environment.

Wind Energy

Avoidance & Minimisation of Environmental Impacts from Offshore Wind & Grid Infrastructure – Offshore Coalition for Energy & Nature (OCEaN) 2024

In order to support the deployment of offshore wind and grid in a nature-friendly manner, the Offshore Coalition for Energy and Nature (OCEaN) has identified 80 measures through which wind and grid developers can minimise potential environmental impacts on marine ecosystems. This work includes measures that reflect the first two steps of the mitigation hierarchy – avoidance and minimisation. This was done by combining the fragmented knowledge on available avoidance and minimisation measures for offshore

wind and grid infrastructure, including the most recent, relevant, and available information, and finding common ground between the diverse stakeholders that make up OCEaN. Furthermore, ‘best practice’ measures were identified, which are implemented across multiple sites and are proven to effectively reduce negative environmental impacts.

[Mapping and characterizing the visual impacts of the existing US wind turbine fleet](#) – Gleason et al. 2025

Visual impacts of wind turbines have been a persistent concern for wind energy development in the United States (US) for decades and remain a major source of project delays and cancellations. Assessments of visual impacts are frequently performed at a local scale for individual projects, but a comprehensive understanding of broader geographic patterns in visual impacts across the US is lacking. This paper presents a visual impact assessment of the existing land-based wind turbine fleet of the contiguous United States (CONUS). The assessment combines geographic information systems and 3D simulation methods to account for key factors driving the visual magnitude of impacts from the installed turbines. The results indicate that, despite the deployment of approximately 70,000 turbines and over 144 gigawatts of land-based wind in the CONUS, the visual impacts are very small when measured as a proportion of land area, population, and sensitive visual resources.

[Accelerating Offshore Wind: Developing a regional ecosystem monitoring programme for the UK offshore wind industry](#) – Offshore Renewable Energy Catapult 2024

This report introduces an alternative monitoring approach for the offshore wind industry. There is a need to take advantage of innovative technologies to better understand the functioning of the UK marine ecosystems within which large-scale offshore wind deployment is situated. There needs to be a collaborative effort to enable a transformation in data gathering driven by a regional ecosystem-based monitoring programme (REMP) supported by new technologies that can be confidently incorporated into impact assessments and future monitoring plans. By implementing a regional monitoring programme, a more coherent and cohesive approach across multiple sites can deliver targeted monitoring that enables the cumulative effects to be more accurately assessed.

News & Press Releases

Marine Energy

[Proteus Marine Renewables signs an MOU with SKF Marine and GE Vernova to support collaboration on multi-megawatt tidal stream projects](#) – Proteus Marine Renewables

Proteus Marine Renewables (PMR) has signed a memorandum of understanding (MOU) with SKF and GE Vernova’s Power Conversion business. The MOU sets out a framework for a potential alliance to supply tidal turbine generation systems to

developers of tidal arrays for commercial, multi-megawatt tidal stream projects. An initial focus will be the supply of a minimum 59MW to MeyGen at its site in Scotland, the largest tidal stream facility in the world. The agreement illustrates the intent to collaborate on development, delivery, operations and maintenance, utilizing the partners' expert capabilities to provide robust operational performance.

Australian wave energy prototype reaches marina, waiting for offshore deployment – Offshore Energy

The University of Western Australia's (UWA) Moored MultiModal Multibody (M4) wave energy prototype has been transferred to the Albany Waterfront Marina. According to the UWA Oceans Institute, the device was transported from the MCB Construction yard and arrived at Albany Waterfront. With final preparations underway, the M4 will soon be lifted into the water and towed to King George Sound. Over the six-month period, the M4 is expected to generate renewable energy from wave motion while gathering crucial performance data, providing insights into the technology's effectiveness as a clean energy source for Australia's Great Southern region.

INFINITY Project awarded EUR 1.7 million from Clean Energy Transition Partnership (CETP) program – Ocean Harvesting

INFINITY Project will develop lifetime-aware Model Predictive Control (MPC) to be tested on InfinityWECs power take-off in an HIL test rig at VGA in Italy. Optimizing power take-off systems and control algorithms for wave energy converters is essential to reduce the use of materials per MW installed capacity and lower the levelized cost of energy (LCOE). The INFINITY Project delivers the next generation PTO and control system, taking advantage of learnings and test methods from both the IMPACT and the VALID H2020 projects. The project is co-ordinated by RISE Research Institute of Sweden, and will run for three years starting in December 2024.

Carnegie and Hewlett Packard Enterprise extend Collaboration Agreement – Carnegie Clean Energy

Carnegie is pleased to announce a two-year extension of its collaboration agreement with Hewlett Packard Enterprise (HPE), a global leader in information technology. This partnership focuses on advancing Carnegie's CETO wave energy technology by bringing together HPE's expertise in artificial intelligence and high-performance computing with Carnegie's expertise in wave energy control and operations. The companies have been working together since 2020, with HPE's research group, Hewlett Packard Labs, playing a key role. The agreement between Carnegie and HPE is for an additional two years, to 15 November 2026. All other terms and conditions of the agreement remain in effect.

