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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

New WREN Short Science Summaries

Working Together to Resolve Environmental Effects of Wind Energy ([WREN](#)) recently published two new Short Science Summaries on Tethys, [Collision Risk Modeling – A Tool for Assessing Risks to Raptors at Wind Energy Facilities](#) and [The Likelihood of Bats Experiencing Barotrauma Near Moving Wind Turbine Blades](#).

Request for Information

On behalf of the Mowachaht/Muchalaht First Nation, Barkley Project Group is releasing a [Request for Information](#) to determine wave energy converter technologies that are capable of integrating with a microgrid system at Yuquot (Nootka Island, British Columbia). Interested respondents should provide detailed information on how they propose to engage with the Yuquot Microgrid Project within the [summary document](#) by 5:00 pm PDT on 31 March 2023.

BOEM Seeking Comments

The U.S. Bureau of Ocean Energy Management (BOEM) is seeking comments on a [proposed rule](#) to better protect shipwrecks and other cultural resources on the seabed from harm due to offshore energy activities (due 17 April 2023) and a [proposed sale notice](#) in the Gulf of Mexico (due 23 April 2023).

Calls for Abstracts

The Pan American Marine Energy Conference (PAMEC) Association is now accepting [Expressions of Interest](#) to submit an extended abstract for presentation at [PAMEC 2024](#) through 15 April 2023. Extended abstracts will be due 26 June 2023. PAMEC will take place on 22-24 January 2024 in Barranquilla, Colombia, with pre-conference workshops on 19-20 January 2024.

The [Call for Abstracts](#) for [Clean Currents 2023](#) is now open through 15 April 2023. Clean Currents will take place 10-13 October 2023 in Cincinnati, Ohio, U.S. Opportunities include classroom presentations, technology/innovation sessions, poster presentations, and workshops.

The [Call for Abstracts](#) for [OCEANS 2023 Gulf Coast](#) is now open through 17 April 2023. OCEANS 2023 Gulf Coast will take place 25-28 September 2023 in Biloxi, Mississippi, U.S.

The [Call for Abstracts](#) for the [University Marine Energy Research Community \(UMERC\) 2023 Conference](#) is now open through 23 April 2023. UMERC 2023 will take place on 4-6 October 2023 in Durham, New Hampshire, U.S. Apply for travel/registration support by 15 June 2023.

The [Call for Abstracts](#) for the North American Wind Energy Academy (NAWEA)/WindTech 2023 Conference will open soon. Abstracts will be due 5 May 2023. NAWEA/WindTech will take place from 30 October to 1 November 2023 in Broomfield, Colorado, U.S.

Funding & Testing Opportunities

The U.S. Department of Energy (DOE) recently announced a \$30 million [funding opportunity](#) to advance composite materials and additive manufacturing for large wind turbines including for offshore wind energy systems. Concept papers are due 23 March 2023 and full applications are due 9 May 2023.

The Horizon Europe Framework Programme recently launched a funding opportunity entitled, “[Demonstration of sustainable tidal energy farms](#)”, to de-risk tidal technology development and increase knowledge of potential environmental impacts. Applications are due 30 March 2023.

The Sustainable Blue Economy Partnership, a Horizon Europe co-funded partnership, recently announced its first [Joint Transnational Call](#) to support transnational research and innovation projects related to the blue economy. Pre-proposals are due 14 April 2023.

The U.S. DOE has opened applications for the [Energy Transitions Initiative Partnership Project \(ETIPP\)](#) for remote and island communities seeking technical assistance to transform their energy systems and increase energy resilience. An [informational webinar](#) will take place at 1:00pm MDT (7:00pm UTC) on 11 April 2023. Applications are due 19 May 2023.

The U.S. DOE's Office of Clean Energy Demonstrations [recently announced](#) \$300 million for projects that increase energy affordability and promote climate resilience and \$15 million for a [prize competition](#) to help rural communities build capacity needed for clean energy development

and deployment. Concept papers for the [funding opportunity](#) are due 14 April 2023, and submissions for the first round of the prize are due 24 May 2023.

