



1 March 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!

[SCGSR Applications Open](#)

The U.S. Department of Energy's (DOE) [Office of Science Graduate Student Research \(SCGSR\) program](#) is now 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.

[BOEM Seeking Public Comments](#)

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

- Draft Environmental Assessment (EA) for the [Beacon Wind project](#) (due 4 March 2024);
- Its Draft Programmatic Environmental Impact Statement for potential development of six wind lease areas in the [New York Bight](#) (extended – now due 13 March 2024);
- Intent to prepare an EA for the [Oregon](#) wind energy lease areas (due 15 March 2024).

Calls for Abstracts & Papers

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 University Marine Energy Research Community (UMERC) and Marine Energy Technology Symposium (METS) have extended the [Call for Papers](#) deadline for the [2024 UMERC+METS Marine Energy Research Conference](#) until 8 March 2024. The conference will take place 7-9 August 2024 in Duluth, Minnesota, U.S.

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 [Call for Abstracts](#) for the [International Conference on Ocean Energy \(ICOE 2024\)](#) has been extended through 28 March 2024. ICOE 2024 will take place 17-19 September 2024 in Melbourne, Australia.

The University of Southampton is now accepting abstracts for the [11th Partnership for Research in Marine Renewable Energy \(PRIMaRE\) Conference](#) until 29 March 2024. The PRIMaRE Conference will take place 27-28 June 2024 in Southampton, England.

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 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.

The Sustainable Energy Authority of Ireland has opened a competition for the [Provision of Data as a Service using a Floating Lidar System at the Atlantic Marine Energy Test Site \(AMETS\) in Ireland](#). Tenders are due 11 March 2024.

The UK Research and Innovation (UKRI) recently announced the [Ayrton Fund](#), which is a UK government commitment of up to £1 billion that aims to accelerate the clean energy transition in developing countries, by creating and demonstrating innovative clean energy technologies and business models. Applications close on 9 April 2024.

The U.S. DOE recently 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. An [informational webinar](#) will take place on 14 March 2024. Applications are due 30 May 2024.

Career Opportunities

The University of Western Australia is offering [multiple fully-funded PhD scholarships](#) for domestic and international students in a variety of ocean related fields including hydrodynamics, marine ecology, and offshore renewable energy. Applications are due 8 March 2024.

Oceantic Network (formerly the Business Network for Offshore Wind) is accepting applications for its paid [2024 Summer Internship Program](#), which offers roles in Communications, Education & Training, Policy, and Supply Chain & Research. Applications are due 10 March 2024.

The University of Hull is looking for a [Postdoctoral Researcher in Fibre Optic Sensors for Offshore Renewable Energy Structures](#), including wind and tidal turbine blades, dynamic power cables, and flexible/membrane-based wave energy devices. Applications are due 12 March 2024.

The University of Strathclyde Glasgow is offering a postgraduate research opportunity in [Hybrid Ocean Renewables in a Changing Climate](#). The project includes research activities such as feasibility analysis and stakeholder engagement. Applications are due 15 March 2024.

The University of Manchester is seeking a [Research Associate](#) to develop and apply computational fluid dynamics (CFD) models to the analysis of offshore wind and tidal turbine farms and farm-scale wakes, subject to turbulent atmospheric and marine flows. Applications are due 27 March 2024.

The University of Southampton is offering a fully funded [PhD research project](#) (UK only) focused on developing new concepts for the anchoring design of floating renewable facilities and harnessing beneficial ‘whole-life’ responses of the seabed. Applications are due 1 April 2024.

Lindahl Reed is hiring a Marine Energy National Marine Energy Center [Support Specialist](#) and [Program Scientist](#) to support the U.S. DOE’s Water Power Technologies Office (WPTO) by coordinating university research and development, including project management.

Upcoming Events

Upcoming Webinars

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 5 March 2024 from 1:00-2:00pm AST (5:00-6:00pm UTC) that will focus on the policies and laws that guide the development, deployment, and management of offshore wind farms. Register [here](#).

The Supergen Offshore Renewable Energy Hub is hosting a webinar, “[The impacts of wind energy extraction on the physics and primary production in Scottish shelf waters](#)”, on 11 March 2024 from 1:00-2:00pm UTC. The webinar will feature updates from the Physics-to-Ecosystem Level Assessment of Impacts of Offshore Windfarms ([PELAGIO](#)) project. Register [here](#).

Pacific Northwest National Laboratory (PNNL) and National Renewable Energy Laboratory (NREL) are hosting a [Distributed Wind Network Webinar](#) on 14 March 2024 from 10:00-11:00am PST (6:00-7:00pm UTC). A trusted source for information, the U.S. DOE’s new Network will offer support for distributed wind installation efforts nationwide through events and best-in-class resources published on the new [Distributed Wind Resource Hub](#). 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.

