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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

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[Enabling Cost-Effective Environmental Monitoring of Offshore Wind Installations with Automated Marine Robotics](#) by Richard Camilli (Woods Hole Oceanographic Institution)

Woods Hole Oceanographic Institution recently launched the “Cost-Effective Monitoring of Offshore Wind Installations with Automated Marine Robotics” project to develop autonomous vehicles that can monitor coastal marine habitats and species in and around future offshore wind energy farms. [Learn more in the latest Tethys Story here.](#)

[SULI & CCI Applications Open](#)

The U.S Department of Energy (DOE) Office of Science is accepting applications for the [Science Undergraduate Laboratory Internships \(SULI\)](#) program and the [Community College Internships \(CCI\)](#) program for the Fall 2024 term. Undergraduates and recent graduates will gain hands on experience at the DOE national laboratories. Applications are due 22 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:

- Proposed offshore wind energy auction in the [Gulf of Mexico](#) (due 20 May 2024)
- Draft Environmental Assessment for wind leases off [Oregon](#) (due 31 May 2024)
- Proposal for a first offshore wind auction in the [Gulf of Maine](#) (due 1 July 2024)

Calls for Abstracts

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 closing on 10 May 2024. The conference will take place on 23-26 September 2024 in Halifax, Nova Scotia, Canada.

The [Call for Abstracts](#) for the [American Floating Offshore Wind Technical Summit \(AFloat 2024\)](#) through 15 May 2024. AFloat will take place on 24-25 September 2024 in Portland, Maine, U.S.

The [Call for Workshop Proposals](#) and [Call for Symposium Proposals](#) are now open for the [52nd Annual North American Symposium for Bat Research \(NASBR 2024\)](#) through 15 May 2024. NASBR 2024 will take place on 20-23 October 2024 in Guadalajara, Mexico.

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 Renewable Energy Wildlife Institute has opened the [Call for Abstracts](#) for [15th Wind Wildlife Research Meeting \(WWRM 2024\)](#) through 3 June 2024. WWRM will take place on 12-15 November 2024 in Corpus Christi, Texas, 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 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.

Horizon Europe recently opened a Call for Proposals, “[Our Blue Future – Co-designing a future vision of a restored ocean and water system in the EU by 2030 and 2050](#),” to support the co-creation of narratives and innovative visualization tools. Proposals are due 18 September 2024.

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

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.

The European Marine Energy Centre (EMEC) is looking for a [Project Officer](#), a graduate [Commercial Officer](#), and a graduate [Environment and Consents Officer](#) to support its portfolio of projects, including marine renewable energy projects. Applications are due 17 May 2024.

The U.S. BOEM is seeking a [Marine Biologist](#) to prepare and review programmatic and project-specific environmental impact analyses for proposed offshore renewable energy activities and facilities. Applications are due 17 May 2024.

The Engineering and Physical Sciences Research Council’s Centre for Doctoral Training in Net Zero Maritime Energy Solutions, with support from the University of Liverpool and others, is offering a [funded PhD position](#) focused on process-based model tools for prediction of scour around offshore structural foundations. Applications are due 20 May 2024.

The University of Southampton is offering a [PhD Studentship: Tackling the Geotechnical Challenges of Floating Offshore Wind](#) to join the UK-funded Offshore Renewable Energy Supergen Hub project. Applications are due 31 August 2024.

Aquatera is hiring a [Senior Consultant/Project Manager](#) to help deliver Aquatera’s remit as a partner in the Island Centre for Net Zero project (ICNZ), as well as working on other decarbonisation projects in Aquatera’s portfolio with connection to ICNZ.

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 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.

The Discovery of Sound in the Sea (DOSITS) team is hosting a four-part webinar series on underwater sound. The next webinar, “[United Nations Ocean Decade: International Partnerships and Opportunities](#)”, will take place on 15 May 2024 from 4:00-5:00pm UTC.

The New York State Energy Research and Development Authority (NYSERDA) is hosting its next [Learning from the Experts webinar](#), “U.S and European Research to Transform Our Energy Systems”, on 16 May 2024 from 11:00am-12:00pm EDT (3:00-4:00pm UTC). The webinar will feature experts speaking on key offshore wind topics, including wind farm technologies, development practices, regulatory processes, and research initiatives.

