



27 September 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

OES-Environmental 2024 State of the Science Report Released

[OES-Environmental](#) recently released 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! The *2024 State of the Science Report*, available on [Tethys](#), 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.

2025 Marine Energy Fellowship

The U.S. Department of Energy's (DOE's) Water Power Technologies Office (WPTO) and the Oak Ridge Institute for Science and Education (ORISE) recently opened applications for the [2025 Marine Energy Fellowship](#). The program features one track for graduate students working on marine energy-focused research theses or dissertations and a new post-graduate track for recent graduates focused on advancing their careers in marine energy. Applications are due 6 December 2024 and 7 March 2025 depending on the applicant's desired start date.

New Marine Energy Video Game

Pacific Northwest National Laboratory recently launched a new version of its [Marine Energy Adventure: Collision Risk Video Game](#) on Tethys! The interactive tool illustrates the different

factors influencing collision risk and the spatial scales at which they operate as underwater animals (e.g., fish or marine mammals) approach a tidal turbine.

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.](#)

Calls for Submissions

Net Zero Atlantic has opened the Call for Submissions for the [Nova Scotia Offshore Wind Research & Development Forum](#)'s [Student Poster Competition](#) and [Student Science Slam](#) until 4 October 2024. The event 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 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 U.S. DOE's WPTO recently opened the [Oceans of Opportunity: U.S. Wave Energy Open Water Testing](#), which will provide up to \$112.5 million in funding to advance the commercial

readiness of wave energy technologies through open water testing and system validation. WPTO is hosting an informational webinar on 9 October. Concept papers are due 25 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.

The U.S. DOE's Wind Energy Technologies Office (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. A [public webinar](#) will take place 17 October 2024, and submissions are due 14 January 2025.

Career Opportunities

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.

Le Havre University Normandy is offering a [postdoctoral position](#) on numerical fluid-structure interaction and a [postdoctoral position](#) on physical modeling of fluid-structure interaction to support the DRACCAR research and development program, led by France Énergies Marines.

Offshore Renewable Energy Catapult is seeking a [Senior Marine Autonomy Specialist](#) to provide expertise in marine autonomous systems and a [Research Engineer – Data Science](#) to work on AI, machine learning, and cloud technologies to support the offshore renewable energy sector.

Eco Wave Power is seeking an [Executive Assistant](#) who will play a critical role in ensuring the CEO's productivity and efficiency by managing their calendar, handling outstanding items, and being the CEO's right-hand person.

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 recently released [2024 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World](#). [Register here](#).

The TEAMER program is hosting a webinar, "[TEAMER Program Update: Commercialization Support](#)", on 8 October 2024 from 12:00-1:00pm (7:00-8:00pm UTC). This webinar and the associated request for information will be an opportunity for existing and prospective technical

support recipients to provide early feedback and inform the addition of a new Commercialization Support category to the TEAMER program to ensure the support offered will be beneficial to developers. [Register here.](#)

France Énergies Marines is hosting a webinar, “Marines Dune Dynamics and Offshore Wind Farms”, on 17 October 2024 from 2:00-3:00pm CEST (12:00-1:00pm UTC). The webinar will discuss the results of the MODULLES project, which modelled marine dune dynamics and their interaction with offshore wind infrastructure and investigated the future needs to combine physical and ecological aspects of the marine dunes and understand their resilience after the construction phase. [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.](#)

WREN is also hosting its second Spanish webinar, “[Energía Eólica en América Latina: Soluciones Ambientales y Mejores Prácticas \(Wind Energy in Latin America: Environmental Solutions and Best Practices\)](#)” on 23 October 2024 from 11:00am-12:00pm MDT (5:00-6:00pm UTC). During the webinar, researchers from Argentina, Brazil, and the United States will discuss wind energy in Latin America and environmental solutions and best practices. The webinar will be hosted in Spanish and Portuguese. [Register here.](#)

Upcoming Conferences

RenewableUK and Scottish Renewables are hosting [Floating Offshore Wind 2024](#) on 9-10 October 2024 in Aberdeen, Scotland.

Rutgers University is hosting the [North American Wind Energy Academy \(NAWEA\)/WindTech 2024 Conference](#) from 28 October to 2 November 2024 in New Brunswick, New Jersey.

