



16 February 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

[Tethys Wind User Review](#)

We want your feedback! Please complete this year's short 3-minute [Tethys Wind User Review survey](#) by 15 March 2024 to help us understand how the wind-wildlife community uses Tethys and determine how we can continue to expand and improve the site!

[WREN Webinar Recording Available](#)

Working Together to Resolve Environmental Effects of Wind Energy ([WREN](#)), recently hosted a webinar on [Wind Energy and Terrestrial Mammals](#). The recording is now available on Tethys.

[WETO Request for Information](#)

The U.S. Department of Energy's (DOE) Wind Energy Technologies Office (WETO) is seeking information about research needed to support the growth of the domestic offshore wind industry, including technology advancement for bird and bat research and supply chain expansion. Responses to the [Request for Information](#) are due by 20 February 2024.

[New Funding for U.S. Colleges & Universities](#)

The U.S. DOE's Water Power Technologies Office (WPTO) and WETO have released a [\\$14.5 million funding opportunity](#) to support foundational research at U.S. institutions of higher

education to address challenges facing marine and ocean renewable energy industries and spur innovation and development. Concept papers are due 20 February 2024.

SCGSR Program Applications Open

The U.S. DOE's [Office of Science Graduate Student Research \(SCGSR\) program](#) is now accepting applications for its 2024 solicitation 1 cycle, which provides supplemental 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.

BOEM Seeking Public Comments

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

- intent to prepare a Programmatic Environmental Impact Statement (PEIS) for the offshore wind leases areas in central and northern [California](#) (due 20 February 2024);
- draft PEIS for offshore wind leases areas in the [New York Bight](#) (due 26 February);
- draft Environmental Assessment (EA) for the [Beacon Wind project](#) (due 4 March 2024);
- intent to prepare an EA for the [Oregon](#) wind energy lease areas (due 15 March 2024).

NYSERDA Request for Proposals

The New York State Energy Research and Development Authority (NYSERDA) is seeking a qualified entity to serve as the [Regional Fund Administrator for an Offshore Wind Fisheries Mitigation Fund](#) to serve states, the fishing community, and offshore wind developers working on projects in the water along the U.S. Atlantic Coast. Proposals are due 20 March 2024.

Calls for Abstracts & Papers

The Marine Technology Society Journal is seeking manuscript submissions for a special issue on [Marine Energy - An Update on Developments Globally](#) through 1 March 2024. The issue will examine a variety of topics, including technology development, resource assessment, social and economic considerations, and the development of international standards and certification.

The University Marine Energy Research Community (UMERC) and Marine Energy Technology Symposium (METS) have opened the [Call for Papers](#) for the [2024 UMERC+METS Marine Energy Research Conference](#) until 1 March 2024. The conference will take place 7-9 August 2024 in Duluth, Minnesota, U.S.

The [Call for Speakers](#) at [Clean Currents 2024](#) is now open through 1 March 2024. The tradeshow and conference will take place on 7-10 October 2024 in Portland, Oregon, U.S.

The [Call for Abstracts](#) for the [3rd Annual Conference for the Sustainable Management of UK Marine Resources \(SMMR 2024\)](#) is now open through 4 March 2024. SMMR 2024 will take place 14-16 May 2024 in Bristol, England and online.

The [Call for Abstracts](#) for the [International Conference on Ocean Energy \(ICOE 2024\)](#) is open until 5 March 2024. ICOE 2024 will take place 17-19 September 2024 in Melbourne, Australia.

RenewableUK and Scottish Renewables have opened the [Call for Papers](#) for [Floating Offshore Wind 2024](#) until 15 March 2024. The conference and exhibition will take place 9-10 October 2024 in Aberdeen, Scotland.

The [Call for Abstracts](#) for the [Asian Offshore Wind, Wave and Tidal Energy Conference \(AWTEC 2024\)](#) is now open through 20 March 2024. AWTEC will take place on 20-24 October 2024 in Busan, Korea.

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

The 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 Abstracts](#) for the [North American Wind Energy Academy \(NAWEA\) / WindTech 2024 Conference](#) will open 25 March 2024 and close 3 May 2024. NAWEA/WindTech will take place from 28 October to 2 November 2024 in New Brunswick, New Jersey, U.S.