Student & Employment Opportunities

The European Marine Energy Centre is seeking an [Environmental Officer](#) to implement its environmental monitoring program and provide guidance to manage risks associated with marine renewables. Applications are due 19 March 2023.

Pacific Northwest National Laboratory is seeking a [Coastal Modeler](#) to conduct numerical simulations using wave and coastal circulation models and analyze remotely sensed, in-situ collected, and numerically modeled datasets. Applications are due 24 March 2023.

Aarhus University is seeking a [Research Assistant](#) to support research projects and monitoring programs on marine mammals and underwater noise. Applications are due 24 March 2023.

The U.S. DOE's Wind Energy Technologies Office (WETO) is hiring a new [Director](#) to lead the planning, research, development, and deployment strategies for WETO's programs. Applications are due 28 March 2023.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) is looking for a [Chief of Section](#) to lead, coordinate, and organize the activities of the Intergovernmental Oceanographic Commission Ocean Science Section. Applications are due 10 April 2023.

The Cyprus Marine and Maritime Institute is seeking [Scientists and Researchers](#) to undertake multidisciplinary projects that will support research work at the Maritime Digitalisation Centre.

Upcoming Events

Upcoming Webinars

The National Renewable Energy Laboratory is hosting a webinar on 24 March 2023 at 11:00am MDT (5:00pm UTC) will provide an overview of the three competitions, and present opportunities for interested schools to get involved, and invite attendees to discuss their school's interest and ability in participating in these competitions. Register [here](#).

The European Marine Board is organizing a webinar to launch its Future Science Brief n°9, "[European offshore renewable energy: Towards a sustainable future](#)", on 4 April 2023 from 2:00-3:30pm CET (12-1:30pm UTC). The webinar will discuss the state-of-the-art of the offshore renewable energy sector globally and in Europe, gaps, and impacts. Register [here](#).

The U.S. DOE WPTO is hosting its next Semiannual Stakeholder Webinar on 4 April 2023 from 2:30-4pm EDT (6:30-8pm UTC). Staff and leadership will dive into current and future funding opportunities; other accomplishments, news, and updates; and the office's newly released [2021-2022 Accomplishments Report](#). Register [here](#).

The New York State Energy Research and Development Authority's (NYSERDA) Offshore Wind team is hosting a Learning from the Experts webinar on [Bird Monitoring Methodology for Offshore Wind](#) on 5 April 2023 from 1:00-2:00pm EDT (8:00-9:00pm UTC).

Pacific Northwest National Laboratory and National Renewable Energy Laboratory are hosting a Marine Energy Career Panel to highlight staff across various disciplines (engineering, biology, science communications, etc.) to discuss their marine energy careers including their background, education, career path, and current projects. The webinar will be held on 10 April 2023 at 3:00pm PDT (10:00pm UTC). Register [here](#).

Upcoming Workshop

The Portal and Repository for Information on Marine Renewable Energy ([PRIMRE](#)) is hosting a workshop focused on geospatial and permitting and licensing tools for U.S. marine energy projects on 18 April 2023 from 9:00-11:00am PDT (4:00-6:00pm UTC). The workshop will feature presentations on the [Marine Energy Environmental Toolkit for Permitting and Licensing](#), the [Marine Energy Atlas](#) and other geospatial data within PRIMRE, and PRIMRE capabilities to support marine energy projects. Register [here](#).

Upcoming Conferences

The [2nd EuropeWave Annual Conference](#) will take place on 28 March 2023 in Brussels, Belgium and online. Register [here](#).

The Business Network for Offshore Wind is hosting the [International Partnering Forum](#) on 28-30 March 2023 in Baltimore, Maryland, U.S. Register [here](#).

