



**7 July 2023**

[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**

### WCOA Request for Proposals

The West Coast Ocean Alliance (WCOA) has released two Requests for Proposals to provide support for the [WCOA Tribal Caucus Summit](#) and [WCOA Annual Summit](#) in October 2023. Proposals are due 14 July 2023.

### BOEM Requests Comments

The U.S. Bureau of Ocean Energy Management (BOEM) is [seeking public comments](#) on its intent to prepare an Environmental Impact Statement for the construction and operation of the Beacon Wind offshore wind project off Massachusetts. Comments are due 31 July 2023.

### Request for Information

Pacific Northwest National Laboratory is requesting information from developers, owners, and/or manufacturers of wave energy converters (WECs) capable of deployment and operation of their WEC to power offshore aquaculture operations. The [Request for Information](#) is open through 11 August 2023.

### Request for Expressions of Interest

The New Jersey Economic Development Authority, on behalf of the forthcoming Wind Institute for Innovation and Training, has released a [Request for Expressions of Interest](#) to identify

partners to develop an Offshore Wind Innovation Center focused on climate smart modeling, environmental impact assessment, and more. Responses are due 13 September 2023.

### RWSC Science Plan

The Regional Wildlife Science Collaborative for Offshore Wind (RWSC) has released the [Draft Integrated Science Plan for Wildlife, Habitat, and Offshore Wind Energy in U.S. Atlantic Waters](#) for review and comment. The Plan describes recommendations for data collection, research, and coordination compiled by expert subcommittees. Comments are due 30 September 2023.

### Calls for Abstracts

The [Call for Extended Abstracts](#) for the [Pan American Marine Energy Conference \(PAMEC 2024\)](#) is now open through 10 July 2023. PAMEC 2024 will take place on 22-24 January 2024 in Barranquilla, Columbia.

The University of Maine has opened the [Call for Abstracts](#) for the [American Floating Offshore Wind Technical Summit \(AFloat 2023\)](#) Poster Session through 14 July 2023. AFloat will take place on 26-27 September 2023 in Portland, Maine, U.S.

The American Geophysical Union (AGU) has opened the [Call for Abstracts](#) for the [AGU Fall Meeting 2023](#) through 2 August 2023. The meeting will take place on 11-15 December 2023 in San Francisco, CA, U.S. and online. Please consider submitting an abstract to [Marine Energy to Power the Blue Economy session](#) or the [Renewable Energy: Wind session](#).

The [Call for Abstracts](#) for the Argentine Meeting on Marine Energies (ENAEM) and 8<sup>th</sup> Center for Ocean Energy Research (COER) Wave Energy Workshop is now open through 13 August 2023. [ENAEM-COER 2023](#) will take place on 6-8 November 2023 in Buenos Aires, Argentina.

The [Call for Abstracts](#) for the [104<sup>th</sup> American Meteorological Society \(AMS\) Annual Meeting](#) is now open through 24 August 2023. The event will take place from 28 January to 1 February 2024 in Baltimore, Maryland, U.S.

The [Call for Abstracts](#) for [Floating Wind Solutions \(FWS\) 2024](#) is open through 1 September 2023. FWS 2024 will take place 5-7 February 2024 in Houston, Texas, U.S.

The [Call for Abstracts](#) for the [WindEurope Annual Event 2024](#) is now open through 8 September 2023. The event will take place 20-22 March 2024 in Bilbao, Spain.

### Funding & Testing Opportunities

The U.S. Testing Expertise and Access for Marine Energy Research (TEAMER) program, sponsored by the Department of Energy's (DOE) Water Power Technologies Office (WPTO), is now accepting [Request for Technical Support \(RFTS\) 10](#) applications until 14 July 2023.

The U.S. DOE WPTO has released a [funding opportunity](#) to support projects focused on advancing the tidal and current energy industry, including a community-led development project. Concept papers are due by 13 July 2023.

California Ocean Protection Council has launched an [Offshore Wind Environmental Monitoring Guidance Request for Proposals](#) and is seeking applications to develop environmental monitoring guidance for offshore wind development in California by 31 July 2023.

### Student & Employment Opportunities

The Oregon Sea Grant College Program is soliciting applications for the [Oregon Sea Grant 2023-2024 Natural Resource Policy Fellowship and the new West Coast Ocean Alliance Fellowship](#) program. Applications are due 10 July 2023.