The Dutch Marine Energy Centre (DMEC) is hosting an in-person [Deep Dive on Environmental Implications of Offshore Green Hydrogen Production](#) on 2 April 2024 from 5:30-7:00pm CEST (4:30-6:00pm UTC) in The Hague, Netherlands. Register [here](#).

The Supergen Offshore Renewable Energy Hub is also hosting a [Masterclass on Advanced Experimental Fluid Mechanics for Offshore Renewable Energy](#) on 22 April 2024 at the University of Plymouth in England. Participants will be introduced to the world-leading facilities

at the Coast Laboratory and the new UK Floating Offshore Wind Turbine Test Facility, Babbage wind tunnel, and Hexapod. Register [here](#).

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.

Upcoming Conferences

Marine Energy Wales is hosting the [Marine Energy Wales Annual Conference \(MEW 2024\)](#) in Swansea, Wales.

The [7th Environmental Interactions of Marine Renewables Conference \(EIMR 2024\)](#) will take place 15-19 April 2024 in Kirkwall, Orkney, Scotland. Registration is now open [here](#).

New Documents on Tethys

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

Marine Energy

[IEA-OES Annual Report: An Overview of Ocean Energy Activities in 2023](#) – IEA-OES 2024

International Energy Agency's Ocean Energy Systems (IEA-OES) Technology Programme has released its annual report for 2023, showcasing the ocean energy sector's strides towards innovation and sustainability. The report highlights the publication of a strategic roadmap aiming for 300 GW of ocean energy by 2050, advancements in the Stage-Gate Metrics Framework incorporating environmental considerations, and the ongoing study on the exploration of ocean energy in desalination processes. It also covers collaborative efforts on environmental impacts, alongside advancements in wave and tidal energy modeling and OTEC Economics. The collaborative initiatives emphasize IEA-OES's commitment to fostering global ocean energy development, addressing both technological and environmental challenges.

[Task Force on Sustainable Tidal Energy Development in the Bay of Fundy: Final Report](#) – Fisheries and Oceans Canada 2024

On June 20, 2023, the Honourable Joyce Murray, then Minister of Fisheries, Oceans, and the Canadian Coast Guard and the Honourable Jonathan Wilkinson, Canada's Minister of Natural Resources, announced the establishment of a Task Force to explore issues and opportunities associated with the deployment of tidal energy projects in the Bay of

Fundy, specifically to: build on work to date to clarify requirements for fish protection; improve transparency and methodology of risk assessment and decision making for tidal stream energy device deployments; reduce turnaround time for regulatory decisions for tidal energy projects in the Bay of Fundy. The Task Force released an Interim Report in September 2023 and committed to releasing a final report that would identify progress achieved and areas considered for future action. This report summarizes progress made and identifies next steps.

Potential environmental effects of marine renewable energy in tropical and subtropical ecosystems – Garavelli et al. 2024

Marine renewable energy (MRE) is under development in many parts of the world. Although the MRE industry is advancing, several challenges have slowed its growth such as uncertainties associated with environmental effects. So far, studies examining the environmental effects of MRE have primarily focused on deployments in temperate regions and countries in the Northern Hemisphere. As MRE development expands into tropical and subtropical countries, there is a need to examine the potential environmental effects specific to these regions and their unique habitats and species. To better understand the environmental effects of MRE in tropical and subtropical ecosystems and aid in developing MRE projects in a responsible manner, the international initiative Ocean Energy Systems (OES)- Environmental has begun to compile scientific information.

Wind Energy

Do electromagnetic fields from subsea power cables effect benthic elasmobranch behaviour? A risk-based approach for the Dutch Continental Shelf – Hermans et al. 2024

Subsea power cables cause electromagnetic fields (EMFs) into the marine environment. Elasmobranchs (rays, skates, sharks) are particularly sensitive to EMFs as they use electromagnetic-receptive sensory systems for orientation, navigation, and locating conspecifics or buried prey. Cables may intersect with egg laying sites, mating, pupping, and nursery grounds, foraging habitat and migration routes of elasmobranchs and the effects of encountering EMFs on species of elasmobranchs are largely unknown. Demonstrated behavioural effects are attraction, disturbance and indifference, depending on EMF characteristics, exposed life stage, exposure level and duration. We estimated exposure levels of elasmobranchs to subsea power cable EMFs, based on modelled magnetic fields in the Dutch Continental Shelf and compared these to reported elasmobranch sensory sensitivity ranges and experimental effect levels.