New Documents on Tethys

Marine Energy

[Environmental Impact Assessment: Wave Swell Energy Test Site, Grassy Harbour, King Island, Tasmania](#) – Marine Solutions 2023

Marine Solutions conducted an environmental survey in Grassy Harbour, King Island on the 19th of December 2022, to facilitate an Environmental Impact Assessment (EIA) of the UniWave installation. The objective of the EIA is to determine if the 2-year deployment and operation of the UniWave had any detectable impact on the ocean, seafloor and ecology of the immediately surrounding area. A suite of environmental data was collected in surveys at the UniWave site, and at two control sites at a nearby reef and inside the Grassy Harbor marina. The environmental data collection at all three locations included underwater habitat surveys, water quality profiling and sediment analysis (contaminant and particle size). An additional bathymetric mapping of the seabed around the UniWave installation was conducted.

SafeWAVE Deliverable 5.3 Refinement of a Risk-based Adaptive Management Approach with industry, regulatory and societal stakeholders – Verling et al. 2023

SafeWAVE Deliverable 5.2 explored the use of ecological or environmental Risk Based Approach (RBA) in the Marine Renewable Energy (MRE) development context by reviewing the current state of knowledge around the use of RBAs, analysing five key RBAs (in short, the Environmental Risk Evaluation System, The Ecological Risk Assessment framework, Risk Retirement, Survey Deploy Monitor, and International Organization for Standardization) that have been developed and finding the crosswalks and differences between them. Ultimately that deliverable made recommendations as to what work might be required to progress and make the use of RBA in consenting processes a practical reality.

Site Selection of Combined Offshore Wind and Wave Energy Farms: A Systematic Review – Hosseinzadeh et al. 2023

A combination of offshore renewable energy resources such as wind and wave energy can produce stable power output at a lower cost compared to a single energy source. Consequently, identifying the best locations for constructing combined offshore renewable energy farms is crucial. This paper investigates the technical, economic, social, and environmental aspects of Combined Offshore Wind and Wave Energy Farm (COWWEF) site selection. Past literature was evaluated using a systematic review method to synthesize, criticize, and categorize study regions, dataset characteristics, constraints, evaluation criteria, and methods used for the site selection procedure. Environmental and marine usage are the main constraints in the site selection process.

Wind Energy

Resolving Key Uncertainties of Seabird Flight and Avoidance Behaviours at Offshore Wind Farms: Final Report for the study period 2020-2021 – Tjørnløv et al. 2023

The main aim of Vattenfall's European Offshore Wind Deployment Centre (EOWDC) Bird Collision Avoidance Study has been to improve our understanding of seabird flight behaviour inside an offshore wind farm. This should be achieved through collection of as detailed seabird flight data as possible rather than through estimation of avoidance rates for collision risk modelling per se. The focus is on seabird flight behaviour during the breeding period and post-breeding period when densities are highest in the Aberdeen area. The technical improvements of the monitoring equipment employed in the Aberdeen Offshore Wind Farm made it possible to track seabirds inside the array and measure meso-avoidance more confidently than before. It has been possible to match video camera recordings of seabird movements to a sample of their radar tracks.

Effectiveness of an artificial intelligence-based system to curtail wind turbines to reduce eagle collisions – Duerr et al. 2023

Operating wind-power projects often includes protecting volant wildlife. One method for doing this uses an automated system to detect, identify (through use of artificial intelligence; AI), track animals (targets) and curtail turbines when risk of a collision is high. However, assessments of the effectiveness, in terms of identification accuracy and subsequent turbine curtailment of such systems are lacking. Over 1 year, we assessed such an automated system installed at a wind project in California, USA to determine its identification accuracy and rates at which "virtual" curtailments were ordered (without slowing turbines), for eagles (intended targets) and non-eagle targets. Curtailment orders occurred 6 times more frequently for non-eagle targets than for eagle targets.

Effects of offshore wind farms on suspended particulate matter derived from satellite remote sensing – Brandao et al. 2023

Suspended particulate matter (SPM) is expected to increase in wind farm areas. This study assessed the spatial and temporal patterns of SPM concentrations in offshore wind farm (OWF) areas located in the Dutch part of the North Sea from satellite remote sensing. A Before-After Control-Impact (BACI) analysis was performed to investigate the impacts of the construction of the wind farms. The environmental factors influencing SPM concentrations were analyzed using scatterplots and correlations. SPM reduced in impact and control sites and season shaped environmental variables. SPM is biased by sampling under clear-sky and optimum meteorological conditions.