The Ocean Thermal Energy Association is hosting the [10th International OTEC Symposium](#) will take place on 4-5 December 2024 in Rio de Janeiro, Brazil.

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

[Recent Advances in Assessing Environmental Effects of Marine Renewable Energy Around the World](#) – Copping et al. 2024

Marine renewable energy (MRE) is increasingly of interest to coastal nations as a source of renewable energy that can support climate change mitigation goals as well as provide secure locally-produced energy for coastal and island communities. MRE extracts power from tidal streams, waves, ocean currents, run of rivers, and gradients in the ocean, with specialized devices developed and tested for each energy resource. Alongside development of MRE technologies and systems, first in Europe and then in North America, Australia, Asia, and other regions, it has been universally recognized that there is also a need to examine potential effects on marine animals, habitats, ecosystem processes, local communities and other sea users, to ensure that the MRE industry can be developed in a responsible and sustainable manner.

Ocean Wave Energy in Australia – Wolgamot et al. 2024

Ocean wave energy is undergoing a renaissance, with significant funding and effort worldwide devoted to this source of clean energy. This is driven by multiple factors, including the need for decarbonisation and renewable energy development in the face of climate change, the recognition of the diverse benefits of ocean wave energy as part of clean energy systems and a burgeoning Blue Economy. With the world's largest national wave energy resource, Australia is uniquely well-placed to lead in this space, but is not keeping pace with global developments. Consequently, Australia is not realising the financial, social, and environmental benefits that could result from the development of a robust and sustainable ocean wave energy industry.

Sheared turbulent flows and wake dynamics of an idled floating tidal turbine – Lieber et al. 2024

Ocean energy extraction is on the rise. While tides are the most predictable amongst marine renewable resources, turbulent and complex flows still challenge reliable tidal stream energy extraction and there is also uncertainty in how devices change the natural environment. To ensure the long-term integrity of emergent floating tidal turbine technologies, advances in field measurements are required to capture multiscale, real-world flow interactions. Here we use aerial drones and acoustic profiling transects to quantify the site- and scale-dependent complexities of actual turbulent flows around an idled, utility-scale floating tidal turbine (20 m rotor diameter, D). The combined spatial resolution of our baseline measurements is sufficiently high to quantify sheared, turbulent inflow conditions (reversed shear profiles, turbulence intensity $>20\%$, and turbulence length scales $> 0.4D$).

Wind Energy

A decade of curtailment studies demonstrates a consistent and effective strategy to reduce bat fatalities at wind turbines in North America – Whitby et al. 2024

There is a rapid, global push for wind energy installation. However, large numbers of bats are killed by turbines each year, raising concerns about the impacts of wind energy expansion on bat populations. Preventing turbine blades from spinning at low wind

speeds, referred to as curtailment, is a method to reduce bat fatalities, but drawing consistent inference across studies has been challenging. We compiled publicly available studies that evaluated curtailment at six wind energy facilities in North America across 10 years. We used meta-regression of 29 implemented treatments to determine fatality reduction efficacy as well as sources of variation influencing efficacy. We also estimated species-specific fatality reduction for three species that comprise most fatalities in North America: hoary bat (*Lasiurus cinereus*), eastern red bat (*Lasiurus borealis*) and silver-haired bat (*Lasionycteris noctivagans*).

[Options for biodiversity-friendly designs and approaches for offshore wind farms in Ireland](#) – BlueWise Marine 2024

This report presents the findings of a literature review and analysis of initiatives for integrating biodiversity aspects into the design, construction, operation, and decommissioning of offshore wind farms (OWFs) in Ireland. The aim of this study was to identify and evaluate options for enhancing biodiversity in offshore wind projects. The study identified 123 relevant nature-based solutions (NBS) projects from around the world, which were then rated based on their suitability and efficacy potential for Ireland. The methodology involved a systematic literature review using various research databases and keyword searches to identify relevant papers and reports. The review primarily focused on projects and initiatives conducted in North America and Europe that are particularly relevant to the species and habitats found in Ireland.