Funding & Testing Opportunities

The European Commission's Horizon Europe Framework Programme has opened a [Call for Additional Activities for the European Partnership for a Climate Neutral, Sustainable and Productive Blue Economy](#). This call is open to companies from European Union (EU) countries and a selected number of non-EU/non-Associated countries. Applications due 28 February 2024.

The Natural Environment Research Council (NERC) and The Crown Estate have announced an upcoming funding opportunity, [Ecological effects of floating offshore wind \(ECOFLOW\)](#), for eligible UK research organizations. Applications will be due 29 February 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 \(RFTS\) 12](#) applications through 1 March 2024 to support marine energy testing and development projects. Open Water Support applications can be submitted any time.

Career Opportunities

Heriot-Watt University's International Centre for Island Technology is accepting applications for a fully funded [PhD Scholarship in improving the accessibility of offshore wind infrastructure](#) through 19 February 2024.

The European Marine Energy Centre (EMEC) is looking for two [Administration Officers](#) and a [Senior Administration Officer](#) to support business functions across EMEC. Applications are due 22 February 2024.

EMEC is also looking for a [Marine Energy Development Manager](#) to identify, develop, and secure opportunities for EMEC to grow its portfolio of wave, tidal, and floating wind projects. Applications are due 26 February 2024.

Pacific Northwest National Laboratory (PNNL) is looking for a [PhD Intern - Fish, River, and Molecular Ecology/Geochemistry](#) to evaluate the use of molecular methods for monitoring biodiversity at marine energy and hydropower sites. Applications are due 23 February 2024.

PNNL is also seeking for a [Post Masters Research Associate - System Planning](#) to support its portfolio of distributed wind energy research. Applications are due 29 February 2024.

BOEM is hiring three [Biologists](#) to serve as representatives for the Pacific Outer Continental Shelf (OCS) Region to assess relevant data and information concerning the potential environmental impacts of OCS activities. Applications are due 26 February 2024.

BOEM is also looking for a [Social Scientist](#) to serve as a subject matter expert for environmental and decision documents for offshore renewable energy. Applications are due 29 February 2024.

The National Wildlife Federation's Offshore Wind Energy Program is seeking a [Program Coordinator](#), [Gulf of Mexico Campaign Manager](#), [Wildlife Policy Specialist](#), and [West Coast Senior Campaign Manager](#) to advance the responsible development of offshore wind.

Epsilon Associates is hiring a [Project/Senior Scientist - Offshore Wind/Renewable Energy](#) and [Senior Program Manager - Offshore Wind & Ecological Sciences](#) to support our offshore wind and other renewable energy practice areas.

Upcoming Events

Upcoming Town Hall

As part of the [2024 Ocean Sciences Meeting](#) in New Orleans, Louisiana, U.S., a Town Hall, “[An Evolving New Blue Economy: Exploring the Future for Marine Renewable Energy](#)”, will take place on 21 February 2024 from 12:45-1:45pm CST. The Town Hall will look ahead to how our ocean-scape is changing thru the lens of marine renewable technologies and explore innovative solutions that these technologies offer to support the growing Blue Economy.

Upcoming Webinars

WINDEXchange and the National Renewable Energy Laboratory are hosting a webinar, “[Benefits and Burdens: Exploring the Role of Community Benefits in Wind Energy Development](#)”, on 28 February 2024 from 1:00-2:00pm MST (8:00-9:00pm UTC). Register [here](#).

The International Energy Agency Wind Task 34 is hosting a webinar, “[Culture and competition for driving digitalisation](#)”, on 29 February 2024 at 4:00pm CET (3:00pm UTC) that will feature three examples of culture and competition, followed by a Q&A session. Register [here](#).

The Regional Wildlife Science Collaborative for Offshore Wind (RWSC) is hosting a [Stochastic Collision Risk Assessment for Movement \(SCRAM\) Tool Webinar](#) on 4 March 2024 from 2:00-3:00pm EST (7:00-8:00pm UTC). The webinar will provide an overview of SCRAM, which uses movement data from automated radio telemetry to estimate avian collision risk. Register [here](#).

ETIP Ocean, the European Technology & Innovation Platform for Ocean Energy, is hosting a webinar, “[Off-grid applications of ocean energy](#)”, on 5 March 2024 at 2:00pm UTC. The webinar will feature examples of ocean energy projects focusing on desalination, subsea infrastructure and remote communities. Register [here](#).

Marine Renewables Canada is hosting an Ask an Expert webinar, “[The Future of Offshore Wind Regulation in Canada & Insights from Global Best Practices](#)”, on 6 March 2024 from 1:00-2:00pm AST (UTC). Register [here](#).