A standardized protocol for assessing the performance of automatic detection systems used in onshore wind power plants to reduce avian mortality – Ballester et al. 2024

While wind power plants are an important contribution to the production of renewable energy to limit climate change, collision mortality from turbines is a danger for birds, including many protected species. To try to mitigate collision risks, automatic detection

systems (ADSs) can be deployed on wind power plants; these work by detecting incoming birds using a detection/classification process and triggering a specific reaction (scaring off the bird or shutting down the turbine). Nonetheless, bird fatalities still occur at ADS-equipped wind power plants, which raises the question of the performance of these tools. To date, the lack of a transparent, peer-reviewed experimental process to compare the performance of types of ADS has meant there is no robust protocol to assess these systems. With the aim of filling this gap, we developed two standardized protocols that provide objective and unbiased assessments of the performance of different types of ADS, based on their probability of detecting/classifying birds at risk of collision.

[A Numerical Modeling Framework to Evaluate Effects of Offshore Wind Farms on California's Coastal Upwelling Ecosystem](#) – Raghukumar et al. 2024

In California's offshore waters, sustained northwesterly winds are a key energy resource that could contribute substantially to the state's mandated renewable energy goals. However, the development of large-scale offshore windfarms could potentially reduce wind stress at the sea surface, which could then in turn affect wind-driven upwelling, which affects nutrient delivery and ecosystem dynamics. By linking atmospheric and ocean circulation models with simulated wind turbine installation scenarios spread across California wind energy areas of interest, this research concluded that turbines could reduce wind speed downwind of wind farms. This reduction of wind speed would enhance cross-shore changes in wind speeds, leading to reduced upwelling on the inshore side of wind farms and increased upwelling on the offshore side.

News & Press Releases

Marine Energy

[CorPower Ocean announces wave energy breakthrough.](#) – CorPower Ocean

Now proven at commercial scale, at the exposed Atlantic test site, CorPower Ocean's C4 device has demonstrated unique ability to tune and detune according to varying sea states, limiting response to extreme storm waves (up to 18.5m) while amplifying motion and power capture in regular waves using novel phase control technology. The progression marks a crucial milestone for wave energy addressing the two major obstacles which have hampered commercial adoption to date – survivability and efficient power generation in normal ocean conditions. The inflection point provides a firm signal of wave energy's readiness for widescale adoption. Since deployment in August 2023, all key aspects of the C4 system functions have now been successfully verified, including power export to grid, automated control and monitoring of the system as well as safe Operations and Maintenance (O&M) methods.

[Harvesting Earth Observation data for offshore renewables: BLUE-X project kicked off to speed up the energy transition.](#) – Dutch Marine Energy Centre

Seven European partners, including offshore renewable energy and Earth Observation specialists, have teamed up for the BLUE-X project. Together, they will develop a satellite-based decision support tool to accelerate offshore renewable energy deployments. This is the first blue energy Horizon Europe project funded by the EU Agency for the Space Programme (EUSPA). For upscaling offshore renewables, BLUE-X will provide key data useful for all five steps of the blue energy lifecycle: site assessment, planning, construction, operations, and decommissioning. Six use cases across Europe will ensure a BLUE-X solution in line with the user demands of offshore renewable energy developers and providers. These cases will cover various blue offshore energy sources.

U.S. Department of Energy Announces Water Power Photo and Video Contest Winners – U.S. DOE

The U.S. DOE's WPTO recently announced the 22 winners of the Make a Splash Photo and Video Contest. Photographers and videographers, including professionals and amateurs, submitted awe-inspiring content that showcased water power technologies across hydropower and marine energy, research and development activities, infrastructure, and the people behind the sector. The winners were selected from a pool of more than 360 submissions from 52 competitors. The winners are featured on the [DOE Flickr account](#), and other eligible submissions will be posted soon. These photos and videos are available to the public and also may be used in DOE outreach materials.

Minesto evolves its Faroese business case, upgrading to a 200 MW tidal energy buildout – Minesto

Minesto, leading ocean energy developer, has upgraded the roadmap to a 200 MW tidal energy buildout in the Faroe Islands. The scaled-up roadmap is a response to the growing demands for renewable energy, where unlocking the tidal opportunity enables transition to a 100% renewable energy system. The recently reached milestone of megawatt-scale electricity generation with Dragon 12 to the grid shifts focus to commercial array buildout. The Faroe Islands has one of the world's most ambitious energy transition schemes, aiming for 100% renewables by 2030. Minesto's suggested roadmap includes tidal energy buildout in seven site locations in Faroe Island waters, reaching a total of 200 MW equivalent to about 40% of future energy demand.