News & Press Releases

Marine Energy

Canada's Ocean Supercluster announces \$14.1M Oneka Glacier Project making ocean a sustainable and affordable source of freshwater – Oneka Technologies

Canada's Ocean Supercluster recently announced the \$14.1 million Oneka Glacier Project – Utility-Scale Wave Powered Sustainable Desalination, led by Oneka Technologies, a Sherbrooke, Quebec-based clean tech company. In the project, Oneka will scale up its wave-powered desalination technology to utility-scale, creating a desalination "Glacier" system to make the ocean a sustainable and affordable source of freshwater. Oneka Technologies will work with project partners AF Theriault who is supporting the manufacturing the hull and structure of the Glaciers'; H2O Innovation who is providing the process plant for the desalination portion of the Glacier technology; and government partner, the City of Barrington, Nova Scotia who will provide a coastal site for buoy installation at Cape Sable Island.

UK government halves ring-fenced support for tidal energy in next renewables auction – Offshore Energy

The UK government has confirmed the £205 million budget for renewable energy projects in the fifth round of contracts for difference (CfD) auction. The £205 million for

the fifth round of contracts for difference auction (AR5) includes £170 million for established technologies such as offshore wind, and £35 million for emerging technologies such as geothermal and floating wind, out of which £10 million is ring-fenced for tidal stream technologies. The ring-fenced budget for tidal energy is therefore halved when compared to £20 million that was made available for the industry in the AR4 auction, which awarded over 40MW of new tidal power capacity to four tidal energy developers. The AR5 is scheduled to open for applications on March 30, with the results expected in late summer/early autumn of 2023.

Marine report finds no detectable impact from UniWave installation at Grassy Harbour, King Island – Wave Swell Energy

Wave Swell Energy Limited (WSE) commissioned Marine Solutions Tasmania Pty Limited, a leading environmental services firm, to complete a marine environment impact assessment at Grassy Harbour, King Island in December 2022. The assessment concluded that the two-year long deployment and operation of the UniWave200 wave-energy converter had no noticeable effect on the ocean, seafloor and ecology of immediately surrounding areas. The survey identified the marine species colonising on the structure were representative of the surrounding reef community and any ongoing deployment of the unit would create an extended habitat for local marine species. The assessment included mapping of the seabed, water-quality profiling and ecological field surveys at the location of the UniWave200 unit and in nearby surrounding locations.

Wavepiston and YS Energies Marines Developpement (YS~EMD) sign an agreement to develop a wave energy project in Martinique – Wavepiston

The two companies have formed a partnership to co-develop a wave energy project. The project aims to provide clean energy for the local communities. The agreement is the result of a preliminary site selection study that was done in 2021-22. The study identified the wave energy potential of the area and the most suitable locations for the project. As a result, the companies have now joined forces to kick-start the project development. Wavepiston is currently installing the first full-scale system off the coast of Gran Canaria and in parallel preparing first commercial projects. YS~EMD develops ocean energy projects (tidal and wave) for and with stakeholders in coastal regions. YS~EMD acts, through consultation, in favour of the resilience of these areas, driven by the fight against climate change.

First electricity produced from Minesto's second foundation in Faroe Islands – Offshore Energy

Swedish ocean energy developer Minesto has installed the tidal power plant Dragon 4 and generated the first electricity at the newly added second foundation in Vestmannaund, Faroe Islands. Offshore infrastructure works to double the capacity at the Vestmanna site were completed in December 2022 and an upgraded tether solution was introduced in a targeted research and development project that aims to further improve production performance by reducing resistance in the water. Early in summer

2022, Minesto deployed the first 100kW Dragon Class unit in Faroe Islands, after which it started to commission the second tidal plant in September 2022. Since, Minesto's second Dragon 4 unit delivered a record-breaking results in terms of total electricity generated, peak performance, and energy conversion at large.