Upcoming Workshops

PNNL and the North Carolina Coastal Studies Institute are hosting two identical workshops on environmental effects of marine energy on [25 March 2024 from 1:00-5:00 pm EDT](#) at the Coastal Studies Institute in Wanchese, North Carolina, U.S., and on [27 March 2024 from 1:00-5:00 pm EDT](#) at the Duke University Marine Laboratory in Beaufort, North Carolina. Please register for the workshop most suitable to your location and schedule.

TEAMER is hosting a [2024 Wave Energy Converter \(WEC\) Modeling and Controls Workshop](#) on 13-17 May 2024 at Oregon State University in Corvallis, Oregon, U.S. to provide an immersive learning experience focused on wave resource assessments, numerical WEC-Sim modelling, experimental wave laboratory test campaigns, and application of control theory. Attendance is limited to 50 participants; applications to attend are due by 6 March 2024.

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

[Improving Understanding of Environmental Effects from Single MRE Devices to Arrays](#) – Hasselman et al. 2024

A long-established framework for assessing the effects of marine renewable energy (MRE) development focuses on understanding ‘stressor-receptor interactions’. Our understanding of effects for these stressors continues to improve for single MRE devices,

but remaining uncertainties complicate the task of predicting how marine ecosystems and their constituents will be impacted by arrays. This paper establishes generalized concepts for seven key stressors so that a robust scientific approach can be taken to improve our understanding of effects for arrays; information that is needed to facilitate the deployment of MRE technologies at scales that can make meaningful contributions in addressing the effects of climate change, assisting energy system transition, and ensuring energy security.

Predicting the probability of encounter between fish species and tidal stream energy devices using acoustic telemetry – Bangley et al. 2024

Understanding the environmental effects of marine renewable energy devices is important for ensuring the responsible development of this new industry and is particularly relevant in ecologically sensitive regions. Minas Passage, Bay of Fundy, Canada, is a highly sought-after location for the development of tidal stream energy and is characterized by the world's highest tides (15-m range) and tidal flow speeds exceeding 5 m/s. Here, we review the methods developed by Bangley et al. and expand on this previous effort by incorporating data on tag detection efficiency to account for these environmental effects. This allows us to make conservative and realistic predictions of striped bass presence probability even in conditions where tag detectability is reduced.

Assessing Social and Economic Effects of Marine Energy: Tools and Recommendations – Freeman et al. 2024

Collecting social and economic data is necessary to anticipate these effects, and to develop and appropriately site marine energy projects that suitably address community needs, incorporate and address community values, and satisfy consenting requirements. Despite the importance of this information, consistent methodology for social and economic data collection to inform marine energy development is lacking. There is little documentation from past projects, and if documentation exists, it is not often clear how the social and economic data have been collected or analyzed. We review the literature from marine energy, other renewable energy industries, and relevant coastal sectors to identify common metrics, methods, and applicable tools for collecting data on social and economic effects.

Wind Energy

Environmental Impacts of Offshore Wind Farms in the Belgian Part of the North Sea: Progressive Insights in Changing Species Distribution Patterns Informing Marine Management – Degraer et al. 2024

Most environmental monitoring programmes for offshore wind farms are halted five years after installation. However, research has shown that this period is way too short and consequently these programmes do not provide the insight needed to manage offshore wind farms in an evidence-based manner. With the Belgian offshore wind farm environmental impact monitoring and research programme, WinMon.BE, we show that

fifteen years after the first installation of offshore wind turbines in the Belgian part of the North Sea, progressive wind farm induced changes in the marine ecosystem are still observed, underlining the importance of long-term research for a sound offshore wind farm management.

[Forest bat activity declines with increasing wind speed in proximity of operating wind turbines](#) – Ellerbrok et al. 2024

The increasing use of onshore wind energy is leading to an increased deployment of wind turbines in structurally rich habitats such as forests. Forest-affiliated bats, in turn, are at risk of colliding with the rotor blades. Due to the legal protection of bats in Europe, it is imperative to restrict the operation of wind turbines to periods of low bat activity to avoid collisions. However, bats have also been observed to avoid wind turbines over several hundred meters distance, indicating a displacement that cannot solely be explained by modifications to the habitat. This avoidance suggests a displacement of bats by indirect factors related to wind turbine operation, e.g., wake turbulences and noise emissions. Therefore, we investigated whether the activity of forest-affiliated bats is influenced by operation mode (on/off) under variable wind conditions along transects from 80 to 450 m distance to wind turbines.