The Blue Economy Cooperative Research Centre is hosting a webinar, “[Blue Innovations](#)”, on 17 May 2024 from 3:00-4:00pm AEST (5:00-6:00am UTC). This presentation will explore floating projects that address solutions for marine protection, provide renewable energy, and ensure food security.

The Renewable Energy Wildlife Institute and National Renewable Energy Laboratory are hosting a virtual [Wind Energy & Wildlife Training](#) on 22-23 & 29-30 May 2024. The training will address science and policies related to wind energy and wildlife, with a focus on Colorado, New Mexico, Texas, Utah, and Wyoming.

NYSERDA is also hosting a [Learning from the Experts webinar](#) on “Innovations and Emerging Technologies in Offshore Wind”, on 29 May 2024 from 1:00pm-2:00pm EDT (5:00-6:00pm UTC). During the webinar, the National Offshore Wind Research and Development Consortium (NOWRDC) will present new and emerging advancements within the offshore wind industry related to technology, transmission, environmental mitigation, and site characterization.

Upcoming Workshops

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.

Upcoming Conferences

The Pacific Ocean Energy Trust is hosting the [Ocean Renewable Energy Conference \(OREC 2024\)](#) on 20-23 May 2024 in Portland, Oregon, U.S. This year, OREC will feature the Marine Energy Collegiate Competition (MECC) finals. [View the full OREC+MECC agenda here.](#)

The INSITE Norse Sea Programme and Marine Alliance for Science and Technology for Scotland (MASTS) are hosting the [Structures in the Marine Environment \(SIME 2024\)](#) conference on 22-23 May 2024 in Edinburgh, Scotland. [View the full program here.](#)

The Joint Research Lab on Offshore Renewable Energy (JRL-ORE) and Euskampus Fundazioa are hosting the [10th Marine Energy Conference](#) on 29 May 2024 in Bilbao, Spain. [Register 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

[Integrated survey methodologies provide process-driven framework for marine renewable energy environmental impact assessment](#) – Chapman et al. 2024

Environmental interactions of marine renewable energy developments vary from fine-scale direct (e.g. potential collision) to indirect wide-scale hydrodynamic changes altering oceanographic features. Current UK Environmental Impact Assessment (EIA) and associated Habitats Regulations Appraisal (HRA) guidelines have limited focus on underlying processes affecting distribution and movements (hence vulnerability) of top predators. This study integrates multi-trophic ship survey (active acoustics and observer data) with an upward-facing seabed platform and 3-dimensional hydrodynamic model as a process-driven framework to investigate predator-prey linkages between seabirds and fish schools. Observer-only data highlighted the need to measure physical drivers of variance in species abundances and distributions.

[Numerical study of a fish swimming in hydrokinetic turbine wake](#) – Macias et al. 2024

The environmental effects of hydrokinetic turbines are still under investigation, reflecting the emerging status of this technology. This study investigates the interaction between hydrokinetic rotor wakes and fish swimming, revealing insights into fish biomechanics in complex flows and assessing the environmental implications of marine energy solutions.

We conducted numerical simulations with the URANS approach and k - w - SST turbulence closure model to predict three-dimensional turbulent flow in the OpenFOAM software. The hydrokinetic rotor wake was simulated employing the actuator line method, providing a computationally efficient alternative to full geometry simulations. For accurate replication of the motion of a fish-like tuna (*Thunnus atlanticus*), dynamic adaptive mesh discretization was employed.

Emerging energy sources' social acceptability: Evidence from marine-based energy projects – Ponce Oliva et al. 2024

In this study, we assess the main attributes that determine the social acceptance of renewable marine energy projects, highlighting individual preferences and heterogeneity for these projects. The results show that energy generation, ecological impact, job creation, co-ownership, and distributional justice are statistically significant attributes that support projects. However, individual preferences are highly heterogeneous. The existence of distinct classes (two in this case) with different preferences for marine energy attributes indicates that the one-size-fits-all approach may be inappropriate. Instead, policymakers and energy producers should tailor their proposals to meet the needs of both groups, considering their preferences and concerns.

Wind Energy

A framework for studying the effects of offshore wind energy development on birds and bats in the Eastern United States – Williams et al. 2024

Offshore wind energy development (OWED), while a key strategy for reducing carbon emissions, has potential negative effects to wildlife that should be examined to inform decision making and adaptive management as the industry expands. We present a conceptual framework to guide the long-term study of potential effects to birds and bats from OWED. This framework includes a focus on exposure and vulnerability as key determinants of risk. For birds and bats that are exposed to OWED, there are three main effects of interest that may impact survival and productivity: 1) collision mortality, 2) behavioral responses, including avoidance, displacement, and attraction, and 3) habitat-mediated effects to prey populations.