Marine Energy Wales and the National Hydropower Association Strengthen Collaboration with Signed Agreement – Marine Energy Wales

Marine Energy Wales (MEW) and the National Hydropower Association (NHA), have signed a Memorandum of Understanding, outlining and enhancing their collaborative efforts to support the global marine industry. MEW serves as the representative body for the tidal stream, tidal range, floating offshore wind and wave energy sectors in Wales, whilst the NHA represents more than 300 companies in the North American water power industry. The two organisations are key drivers for marine renewables in their respective countries, and both are committed to realising the potential of marine energy and supporting a secure, cost-effective transition to Net Zero. It's hoped this recently signed agreement can help recognise opportunities for mutual support and areas of collaboration to benefit industry in Wales and the United States of America (USA).

Wind Energy

[Biden-Harris Administration Holds First Offshore Wind Lease Sale in the Gulf of Maine – U.S. Department of the Interior](#)

The Biden-Harris administration recently completed its sixth offshore wind lease sale by offering areas in the Gulf of Maine – the first commercial sale for floating offshore wind on the Atlantic Coast. The sale, conducted by BOEM, resulted in two provisional winners on four lease areas and over \$21.9 million in winning bids. Through the sale, Avangrid Renewables, LLC won Lease OCS-564 at \$4,928,250, which consists of 98,565 acres and Lease OCS-568 at \$6,244,850, which consists of 124,897 acres. Both lease areas are approximately 29.5 nautical miles (nm) from Massachusetts. Invenergy NE Offshore Wind, LLC won Lease OCS-562 at \$4,892,700, which consists of 97,854 acres and is approximately 46.2 nm from Maine and Lease OCS-567 at \$5,889,000 which consists of 117,780 acres is approximately 21.6 nautical miles (nm) from Massachusetts.

[Permits in place for RWE to kick off offshore construction for Denmark's largest offshore wind farm in spring – RWE](#)

The Danish Energy Agency has granted RWE the offshore construction permit for its Danish offshore wind farm Thor. RWE therefore now has all permits in place to start construction work at sea in spring 2025. With more than one gigawatt of capacity, Thor will be able to produce enough green electricity to supply the equivalent of more than one million Danish households. Good progress is already being made on land, with the laying of cables and the construction of an onshore substation in the municipality of Lemvig. At the beginning of next year, RWE will prepare the seabed for the construction activities, which will kick off in spring when the foundations are installed. Turbine installation is scheduled to begin in 2026.

[BOEM Announces POWERON Acoustic Monitoring Program for Offshore Wind Projects – U.S. BOEM](#)

The U.S. BOEM announced the establishment of the Partnership for an Offshore Wind Energy Regional Observation Network (POWERON), an innovative public-private partnership between BOEM and offshore wind lessees designed to maximize the quality

and consistency of scientific data collected in lease areas while conserving and optimizing resources. This partnership is the latest way that the Biden-Harris administration is harnessing technology to responsibly advance offshore wind development in a way that protects biodiversity. The POWERON initiative expands BOEM's recently established Passive Acoustic Monitoring Network in the Atlantic Ocean, which the bureau launched with \$5.8 million of funding from the Inflation Reduction Act, to study the potential impacts of offshore wind facility operations on baleen whales.

Sweden Rejects 13 Offshore Wind Farms, Greenlights Vattenfall's Poseidon Project – Offshore Wind

The Swedish government has rejected 13 applications to build offshore wind farms in the Baltic Sea due to defence concerns while approving one project on the west coast, being developed by a joint venture between Vattenfall and Zephyr. The government rejected OX2's 5.5 GW Aurora, the 3.1 GW Neptunus, the 1 GW Pleione, and the 1.4 GW Triton offshore wind projects. Another developer, Eolus, had two of its projects denied: the 1.4 GW Arkona and the 2.2 GW Skibladner. Additionally, Sweden rejected applications from Denmark's Ørsted for the 1.5 GW Skåne project, as well as RWE's 2 GW Södra Victoria, Statkraft's 2.5 GW Baltic Offshore Beta, and 2.1 GW Baltic Offshore Delta North projects. According to the government, the only offshore wind farm approved, Poseidon on the west coast, is expected to generate approximately 5.5 TWh of electricity annually.

Major Project Status for Gippsland Dawn Offshore Wind – BlueFloat Energy

The Gippsland Dawn Offshore Wind Project has been granted Major Project Status (MPS) by the Australian Government—one of 16 diverse projects nationwide to receive this recognition and only the second offshore wind projects being developed to hold this status. The Australian Minister for Industry and Science, Ed Husic, has written to Gippsland Dawn's proponent, BlueFloat Energy, to confirm the granting of MPS. The decision recognises the national significance of the project to Australia's development of an offshore renewable energy industry and energy transition. The Gippsland Dawn Offshore Wind Project was granted a feasibility licence earlier this year, and plans are now underway to install wind turbines and offshore substations in Bass Strait, situated between 10 and 33 kilometres from the coast, between Paradise Beach and Ocean Grange.