[A synthesis of socioeconomic and sociocultural indicators for assessing the impacts of offshore renewable energy on fishery participants and fishing communities](#) – Willis-Norton et al. 2024

Offshore renewable energy, particularly wind farms, is rapidly expanding globally and has become an essential component of many coastal nations' decarbonization plans, including the United States. The addition of these physical structures to the marine space may impact fish production and may preclude fishers from traditional fishing grounds - both of which have the potential to affect fisheries outcomes. Understanding the socioeconomic and sociocultural impacts of implementing offshore wind is crucial to determining appropriate mitigation strategies and to developing data collection, monitoring, and adaptive management strategies. This review synthesizes quantitative and qualitative indicators that have been used to assess the impact of fisheries preclusion and shifts in fished species' biomass on fishery participants.

News & Press Releases

Marine Energy

[Biden-Harris Administration Invests Nearly \\$16 Million to Advance Marine Energy in the U.S.](#) – U.S. DOE

In support of the President's Investing in America agenda, the U.S. DOE recently announced two innovative marine energy projects will receive a combined \$6 million to

develop a tidal energy research, development, and demonstration pilot site in the United States. In addition, a community-led river current energy research and development project was selected to receive \$9.5 million. This funding, supported by the Bipartisan Infrastructure Law, encourages U.S. leadership in tidal and current energy development, supporting the Biden-Harris Administration's goals to help communities meet their energy priorities and develop the marine energy sector's supply chain and workforce.

Minesto reaches historic milestone – first electricity to grid with tidal powerplant Dragon 12 (1.2 MW) – Minesto

Minesto, leading ocean energy developer, recently announced that a key milestone has been reached: The utility-scale tidal powerplant Dragon 12 – rated at 1.2 MW – has been successfully commissioned and, in the early morning of February 9, delivered its first electricity to the national grid in the Faroe Islands. The Dragon 12 is Minesto's first tidal energy kite in megawatt-scale. It has now been successfully commissioned and has generated electricity at satisfactory levels in its first phase of operation. The 12-meter wide and 28-ton heavy subsea kite, anchored with a tether to the seabed, is steered in an 8-shaped flight trajectory powered by the tidal flow. Dragon 12 is a 10-times scale-up (from the existing 100 kW Dragon 4) that delivers competitive performance and cost-levels for build-out of large-scale commercial subsea parks of tidal powerplants.

Wavepiston installs first energy collector on its wave energy system off Canary Islands – Offshore Energy

Danish company Wavepiston has installed its first full-scale energy collector on its wave energy system offshore the Canary Islands. Wavepiston reported that it had on February 8 installed its first full-scale energy collector on the Wavepiston string at the Oceanic Platform of the Canary Islands (PLOCAN) in Gran Canaria. According to the Danish company, the installation is of big importance as it allows the demonstration of the potential of Wavepiston technology to stakeholders. Wavepiston's wave energy system consists of energy collectors placed in the ocean which produce pressurized seawater which is transported to the shore where power generation and reverse osmosis units for desalination are located. The energy collectors are designed by Wavepiston and manufactured by Thune Eureka.

Consortium including Eco Wave Power, Toshiba, Hitachi Energy, and UK Universities Secure £1.5 Million Grant to Develop Wave-Powered Microgrid for Island in Thailand – Eco Wave Power

Eco Wave Power, a leading, publicly traded onshore wave energy company, recently announced that it has won a £1.5 million grant as part of a consortium led by Toshiba (U.K.) and Aquatera (U.K.) to design a pilot microgrid project for a remote island in Thailand. The £1.5 million grant is part of Innovate UK's Energy Catalyst program Round 10, which supports U.K. and international businesses and organizations in developing market-focused technologies that provide clean, affordable and accessible energy. The consortium will utilize the onshore Wave Energy Converters (WECs)

developed by EWP and implement advanced technology developed by the corporate partners and the university teams.