[Halfway up the ladder: Developer practices and perspectives on community engagement for utility-scale renewable energy in the United States](#) – Nilson et al. 2024

Community engagement is a key pathway for incorporating social considerations into the development of utility-scale renewable energy facilities. Prior literature recommends meaningful, early community engagement to both improve siting outcomes and empower the public to participate in decision-making, but there is no recent nor comprehensive understanding of industry experiences with engagement. This study provides a critical contribution by revealing the practices and perspectives of project developers. We draw upon a survey of 123 professionals employed at 62 unique companies across the United States. We demonstrate that developers are highly concerned about the impact of community opposition on project deployment, and that they already use a variety of engagement strategies and adjust project designs in response to community feedback.

News & Press Releases

Marine Energy

[UH wave energy project with military takes shape off Kāneʻohe](#) – Hawaiʻi Public Radio

Through years of innovation, wave power is taking shape in Hawaiʻi's open water. Patrick Cross, the University of Hawaiʻi's ocean energy program manager, has been

working for the last decade or so to develop this renewable energy source. The Wave Energy Test Site off Marine Corps Base Hawai'i in Kāne'ōhe is funded by the Navy. If all goes as planned, Cross and his team hope to begin producing power for the military and hooking up to the energy grid as soon as next month. "In October, it looks like we're gearing up now for making that device operational, which means picking up our shore cable from the seabed and connecting in their 'umbilical-cable,' as we call it, and splicing that in, and then the device would actually be sending power onshore to the Marine Corps Base grid, and thus to the HECO O'ahu power grid," Cross told HPR.

HydroWing successfully completes hydrodynamic blade testing for tidal energy – Inyanga Marine Energy Group

Inyanga Marine Energy Group has successfully completed hydrodynamic testing of the revolutionary Passive Pitch Unit for its patented HydroWing technology. HydroWing was recently awarded the largest tidal energy project in the UK in Allocation Round 6 of the UK government's Contracts for Difference scheme and the company is now on course for deploying a 20MW tidal energy project at Morlais in Wales, in addition to other projects around the world. The hydrodynamic testing was conducted at the Kelvin Hydrodynamics Laboratory at the University of Strathclyde in Scotland. The test results confirm that the cutting-edge blade rotor on HydroWing's tidal energy device can automatically regulate its own pitch using its innovative, self-adjusting system.

MEGA WAVE PTO Project: Revolutionising Wave Energy System Design to Accelerate EU's Net-Zero Targets – MEGA WAVE PTO

The MEGA WAVE PTO project is set to transform the future of renewable energy by harnessing the untapped power of ocean waves. Kicked-off in May, this ambitious project aims to develop an innovative, scalable, and easily maintainable all-electric modular power take-off (PTO) system, designed to convert ocean waves into clean, reliable energy sources. The innovative MEGA WAVE PTO system will cover a broad range of capacities from kilowatts (kW) to megawatts (MW), making it suitable for a wide range of wave energy devices. By leveraging C-GEN's modular design, which incorporates advanced components such as a magnetic gear and generator, the system offers numerous benefits compared to existing technologies.

Climate solutions: 2 kinds of ocean energy inch forward off the Oregon coast – Associated Press

On a cloudy late August morning, Burke Hales was on a boat a mile off the central Oregon coast, pointing to a sandy beach along the forested shoreline. It was there, the Oregon State University oceanography professor said, that the subsea cables from the first large wave energy test site in the continental U.S. will connect to land — and ultimately the local power grid. "This is the highest power — probably the most energetic — wave condition of any of the test sites out there," he said, as the high swells known to pound the Oregon coast rocked the boat. The coastal waters of Oregon are shaping up to be key for advances in two forms of renewable energy: wave power and wind turbines

that float. The way electricity is traditionally made is a major cause of climate change, so clean alternatives are key to addressing it.

[Anglesey tidal energy project moves forward as environmental plan completes](#) – Offshore Energy

Natural Resources Wales has completed the Environmental Monitoring and Mitigation Plan (EMMP) for the Marine Characterization Research Project (MCRP), led by Menter Môn. The EMMP, developed with input from environmental stakeholders and an advisory group, is part of the marine license for the Morlais tidal energy project. It aims to protect marine mammals, seabirds, and migratory fish during tidal device deployment in the Morlais zone. According to Menter Môn, baseline data collected by the MCRP will be available via The Crown Estate's Marine Data Exchange, with continuous analysis informing updates to the EMMP as tidal energy projects expand. Menter Môn Morlais owns and manages Morlais, including the new landfall substation near Holyhead, and holds the marine license, making it responsible for the project. The first tidal energy devices are set for deployment in 2026.

