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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

WindExchange Survey

The U.S. Department of Energy's (DOE) [WINDExchange website](#) provides resources for decision makers, communities, and individuals to understand the benefits and impacts of wind energy markets, technology, and development. Please help improve the website by completing this [short survey](#) by 29 April 2024.

SCGSR Applications Open

The U.S. DOE's [Office of Science Graduate Student Research \(SCGSR\) program](#) is accepting applications for its 2024 solicitation cycle, which provides awards to U.S. graduate students to conduct part of their graduate research at a DOE national laboratory or facility in collaboration with a DOE laboratory scientist. Applications are due on 1 May 2024.

MECC Applications Open

The U.S. DOE's Water Power Technologies Office (WPTO) recently opened applications for the sixth annual [Marine Energy Collegiate Competition \(MECC\)](#), which asks student teams to integrate marine energy with blue economy applications such as ocean-powered autonomous vehicles, aquaculture, and desalination. Applications are due 6 May 2024.

CWC Applications Open

The U.S. DOE's Wind Energy Technologies Office (WETO) recently opened applications for the [2025 Collegiate Wind Competition \(CWC\)](#), which helps students prepare for jobs in the wind energy workforce through real-world experiences with wind technology, project development, finance, communications, and outreach. Applications are due 13 June 2024.

ETIPP Applications Open

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

BOEM Seeking Public Comments

The U.S. Bureau of Ocean Energy Management (BOEM) is seeking public comments on its:

- Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for a proposed offshore wind energy project offshore [New Jersey](#) (due 2 May 2024);
- NOI to prepare an EIS for the proposed [Vineyard Northeast Offshore Wind Energy Project](#) (due 9 May 2024); and its,
- Proposed offshore wind energy auction in the [Gulf of Mexico](#) (due 20 May 2024).

Calls for Abstracts & Papers

The [Call for Abstracts](#) for the [International Conference on Ocean Energy \(ICOE 2024\)](#) is still open. ICOE 2024 will take place on 17-19 September 2024 in Melbourne, Australia.

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

American Clean Power (ACP) has extended the [Call for Proposals](#) for the [ACP Resource & Technology Conference 2024](#) through 30 April 2024. The conference will take place from 30 September to 2 October 2024 in Phoenix, Arizona, U.S.

The University of Maine has opened the [Call for Abstracts](#) for the [American Floating Offshore Wind Technical Summit \(AFloat 2024\)](#) through 1 May 2024. AFloat will take place on 24-25 September 2024 in Portland, Maine, U.S.

The [Call for Posters](#) for [Structures in the Marine Environment \(SIME 2024\)](#) is now open through 3 May 2024. SIME 2024 will take place on 22-23 May 2024 in Edinburgh, Scotland.

The [Call for Abstracts](#) is now open for the [North American Wind Energy Academy \(NAWEA\) / WindTech 2024 Conference](#) through 17 May 2024. NAWEA/WindTech will take place from 28 October to 2 November 2024 in New Brunswick, New Jersey, U.S.

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

Funding & Testing Opportunities

The [Marine Fund Scotland](#) is open to support eligible individuals, businesses, organizations, and communities in delivering projects that contribute to an innovative and sustainable marine economy, reducing carbon emissions, and supporting coastal communities. Applications for the first round are due 9 May 2024.

The U.S. DOE has 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.

The U.S. DOE recently announced it intends to issue a Funding Opportunity Announcement, “[Offshore Wind National and Regional Research and Development](#),” that will fund \$48 million of projects that address several major areas of need for offshore wind, including improving offshore wildlife protection through new monitoring technologies.

Career Opportunities

Heriot Watt University’s International Centre for Island Technology is offering a fully funded [PhD Scholarship](#) (UK only) to improve the accessibility of offshore wind infrastructure in hostile environments. Applications are due 26 April 2024.

The Institute of Social Anthropology at the University of Bern seeks to appoint a full-time [PhD Researcher](#) to study environmental justice issues around wave and tidal power in East Asia, Southeast Asia, and Canada. Applications are due 28 April 2024.

The University of Southampton is offering a [PhD Studentship](#) focused on developing robotic ground investigation tools for offshore renewable energy and infrastructure in support of the ROBOCONE project. Applications are due 30 April 2024.

The U.S. DOE is looking for a new [Director of WPTO](#) to lead the planning, research, development, demonstration, and deployment strategies for its national water power technologies program, which focuses on hydropower and marine energy. Applications are due 1 May 2024.

The Norwegian University of Science and Technology, in collaboration with the Norwegian Research Centre on Wind Energy, is looking for a [PhD Candidate](#) to work on circumventing avian collision risk using an aerodynamic approach. Applications are due 15 May 2024.