Pacific Northwest National Laboratory is seeking a [Post Masters Research Associate – Coastal Communities and Ecosystem Science](#) to contribute to research exploring the effects of global change on coupled human-natural systems and developing innovative solutions to support climate and energy resilience for coastal communities. Applications are due 17 July 2023.

The Renewable Energy Environmental Advice Group in Marine Scotland Science is seeking a [Renewables Science Advice Lead](#) to provide advice within government on the potential environmental impacts of offshore wind energy. Applications are due 23 July 2023.

The UK Centre of Ecology & Hydrology is looking for a [Net Zero Project Specialist](#) to help coordinate and deliver complex, multi-organization science projects, focusing on the global path to net-zero goals.

Littoral Power Systems is seeking a [R&D Project Manager](#) with technical knowledge or experience to work on projects related to harnessing energy from ocean waves; river, tidal and ocean currents; and riverine hydroelectric resources.

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## Upcoming Events

### Upcoming Webinars

The U.S. Offshore Wind Synthesis of Environmental Effects Research ([SEER](#)) project is hosting a webinar, “[Emerging Technologies and Infrastructure for Monitoring Bats and Birds Offshore](#)”, from 10:00-11:00am PDT (5:00-6:00pm UTC) on 12 July 2023. Register [here](#).

The Marine Alliance for Science and Technology for Scotland ([MASTS](#)) is hosting a webinar, “A pilot study towards understanding the connectivity of United Kingdom and Norwegian black-legged kittiwake populations across the North Sea”, on 19 July 2023 from 12:00-12:30pm UTC. Register [here](#).

The National Oceanic and Atmospheric Administration National Marine Protected Areas Center and Open Communications for the Ocean are hosting a webinar, “Developing Offshore Wind in US Waters Part 1: The Planning and Regulatory Framework”, from 10:00-11:00am MDT (4:00-5:00pm UTC) on 19 July 2023. Register [here](#).

As part of its [Learning from the Experts series](#), the New York State Energy Research and Development Authority is hosting a webinar, “Environmental Data Management and Offshore Wind”, from 1:00-2:00pm EDT (5:00-6:00pm UTC) on 19 July 2023. Register [here](#).

### Upcoming Workshop

The U.S. DOE WPTO is hosting a [Water-Energy Nexus Strategy Workshop](#) on 25 July 2023 from 11:00am-5:00pm EDT (3:00-9:00pm UTC) to discuss the interdependent linkage of water and energy resources. Join to learn more about WPTO’s strategy development and to provide input on the objectives, questions, and directions being explored.

### Upcoming Conferences

The [15th European Wave and Tidal Energy Conference \(EWTEC 2023\)](#) will take place on 3-7 September 2023 in Bilbao, Spain. Register [here](#).

The [International Council for the Exploration of the Sea \(ICES\) Annual Science Conference \(ACS 2023\)](#) will take place on 11-14 September 2023 in Bilbao, Spain and online. Register [here](#).

The [7th Conference on Wind Energy and Wildlife Impacts \(CWW 2023\)](#) will take place on 18-22 September 2023 in Šibenik, Croatia. Register [here](#).

### Upcoming Symposium

The International Network on Offshore Renewable Energy (INORE) is hosting the [24th INORE Symposium](#) on 7-11 November 2023 in Viana do Castelo, Portugal. Symposium activities, food, and lodging are free; attendees cover travel. Graduate students, early-stage researchers, and young professionals in offshore renewable energy can apply to attend through 31 July 2023.

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## **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**

[Ocean Energy and Net Zero: Policy Support for the Cost Effective Delivery of 12GW Wave and Tidal Stream by 2050](#) – Policy and Innovation Group 2023

This report outlines the policy support mechanisms and the associated costs that are required to accelerate the commercialisation of the wave and tidal stream energy sectors. One of the primary challenges facing these technologies is the need to drive down the overall cost of energy generation and achieve cost parity with the wholesale market price. This can be achieved in part through the targeted application of technology push and market pull policy support mechanisms, which can drive both sector innovation and market growth for wave and tidal stream energy devices. This report will analyse the use of existing market pull and technology push policy support mechanisms and evaluate their success and impact to date.