[Mercator Ocean International and Ocean Energy Europe collaborate on Copernicus Marine Service – Ocean Energy Europe](#)

The collaboration between Mercator Ocean International and Ocean Energy Europe continues, aimed at fostering the use of Copernicus Marine Service data in the ocean energy sector. This initiative builds upon their successful partnership established in 2018, which saw a remarkable 30% surge in users from the ocean energy sector within the first year. Copernicus, Europe's flagship earth observation program, delivers free data on global and regional ocean and sea conditions through its Marine Service. This service provides essential data from satellites, in-situ sensors and numerical models on variables such as ocean temperature, salinity, currents, and sea levels – vital for decision-making in the ocean energy domain.

Wind Energy

[DOE, Partners Kick Off Groundbreaking Initiative to Improve Accurate Forecasting and Ensure Sustainability of U.S. Offshore Wind Farms – U.S. DOE](#)

The U.S. DOE and the National Oceanic and Atmospheric Administration (NOAA) recently launched an 18-month initiative to gather extensive weather, ocean, and wildlife data near the sites of active offshore wind farms and lease areas off the coast of the Northeast United States. This effort, which is part of the third phase of the Wind Forecast Improvement Project (WFIP3), seeks to gather high-quality data to improve the design and operation of offshore wind turbines and wind farms. The collected data will be publicly available and used to inform responsible offshore wind siting, weather forecasting, and grid integration, as well as support advancements in weather and wind plant modeling. WFIP3 is funded by DOE and NOAA and led by PNNL and Woods Hole Oceanographic Institution, with over 15 partners.

[Ecowende teams up with Robin Radar, MIDO and DHI to implement most advanced framework for monitoring birds and bats at offshore wind farms to date – Ecowende](#)

Robin Radar Systems, MIDO and DHI, three companies on the forefront of detection systems for and data collection on various birds and bats, are joining forces with Ecowende. Their technologies, which include Robin Radar's MAX® bird and bat radar systems, DHI's sensor integration and artificial intelligence (AI) species recognition solution MUSE, and MIDO's power-generating floating platform FLORA 1 will be deployed in Ecowende's future offshore wind farm. By combining these technologies, Ecowende will implement the most advanced framework for monitoring of flying birds and bats at offshore wind farms to date. This will help in assessing the impact of the wind farm on ecology and the effectiveness of Ecowende's ecological innovations.

U.S. Department of Energy Establishing National Center of Excellence to Accelerate Domestic Offshore Wind Industry – U.S. DOE

The U.S. DOE recently announced it is investing \$4.75 million to establish a new national center of excellence to accelerate reliable and equitable offshore wind energy deployment across the nation. The Academic Center for Reliability and Resilience of Offshore Wind (ARROW), led by the University of Massachusetts Amherst with approximately 40 partners, will focus on workforce development, targeted research, and partnerships and strategies to embed equity in offshore wind development. This academic and training hub, which includes partners across the United States, will help drive progress toward the Biden-Harris Administration's goals of deploying 30 gigawatts of offshore wind by 2030, 100% clean electricity grid by 2035, and net zero emissions economy-wide by 2050.

15 years of monitoring the ecological effects of Belgian offshore wind farms still yields new insights – MUMM (Management Unit of the North Sea Mathematical Models)

Fifteen years into the programme, monitoring of the ecological effects of Belgian offshore wind farms continues to provide new insights. That is an important conclusion of the latest [WinMon.BE report](#) that summarizes the findings on bottom-dwelling invertebrates, fish, harbour porpoises and birds. Only through sustained and adaptive monitoring can we ensure that we design and build offshore wind farms in the most eco-friendly way. The impacts on the marine ecosystem, both positive and negative, have been investigated through the WinMon.BE monitoring and research programme from the very start of the construction of the first wind farm in 2008. The scientific insights obtained have always informed the management and development of the first Belgian offshore wind farm zone.

DOE and Innovation Fund Denmark Announce Upcoming \$4 Million Opportunity to Advance Floating Offshore Wind – U.S. DOE

The U.S. DOE WETO and Innovation Fund Denmark recently announced an intent to release a \$4.2 million opportunity to advance floating offshore wind energy systems toward cost-effective commercialization and wide-scale deployment. This announcement builds on a Memorandum of Understanding between DOE, the Denmark Ministry of Higher Education and Science, the Denmark Ministry of Climate, Energy and Utilities, and Innovation Fund Denmark signed in 2021. This proposed funding opportunity supports these goals by focusing on research to improve mooring technologies and methods, which are used to secure floating platforms to the sea floor. This is a joint funding opportunity between the United States and Denmark to advance the global floating offshore wind industry by encouraging bilateral collaboration. This opportunity is expected to be released this spring.