Upcoming Events

Upcoming Hackathon

Mercator Ocean International, an implementer of the European Union (EU) Copernicus Marine Service, is organizing [#OceanHack4EU](#), an online hackathon on 3-7 June 2024 that encourages teams to find data-driven solutions to various ocean challenges. Participation is free.

Upcoming Webinars

The U.S. DOE's WPTO is hosting its next [WPTO Semiannual Stakeholder Webinar](#) on 9 May 2024 from 12:30-2:00pm ET (4:30-6:00pm UTC). Staff will dive into funding opportunities, how the office is working with partners globally, and other accomplishments, news, and updates.

The Ecological Consequences of Offshore Wind (ECOWind) research program is hosting its [second webinar in its ECOWind Policy Masterclass Series](#) on 15 May 2024 from 11:00am-12:00pm UTC that will focus on strategic compensation.

Upcoming Workshops

Ocean Energy Systems ([OES](#)) and the U.S. Portal and Repository for Information on Marine Renewable Energy ([PRIMRE](#)) team are hosting the [4th International Marine Energy Data Sharing Workshop](#) online on 8 May 2024 from 3:00-5:00 PM UTC. [Register here.](#)

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

The [Detection, Classification, Localisation and Density Estimation \(DCLDE\) of Marine Mammals Workshop](#) is taking place on 3-7 June 2024 in Rotterdam, The Netherlands. During the hybrid workshop, participants will share their recent insights into algorithms and technology for automated acoustic monitoring of marine mammals.

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 Conference

Pacific Ocean Energy Trust is hosting the [Ocean Renewable Energy Conference \(OREC 2024\)](#) on 20-23 May 2024 in Portland, Oregon, U.S.

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

[A comprehensive review on scour and scour protections for complex bottom-fixed offshore and marine renewable energy foundations](#) – Chambel et al. 2024

Scour at monopile foundations has been extensively studied. However, advances in scour protections for hybrid structures, and other bottom-fixed foundations for offshore renewable energy harvesting technologies are often kept confidential by stakeholders, and knowledge gaps must be covered. Thus, the present paper provides a summary of the most recent physical and numerical studies related to scour and riprap scour protections for complex bottom-fixed foundations, such as jackets, tripods, gravity-based foundations (GBF), high-rise structure foundations (HRSF), and suction buckets, while covering other marine energy harvesting technologies as well, including wave energy converters (WEC) and tidal energy converters (TEC).

[Investigating displacement of marine animals as a potential effect of marine renewable energy development](#) – Hemery et al. 2024

Displacement of marine animals is not specific to the marine renewable energy (MRE) sector and lessons may be learned from other marine, or even terrestrial, human activities. A literature review on displacement of marine animals was undertaken across three offshore energy sectors: MRE, offshore wind, and oil and gas, and a workshop was organized with international subject matter experts to gather feedback and attempt to reach a consensus around the definition and mechanisms of displacement. This study aims to establish a definition of this stressor-receptor interaction, explore which groups of marine animals may be affected and how, and identifies pathways for investigating displacement through modeling and monitoring in the MRE context.

[Rapidly Deployable Acoustic Monitoring and Localization System Based on a Low-Cost Wave Buoy Platform](#) – Raghukumar et al. 2022

The primary objective of this project is to develop a cost-effective, fit-for-purpose environmental monitoring system, “NoiseSpotter®,” that characterizes, classifies, and provides accurate location information for anthropogenic and natural sounds in near real-time. NoiseSpotter was developed to support the evaluation of potential acoustic effects of marine energy (ME) projects. By utilizing a compact array of three acoustic particle motion sensors, NoiseSpotter triangulates individual bearings to provide sound source localization to within 5% accuracy, allowing the ability to discern ME device sounds relative to other confounding sounds in the environment, while providing location

estimates to nearby marine mammals for environmental mitigation purposes. The ME industry needs proven solutions to meet environmental impact assessment needs.

Wind Energy

[Making eco-sustainable floating offshore wind farms: Siting, mitigations, and compensations](#) – Danovaro et al. 2024

Floating Offshore Wind Farms (FOWFs) are the most promising renewable energy resource. Floating turbines are installed at progressively increasing water depths, interacting with offshore and deep-sea ecosystems. Thus, specific criteria to enable a sound and accurate Environmental Impact Assessment (EIA) are required. The still limited understanding of the impacts of FOWFs, and the concerns for the conflicts in the use of maritime space (e.g., fisheries), might lead to a more precautionary approach and constrain their development. Here we describe the characteristics of the deep habitats potentially impacted and identify a set of comprehensive and standardized criteria, response variables and approaches for a reliable EIA based on an Ecosystem-based approach.