### **Tidal barriers and fish – Impacts and remediation in the face of increasing demand for freshwater and climate change – Bice et al. 2023**

Worldwide, tidal barriers (e.g. barrages, dikes, tide gates) are constructed in the lower reaches and estuaries of rivers to limit saltwater incursion into upstream freshwater reserves, facilitate water diversion and abstraction, limit flooding, reclaim land and generate electricity. While performing these functions, tidal barriers also affect fish through: 1) reduced connectivity; 2) loss of tidal flux; 3) conversion of upstream estuarine habitats to freshwater; and 4) diminished freshwater discharge. We present case studies from the Netherlands, southeastern United States and southern Australia to characterise impacts on fishes in different biogeographical regions and document contemporary approaches to restoring ecosystem function and fish populations in systems with tidal barriers.

### **Comparative Life Cycle Assessment of tidal stream turbine blades – Walker et al. 2022**

Renewable energy allows electricity generation with lower environmental and resource impact than generation from fossil fuels. However, the manufacture, use and ultimate disposal of the equipment used to capture this energy has an environmental impact, which should be minimised. Tidal turbine blades are currently primarily manufactured from glass-fibre reinforced polymers. Such blades cannot be recycled at the end of their life, and are disposed of in landfill or by incineration. As the tidal energy industry grows, the volume of non-recyclable waste is a potential problem. Here we consider the environmental impact of ten combinations of material and disposal method for tidal stream turbine blades, including recyclable options.

## **Wind Energy**

### **Wind turbine power and land cover effects on cumulative bat deaths – Moustakas et al. 2023**

Wind turbines (WT) cause bird and bat mortalities which depend on the WT and landscape features. The effects of WT features and environmental variables at different spatial scales associated to bat deaths in a mountainous and forested area in Thrace, NE Greece were investigated. Initially, we sought to quantify the most lethal WT characteristic between tower height, rotor diameter and power. The scale of interaction

distance between bat deaths and the land cover characteristics surrounding the WTs was quantified. A statistical model was trained and validated against bat deaths and WT, land cover, and topography features. Variance partitioning between bat deaths and the explanatory covariates was conducted. The trained model was used to predict bat deaths attributed to existing and future wind farm development in the region.

### **Eco-friendly reef restoration pilots in offshore wind farms – Bos et al. 2023**

European flat oyster (*Ostrea edulis*) reefs constitute a potential keystone habitat for the North Sea ecosystem, enhancing biodiversity. But a combination of diseases, pollution, cold winters and overfishing have caused their disappearance circa a century ago, so it is widely attempted to restore these reefs. The ECOFRIEND project aimed to develop and study new methods to re-introduce and monitor flat oyster reefs and related biodiversity in offshore wind farms, in cooperation with the wind industry. The expected outcomes of the ECOFRIEND project (2019-2023) were a proof-of-concept for active reintroduction of offshore flat oyster beds, to show whether there would be a viable population of flat oysters in an offshore wind farm and to develop novel methods, including (predictive) models, to help monitoring the effectiveness of restoration initiatives.

### **Forecasting suitable areas for wind turbine occurrence to proactively improve wildlife conservation – Boggie et al. 2023**

We developed a machine learning model predicting suitability of wind turbine occurrence across an eight-state region in the United States, representing some of the richest areas of wind potential. Our model incorporates predictor variables related to infrastructure, land ownership, meteorology, and topography. We additionally created a constraint layer indicating areas where wind would likely not be developed because of zoning, protected lands, and restricted federal agency proximity guidelines. We demonstrate how the predictive wind turbine suitability model informs conservation planning by incorporating animal movement models, relative abundance models coupled with spatial conservation planning software, and population density models for three exemplar, high priority species often affected by wind energy: whooping cranes (*Grus americana*), golden eagles (*Aquila chrysaetos*), and lesser prairie-chickens (*Tympanuchus pallidicinctus*).

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## **News & Press Releases**

### **Marine Energy**

#### **CorPower Ocean resumes C4 deployment program. – CorPower Ocean**

Earlier this year, CorPower Ocean identified cable damage at the offshore site. It initiated a series of operations to recover and refurbish the electrical export cable involving ROVs (Remote Operated Vehicles) and offshore construction vessels, which was successfully concluded in June. With the site infrastructure restored, CorPower Ocean has resumed the C4 deployment program by testing operational methods for connecting and disconnecting

its C4 device. This follows the successful site installation of the UMACK anchor and subsea electrical export cables in mid-2022 and the completion of C4 assembly and successful Pre-Deployment Check (PDC) program at the quay-side launch pad in Viana do Castelo in December 2022.