Wind Energy

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

The Department of the Interior recently announced it will hold an offshore wind energy lease sale on Oct. 29, 2024, for eight areas on the Outer Continental Shelf off Massachusetts, New Hampshire, and Maine. If fully developed, these areas have a potential capacity of approximately 13 gigawatts of clean offshore wind energy, which could power more than 4.5 million homes. The announcement follows the Department's recent announcement that it has approved more than 15 gigawatts of clean energy from offshore wind projects since the start of the Biden-Harris administration— equivalent to half of the capacity needed to achieve President Biden's goal of 30 gigawatts of offshore wind energy by 2030. Earlier this year, Secretary Haaland announced a schedule of potential additional lease sales through 2028.

[Iberdrola strengthens its leadership in offshore wind with the inauguration of €2.4 billion Saint-Brieuc project in France](#) – Iberdrola

On Thursday 19th September in Brittany, Iberdrola inaugurated the Saint-Brieuc offshore wind farm in France, the second largest in the country, with 496-megawatt (MW) of capacity and an annual production of nearly 2,000 gigawatt hours (GWh). This will make it possible to provide secure, indigenous, and emission-free energy to close to 1 million people. With an investment of €2.4 billion, the project began development in 2012 and entered full operation in 2024, following three years of construction. It consists of 62 turbines, each with a capacity of 8 MW, the most powerful installed in France to date. Years of planning was involved in ensuring hundreds of companies across the supply chain delivered components and equipment to specification and on schedule, all

supported by expert teams leading on thousands of environmental protection measures and delivering against a wide range of social requirements.

European test centres for offshore wind unite to accelerate offshore wind deployment – WavEc

At WindEnergy Hamburg five European offshore wind test sites formed a new alliance, aiming to improve conditions for floating wind demonstration projects. BiMEP, CEO, Fondation OPEN-C, METCentre and PLOCAN have created HiPoTeSis. This unique and collaborative network of five operational offshore demonstration test sites aims to provide the European Union with the future high-power infrastructure for testing new floating wind projects. The alliance will meet the common challenges of the sector. The most important being permitting. In a seminar hosted by World Forum for Offshore Wind at WindEnergy Hamburg the test sites presented their action points: Implementing fast track permitting system for demo projects, inclusions of two annual demo projects in relevant EU calls, create new European support scheme for co-investments in infrastructure and initiate better incentives for data sharing.

'World's First' In-Situ Generator Swap on Floating Wind Turbine Completed Offshore Scotland – Offshore Energy

A generator on a turbine at the Kincardine floating wind farm off the coast of Scotland has been replaced, in what is being claimed as the “world’s first” in-situ major component exchange at a floating offshore wind farm. The work on the Vestas V164-9.5 MW wind turbine was carried out using an offshore support vessel (OSV) without the need to tow the unit back to a port, and was supported by crew transfer vessels (CTVs). Several companies were included in the process, including LiftOff, Vestas, Kincardine owner Dragados S.A., and Cobra Wind International. To perform the process, a GenHook up-tower crane, supplied by the Netherlands-based LiftOff, was temporarily installed atop the Vestas turbine. After Vestas prepared the wind turbine generator and decommissioned the old one, LifOff lifted it from the nacelle and lowered it to the deck of the floater, where it was then transferred to the OSV.

OASIS: Offshore Accelerator for System Integration and Storage – Dutch Marine Energy Centre

Kicking off in September 2024, the Offshore Accelerator for System Integration and Storage (OASIS) is a holistic programme to accelerate the development and uptake of system integration and storage SMEs in the offshore renewable energy (ORE) sector. By developing tools and consolidating expertise across borders, the project will provide training, market research and a strong network, all specifically targeted at the ORE sector. The ORE sector is not only driving the green transition in the North Sea Region, but also becoming one of its largest industries with an estimated value of € 16 billion in 2021 already and targets to grow by a factor of 7 over the coming 5 years. This presents a great potential for the blue economy in general and for a broad range of innovations in particular.