[Prioritizing landscapes for mitigating the impacts of onshore wind farms on multidimensional waterbird diversity in the Yellow Sea](#) – Zhao et al. 2024

Ongoing wind energy developments play a key role in mitigating the global effects of climate change and the energy crisis; however, they have complex ecological consequences for many flying animals. The Yellow Sea coast is considered as an ecological bottleneck for migratory waterbirds along the East Asian–Australasian flyway (EAAF), and is also an important wind farm base in China. However, the effects of large-scale onshore wind farms along the EAAF on multidimensional waterbird diversity, and how to mitigate these effects, remain unclear. Here we examined how wind farms and their surrounding landscapes affected multidimensional waterbird diversity along the Yellow Sea coast.

[Potential impacts of offshore wind energy development on physical processes and scallop larval dispersal over the US Northeast shelf](#) – Chen et al. 2024

This study examines the potential impact of offshore wind energy facilities on the local and regional circulation, stratification, and scallop larval dispersal and settlement over the U.S. Northeast continental shelf. A coupled high-resolution (up to ~ 1.0 m), wind turbine-resolving hydrodynamical (NS-FVCOM) and scallop individual-based (Scallop-IBM) model was employed. Comparisons were made for scenarios with and without wind turbine generators (WTGs), encompassing three-dimensional flow fields, water temperature, bottom stress/vertical mixing, scallop larval dispersal, settlement, and distributions. The interaction of M2 tidal currents with monopiles generates significant horizontal flow shear on the downflow lee side.

News & Press Releases

Marine Energy

[Mocean Energy's wave energy converter back to shore after 12-month offshore testing](#) – Mocean Energy

Mocean Energy's Blue X wave energy converter and Verlume's Halo underwater battery storage system have returned to shore after over 12 months of testing at sea off Orkney as part of the Renewables for Subsea Power (RSP) project that combines wave energy with subsea storage to power subsea equipment. This £2 million RSP project, which connected the Blue X wave energy converter with Verlume's Halo underwater battery storage system, completed a 12-month test program at sea at the beginning of March, with the goal of reaching the finish line this spring. The next steps include removing all equipment from the marine site, ahead of inspection and clean down onshore in Orkney, and moving to Verlume's operations facility in Dyce, Aberdeen.

[Tidal test site in Massachusetts first in US to receive federal license](#) – Offshore Energy

Marine Renewable Energy Collaborative (MRECo), a non-profit corporation dedicated to sustainable development of ocean renewable energy, has secured an eight-year pilot license from the U.S. Federal Energy Regulatory Commission (FERC) to conduct tests on tidal turbines at the Bourne tidal test site (BTTS) in Bourne, Massachusetts. The BTTS stands as the sole tidal test site in the U.S. to attain this license. With this license, the turbines can directly feed renewable electricity into the grid. The BTTS enables tidal turbine developers to test prototypes up to three meters in diameter. With the FERC license, MRECo can oversee testing in the ocean currents of the Cape Cod Canal, assessing turbine efficiency, generation capacity, durability, and environmental impact.

[Oscilla Power Successfully Launches Demonstration Scale Triton™ Wave Energy Converter \(WEC\) on Maine Coast](#) – Oscilla Power

Wave energy technology developer Oscilla Power, the University of Maine's Advanced Structures & Composites Center (ASCC) and the Maine Maritime Academy successfully deployed a 1/6 scale prototype of Oscilla's 1 MW Triton™ wave energy converter (WEC) in Castine Harbor. The goal of this project is to confirm the design and performance of Triton in a real-world operating environment, helping to inform the ongoing engineering design of Oscilla's full-scale, 1 MW Triton WEC in 2024. Due to the unique wave conditions in Castine the 1/6 scaled unit will operate in the same manner as a full-scale unit during this 12-week test.

[ACHIEVE passes EuropeWave Authorisation to Proceed Milestone](#) – Carnegie Clean Energy

Carnegie's ACHIEVE project has successfully passed the Authorisation to Proceed (ATP) milestone in its EuropeWave contract. The ATP represents a significant stage gate,

with the EuropeWave Buyers Group reviewing technical and commercial deliverables. Successful milestone completion now unlocks significant procurement activities. The €3.75m EuropeWave ACHIEVE contract supports the deployment of a CETO wave energy converter in waters of the Basque Country in Spain as part of the ACHIEVE Programme. CETO will be deployed and deliver power to the grid at the Biscay Marine Energy Platform.