Wind Energy

Welsh Ministers provide final consent for Wales' pioneering floating wind project – Blue Gem Wind

Welsh Ministers have granted a Section 36 consent with deemed planning permission to Blue Gem Wind to build and operate the Erebus project. The news follows the recent decision by Natural Resources Wales to provide the joint venture between TotalEnergies and Simply Blue Group a marine licence. Erebus, Wales' first planned floating windfarm is located approx 40 km off the Pembrokeshire coastline and will house next generation turbines on floating platforms, providing new low carbon energy and contributing to net zero targets and energy security. Erebus, named after the famous ship built in 1826 in Pembroke Dock is due to be commissioned in 2026 and marks the start of Blue Gem Wind's stepping stone approach to floating wind development in the Celtic Sea.

X1 Wind's X30 floating wind prototype delivers first kWh – X1 Wind

X1 Wind recently announced that its X30 floating wind prototype, installed in the Canary Islands, successfully produced its first kWh. The milestone marks the world's only floating wind platform currently installed with a TLP mooring system, which dramatically reduces the environmental footprint and improves compatibility with other sea uses. It further heralds Spain's first floating wind prototype to export electricity via a subsea cable. 'First power' was fed into PLOCAN's offshore platform smartgrid via a 1.4km underwater cable. Local teams will now enter the last phase of a rigorous test and verification programme which started with the platform installation in November 2022, in preparation of technology scale-up and certification for commercial scale projects currently under development.

Distributed Wind Energy Brings Value to Remote and Rural Communities – U.S. DOE

While distributed wind energy projects are already saving communities money and bringing other benefits, their adoption has been limited, with only 1,075 megawatts of cumulative distributed wind capacity deployed nationwide between 2003 and 2021. A lack of awareness of distributed wind energy's economic value, clean energy value, and energy resilience could have contributed to its slow adoption. Now, thanks to the 4-year Microgrids, Infrastructure Resilience, and Advanced Controls Launchpad (or MIRACL) project, those data exist and confirm distributed wind energy could be a cost-effective source of clean power to many communities, especially those in remote and rural areas, as well as a key component in reliable and resilient energy systems.

Ørsted and Eversource Propose New Offshore Wind Farm in Rhode Island, Building on Their Leading Role in Ocean State's Growing Offshore Wind Industry – Ørsted

Ørsted and Eversource recently announced they have submitted a joint proposal in response to the state's offshore wind solicitation. Delivering clean, reliable renewable power for more than 500,000 Rhode Island homes, the proposed 884-megawatt Revolution Wind 2 represents more than \$2 billion in direct economic benefits to Rhode Island's blue and green economies, including the creation of hundreds of local jobs and unprecedented investments in port improvements and shipbuilding. Together with Ørsted and Eversource's Revolution Wind – the state's first utility-scale offshore wind farm – Revolution Wind 2 would help advance the state's 100-percent clean energy by 2033 climate goal. The carbon emissions achieved by Revolution Wind 2 would be the equivalent of taking more than 265,000 cars off New England roads.

ORE Catapult enables clean maritime innovation to surge ahead in offshore wind sector – ORE Catapult

The Offshore Renewable Energy (ORE) Catapult is driving forward decarbonisation in the maritime industry after winning two projects in the Clean Maritime Demonstration Competition round 2, funded by the Department for Transport, and delivered in partnership with Innovate UK. The first 'eFoiler-CTV' project is a collaboration between ORE Catapult, Artemis Technologies, Tidal Transit and Lloyds Register, to accelerate the design and engineering of a 24m electric foiling Crew Transfer Vessel, aiming for deployment and real-world demonstration by March 2025. The second project, the 'SOV Offshore Charging System', will develop an offshore charging concept for Service Operation Vessels with prototyping and testing, driven by an industry consortium of ORE Catapult, MJR, Blackfish Engineering, Bibby Marine and Clean Offshore.