Assessing exposure to wind turbines of a migratory raptor through its annual life cycle across continents – Assandri et al. 2024

We comprehensively assessed wind turbine exposure for a colonial migratory raptor of European conservation interest, the lesser kestrel *Falco naumanni*, based on the distribution and size of >1800 colonies and a large GPS-tracking dataset (>350 individuals) for three distinct biogeographical populations (from Iberian, Italian, and Balkan peninsulas). 26 % of the European population has at least one wind turbine within the foraging areas around colony sites, Italian colonies being most at risk. The main European network of protected areas, the Natura 2000 network, failed to mitigate the potential negative impact of wind turbines on breeding populations.

[Sailing through end-of-life challenges: A comprehensive review for offshore wind](#) – Vettters et al. 2024

Over the past thirty years, European offshore wind farm development surged, yet end-of-life and decommissioning considerations were overshadowed by initial climate and energy security objectives during design and construction. As the first major projects near their final decade, numerous unanswered questions persist. Through a comprehensive literature review, this study identifies, maps, and evaluates challenges across technical, economic, environmental, social, and policy dimensions spanning five end-of-life phases: planning, dismantling, transport and logistics, waste management, and site recovery. Examining 42 publications reveals 46 distinct challenges affecting stakeholders such as the end-of-life supply chain, policy makers, and society.

News & Press Releases

Marine Energy

[UK Government Supports EMEC Growth Plans](#) – EMEC

The UK Government has announced a new £4.6 million support package for the UK's islands, £3 million of which will be awarded to the Orkney-based European Marine Energy Centre (EMEC) over two years. Levelling Up Secretary Michael Gove made the announcement as island local authorities from across the UK gathered for the fourth UK Islands Forum in Anglesey. EMEC's facilities were featured in a tour during the inaugural Islands Forum held in Orkney in 2022. EMEC is the world's first and leading wave and tidal energy testing facility and has hosted more ocean energy technologies than anywhere else in the world. Growth plans include expanding test facilities to support tidal energy arrays, as well as further diversification to integrate green hydrogen, storage, offshore wind, and islanded decarbonisation projects.

[Ocean energy accelerates towards commercialisation in 2023](#) – Ocean Energy Europe

The ocean energy sector accelerated in 2023, according to the latest statistics released recently by Ocean Energy Europe. Low market visibility in the past still impacts 2023 deployment figures but new revenue support at national level drastically changes the outlook. 137 MW of tidal and wave energy projects will seek deployment in the next 5 years thanks to EU funding and national revenue support. This prompted several energy majors to enter the field as investors or partners into projects and is kick-starting the sector's industrialisation. France and the UK – two of the leading tidal markets globally – have now implemented per/kWh support for tidal farms, increasing the current tidal pipeline to 127 MW over the next 5 years.

First three-month milestone of trouble-free Dragon 12 testing reached – generating valuable data on performance and robustness – Minesto

Minesto, leading ocean energy developer, recently announced that for three months, since its initial installation in February 2024, the tidal kite Dragon 12 has been successfully grid connected and delivers as expected at the site in Vestmanna. In addition, for the first time, an array of tidal kites is in operation – the 1.2 MW D12 and one 100kW D4, adding valuable production data for array build-out. The data being generated underlines commercial readiness of Dragon Class systems and the continued testing supports both critical sales activities and preparations for product delivery. Operating two systems in parallel contributes to new ways of verification and learning in core areas, such as kite-park design, product range modularity and performance optimization.

Crown Estate Scotland survey finds significant appetite to accelerate deployment of tidal and wave energy – Crown Estate Scotland

An in-depth survey was carried out by the Offshore Renewable Energy (ORE) Catapult on behalf of Crown Estate Scotland in 2023, with views and ideas sought from those working to develop and bring to market the next generation of wave and tidal technologies and projects. The survey found that there was a significant appetite for development of both tidal energy and wave energy in Scotland but with each sector increasingly focused on differentiating their market positions there is a need to reflect their differing priorities and challenges. The report highlights that tidal energy is focused on utility scale (large-scale supply to grid) and community scale (local supply for local demand) developments, whilst the wave sector views its future development in more offshore applications, including decarbonisation of oil and gas and colocation opportunities.