Eco Wave Power Signed a Contract with a Major Energy Company for a Demonstration to Harness Energy from the Waves at the Port of Los Angeles – Eco Wave Power

Eco Wave Power recently announced that it has entered an agreement with a major energy company to participate in the development of Eco Wave Power's first project in the United States. Recently, Eco Wave Power also announced that it has conducted a comprehensive feasibility study, with the same major energy company, aimed at identifying the top locations for commercial onshore wave energy stations along the U.S. coastline and worldwide. The three-month, in-depth feasibility study which now has been completed, has shown favorable conditions for clean energy production in multiple locations in the U.S. and globally. In the study, Eco Wave Power has pointed out to at least 77 sites in the U.S. which may be compatible for its technology.

Wind Energy

Interior Department Finalizes Rule to Streamline and Modernize Offshore Renewable Energy Development – U.S. Department of Interior

Secretary of the Interior Deb Haaland recently announced that BOEM and the Bureau of Safety and Environmental Enforcement (BSEE) have finalized updated regulations for renewable energy development on the U.S. Outer Continental Shelf (OCS). The final rule increases certainty and reduces the costs associated with the deployment of offshore wind projects by modernizing regulations, streamlining overly complex processes and removing unnecessary ones, clarifying ambiguous regulatory provisions, and enhancing compliance requirements. BOEM and BSEE have complementary obligations in implementing the offshore wind program. During her remarks, Secretary Haaland also announced a new five-year offshore wind leasing schedule, which includes up to 12 potential offshore wind energy lease sales through 2028.

Significant boost for UK floating wind as flagship project Green Volt achieves offshore consent – Green Volt

Leading offshore wind developers Flotation Energy and Vårgrønn, a joint venture between Plenitude (Eni) and HitecVision, have announced that their pioneering floating offshore wind project, Green Volt, has been granted offshore planning approval. With onshore consent announced earlier this month, Green Volt has now received all its planning approvals and remains on track to be the first commercial-scale offshore windfarm in Europe. When completed, Green Volt will include up to 35 floating wind turbines, providing up to 560 MW of renewable energy capacity. As part of Crown Estate

Scotland's Innovation and Targeted Oil & Gas leasing round, the project will deliver renewable electricity to oil and gas platforms, replacing existing natural gas and diesel power generation. Green Volt will also provide electricity to the UK grid.

Ørsted inaugurates the Asia-Pacific region's largest offshore wind farms – Ørsted

Ørsted is proud to announce the inauguration of the Greater Changhua 1 and 2a offshore wind farms in Taiwan. With a total installed capacity of 900 MW, the two offshore wind farms are in operation and fully connected to the grid, making them the largest of their kind in Taiwan and in the Asia-Pacific region. The inauguration is a major milestone, as the Greater Changhua 1 and 2a offshore wind farms have not only doubled Taiwan's offshore wind capacity; they have also successfully catalysed Taiwan's offshore wind ecosystem. The 900 MW wind farms inaugurated today are part of Ørsted's Greater Changhua offshore wind zone, which also comprises Greater Changhua 2b, Greater Changhua 3, and Greater Changhua 4. The zone has a combined capacity of approximately 2.4 GW.

"We need to understand the real risk wind farms pose to birds" – Vattenfall

Thermal cameras will record bird collisions at the Hollandse Kust Zuid (HKZ) wind farm in a test starting this August. "We are still looking for the right technology to understand the risk of bird collisions," says Jesper Kyed Larsen, Bioscience Expert at Vattenfall. Together with Wageningen Environmental Research, part of Wageningen University, and Wildlife Imaging Systems, a US technology solution provider, Vattenfall will be trialling a thermal camera-based system for collecting evidence of birds colliding with offshore wind turbines at its HKZ wind farm. Vattenfall is already using cameras and artificial intelligence to monitor collision risk at the Aberdeen Bay Offshore Wind Farm in Scotland. There, daylight cameras are used to record the flight movements and behaviour of seabirds around the turbines, but not collisions.

New York Plans to Launch Fifth Offshore Wind Solicitation This Summer – Offshore Wind

New York Governor Kathy Hochul has unveiled plans to launch the fifth offshore wind solicitation (NY5) this summer. In addition, Governor Hochul announced on 23 April that a USD 200 million Supportive Manufacturing and Logistics Request for Proposals (RFP) is open to support infrastructure investments in the state's domestic offshore wind supply chain. The news comes after the New York State Energy Research and Development Authority (NYSERDA) cancelled three offshore wind projects with a combined capacity of over 4 GW due to "technical and commercial complexities between provisional awardees and their partners".