Ocean Power Technologies Receives Funding for AT&T 5G-Enabled PowerBuoy® Deployment in Monterey Bay – Ocean Power Technologies

Ocean Power Technologies (OPT), a leader in innovative and cost-effective low-carbon marine power, data, and service solutions, recently announced that it has received funding from the Naval Postgraduate School in Monterey, California, for the year-long deployment of a PowerBuoy® in Monterey Bay. The PowerBuoy®, integrating OPT's Maritime Domain Awareness System (MDAS) along with cutting-edge Satellite communication and AT&T 5G technology, will demonstrate its persistent surveillance and communications capacities in a maritime environment. This deployment marks a

significant milestone in maritime technology, showcasing the potential of standalone at-sea infrastructure nodes to support the Joint Force's diverse operational needs.

Wind Energy

Governor Hochul Announces Two Offshore Wind Project Awards, to Deliver Clean Power in 2026 – New York State Governor's Office

Governor Kathy Hochul recently announced the State has conditionally awarded two offshore wind projects from its fourth offshore wind solicitation – a planned 810-megawatt project, Empire Wind 1, (developed by Equinor) and Sunrise Wind, a planned 924-megawatt project (developed by Orsted and Eversource). The competitively selected projects will create more than 800 near-term family-sustaining construction jobs and invest \$2 billion in near-term enhanced economic development statewide, including developer-committed investments to support disadvantaged communities. The projects, totaling over 1,700 megawatts of clean energy, will be the largest power generation projects in New York State in over 35 years once they enter operation in 2026, and will continue progress towards achievement of the State's Climate Act goal to develop 9,000 megawatts of offshore wind energy by 2035.

EOLINK Sets Sail: Manufacturing Begins in Brest for Largest Floating Wind Turbine on French Atlantic Coast – Bretagne Ocean Power

The first components of the floating wind turbine developed by renewable energy company EOLINK as part of the France-Atlantique Project arrived at the port of Brest earlier this week on the 20th February. The project will deliver the largest operational floating wind turbine on the French Atlantic coast to meet the energy needs for 6,500 people. The arrival of the inaugural components signals the beginning of assembly of the steel float and superstructures of EOLINK's innovative wind turbine on the Marine Renewable Energies polder under the stewardship of BrestPort. Following assembly in the port of Brest, the wind turbine will embark on its journey to the test site off the coast of Le Croisic. With the anchors already installed in July 2023, the commissioning of the unit is scheduled for spring 2025.

BOEM Completes Environmental Analysis for Proposed Wind Project Offshore Massachusetts, Rhode Island, and New York – BOEM

In support of the Biden-Harris administration's goal of deploying 30 gigawatts of offshore wind energy capacity by 2030, BOEM has completed its environmental review of the proposed New England Wind project offshore Massachusetts. BOEM estimates the proposed project would generate up to 2,600 megawatts (MW) of electricity, enough to power more than 900,000 homes with clean, renewable energy. The New England Wind project is located about 20 nautical miles (nm) south of Martha's Vineyard, MA, and about 24 nm southwest of Nantucket, Mass. Park City Wind, LLC submitted a two-phased project plan that includes up to 129 wind turbine generators (WTGs), with up to

five offshore export cables that would transmit electricity to onshore transmission systems in the Town of Barnstable and Bristol County, Mass.

The Crown Estate Opens 4.5 GW Celtic Sea Floating Wind Seabed Leasing Round – Offshore Wind

The Crown Estate has published a concession notice confirming the launch of the Round 5 seabed leasing process for floating offshore wind projects in the Celtic Sea, under which leases for up to 4.5 GW of generation capacity will be awarded. Issued on 28 February, the notice directs potential bidders to fill out a pre-qualification questionnaire, which is the first of the tender's three stages. After the pre-qualification questionnaire stage is completed, a Stage 1 invitation to tender will be issued, followed by an invitation to tender Stage 2. The Crown Estate published proposals for floating wind seabed leasing in the Celtic Sea in November 2021, saying the leasing could unlock up to 4 GW of new floating wind capacity in England and Wales. Since then, the UK's seabed manager has been releasing details about the tender while working towards the launch of the procurement.

How to recycle the giant magnets inside wind turbines? These scientists have a few ideas. – Grist

Every year, hundreds to thousands of megawatts' worth of wind turbines across the United States get a facelift. These aging turbines have their rotors swapped out, their blades replaced, and key components like the generator upgraded in order to enhance the machines' ability to produce electricity from wind ("repowering"). Included among the components that sometimes get replaced are magnets made with rare-earth elements like neodymium and dysprosium, which also play essential roles inside smartphones, laptops, and electric car motors. The wide range of applications for rare-earth minerals translates into a lot of potential ways to repurpose the ingredients from spent wind turbine magnets. But today, most of these magnets wind up in landfills. The U.S. government, fearing a future rare-earth supply crunch that could hold back the energy transition, wants to change that. In January, DOE announced 20 winners of the first phase of its \$5.1 million "Wind Turbine Materials Recycling Prize."