James Fisher secures its first tidal energy project in Anglesey, UK – James Fisher and Sons

James Fisher and Sons plc (James Fisher) has been awarded a contract for the management, repair and maintenance of high voltage equipment and cables at two of Menter Môn's Morlais tidal energy substations. The energy generated by Morlais has the potential to reach 240 MW (30 MW per plug-in site), enough to power 180,000 typical households. Having commenced in December 2023, the contract is anticipated to span 24 months initially and will see James Fisher provide asset repair and maintenance services at the site through high voltage equipment testing and enhanced diagnostic testing. In addition, James Fisher will continually monitor safety measures through their safe systems of work to support informed decision-making for Menter Môn.

Wind Energy

Minister Ryan publishes draft plan identifying proposed areas off the south coast suitable for offshore wind projects – Government of Ireland

The Minister for the Environment, Climate and Communications, Eamon Ryan, recently published the draft South Coast Designated Maritime Area Plan (DMAP), Ireland's first ever spatial plan for renewable energy at sea. The draft South Coast DMAP identifies four maritime areas off the south coast in which development of offshore renewable energy (ORE) is proposed to take place over the next decade. An independent economic analysis, published alongside the draft South Coast DMAP, highlights the potential economic benefits associated with implementation of the plan, which could deliver inward investment of €4.4 billion and an estimated 49,000 full-time equivalent years of employment to the Irish economy.

Denmark's latest offshore wind auction could award enough capacity to meet the country's entire electricity demand – WindEurope

This week Denmark opened an offshore wind tender which could award up to 10 GW. If successful, the awarded capacity would be enough to meet all of the country's electricity demand. It could also be used to produce renewable hydrogen and other green fuels. It remains to be seen whether the auction design will attract investors and deliver on these very large volumes. Denmark has nearly 3 GW of offshore wind today. The new Danish offshore auction aims to connect another 6 GW offshore wind to the grid. Six wind farm areas are tendered in the auction. Three in the North Sea, two in the Kattegat and one in the Baltic Sea. Developers have the option to install more wind capacity in their tendered areas than the volumes initially planned by the Government. The additional capacity can be used to produce renewable hydrogen and other green fuels.

California Community Power and CADEMO Execute Offshore Wind MOU – CADEMO

California Community Power ("CC Power"), a Joint Powers Authority that conducts joint power procurement on behalf of nine California Community Choice Aggregators ("CCAs"), and CADEMO have executed a Memorandum of Understanding ("MOU") to facilitate the advancement of CADEMO's project. This MOU is intended to establish a collaborative engagement between CC Power and CADEMO to support the development of the CADEMO project as California's first offshore wind project. The project will be located off the coast of Vandenberg Space Force Base, near Lompoc, in California state waters. It is targeting a commercial operation date in 2028, which would position it to come online several years ahead of other planned offshore wind projects in federally leased waters off the California coast.

UK offshore wind industry gearing up for a new era of sustainable growth – The Crown Estate

The UK offshore wind industry is gearing up for a new era of accelerated, sustainable growth supported by a range of new approaches and commitments introduced in 2023, according to The Crown Estate's latest UK Offshore Wind Report 2023. Offshore wind is a UK success story. It's the second largest offshore wind market in the world and represents more than 40% of European offshore wind capacity. The pipeline grew by a further 10GW in 2023, to 93GW, and the sector produced 49TWh of electricity last year,

enough to power the equivalent of 50% of UK homes. Whilst this demonstrates exceptional progress since the first turbines were installed some 25 years ago, it is estimated that 125GW could be needed by 2050 to meet net zero.

Ørsted secures licences to develop large-scale offshore wind projects in Australia – Ørsted

The Australian Government has announced that it has granted a feasibility licence for Ørsted's first offshore wind project in Australia and intends to grant a licence for a second project, subject to consultation. With the licences, Ørsted aims to develop large-scale offshore wind farms off the coast of Gippsland, Victoria, to be operational in the early 2030s. The licences provide Ørsted with site exclusivity to develop the two offshore wind sites. Ørsted's successful feasibility licence applications were assessed through a competitive process. Ørsted's far-shore project sites are located 56-100 km off the coast of Gippsland, Victoria. They are situated beyond the visible eyeline from the shore and benefit from excellent wind conditions.