### **SAE Renewables Successfully Deploys Upgraded Turbine – SIMEC Atlantic Energy (SAE)**

SAE recently announced the successful deployment of ‘Turbine 2’ at the MeyGen site. The turbine has undergone significant upgrades to improve performance and reliability. One of the major steps was to convert the turbine to use a wet-mate connection system. This dramatically reduces costs and time for future maintenance work. This innovation has been a key development in ensuring the next phase of turbines deployed at the MeyGen site are the most advanced and deliver the best performance in the industry. This innovation wouldn’t have been possible without the support of the EU-funded, Tidal Stream Industry Energiser Project, known as TIGER. As a demonstrator project, the lessons learnt, improvements and innovations are key to unlocking commercial and scalable projects.

### **Oxford University to lead tidal energy project for carbon emission reduction and energy security – University of Oxford**

The University of Oxford is to lead an ambitious £7 million project to help deliver scalable, affordable and sustainable tidal stream energy. Besides boosting energy security, this could help enable tidal stream energy make a meaningful contribution to achieving UK Net Zero goals. ‘Co-design to deliver Scalable Tidal Stream Energy’ (CoTide) will bring together three multi-disciplinary teams from the universities of Oxford, Edinburgh, and Strathclyde. Backed by investment from the Engineering and Physical Sciences Research Council (EPSRC), the project will address the key challenges that are currently preventing the tidal energy sector from reaching its full potential. CoTide will focus on developing state-of-the-art tidal stream turbine systems.

### **Marine Energy Wales and Morlais Sign Memorandum of Understanding to Accelerate Marine Energy Sector Growth – Marine Energy Wales**

In a significant move aimed at boosting the marine energy sector, Marine Energy Wales and Morlais recently joined forces in North Wales, signing a Memorandum of Understanding to enhance their collaborative efforts. Marine Energy Wales, an initiative that supports the growth of the marine renewable energy sector in Wales and manager of the £2.7 million Marine Energy Test Area project, and Morlais, the 240MW consented tidal stream energy project off the coast of Anglesey, have joined forces to put Wales at the heart of a fast-growing global marine energy sector. The partnership aims to address common challenges, encourage business and research collaboration, as well as exchange knowledge and best practices, further positioning Wales at the forefront of the international marine energy industry.

## **Wavepiston and university partners get €2M grant for wave energy project – Offshore Energy**

Danish company Wavepiston and its two university partners have secured a government grant of over €2 million for a wave energy research project. Wavepiston, together with DTU – Technical University of Denmark and Aalborg University, secured the grant from the Energy Technology Development and Demonstration Programme (EUDP). The grant is for a collaboration project called ‘Composites, Hybrid testing and Simulations for a disruptive Wave Energy Converter (COHSI-WEC)’. The purpose of the project is to develop and test a lighter, cheaper, and more robust version of the Wavepiston energy collector. As a result, the partners expect to reach a competitive cost level right after the finalization of the project, with the first installation expected in 2026.

## **Wind Energy**

### **Biden-Harris Administration Approves Third Major Offshore Wind Project in U.S. Waters – U.S. Department of the Interior**

The Department of the Interior’s Bureau of Ocean Energy Management recently announced it has approved the plan for construction and operations of the Ocean Wind 1 project offshore New Jersey. Located about 13 nautical miles southeast of Atlantic City, the project will have an estimated capacity of 1,100 megawatts of clean energy – capable of powering over 380,000 homes – and is expected to create more than 3,000 good-paying jobs through development and a three-year construction cycle. The announcement marks the Biden-Harris administration’s third approval of a commercial-scale, offshore wind energy project in the United States, joining the Vineyard Wind project offshore Massachusetts and the South Fork Wind project offshore Rhode Island and New York, both now under construction and being built by union labor.

### **The Crown Estate sets out next steps on floating offshore wind off Welsh and South West coast – The Crown Estate**

The Crown Estate has set out how developers will be required to recognise the critical role of ports when bidding to build new floating offshore wind farms in the Celtic Sea, and how it intends to drive social value through the auction process. In an update, joined by the UK Government, The Crown Estate also set out the steps it is taking to help de-risk projects ahead of opening the leasing round to bidders, including addressing new spatial constraints that are the subject of an ongoing UK Government review. New aspects of the tender design will also require developers to set out more detail on how they plan to create lasting social and environmental value, with the introduction of questions linked to the UK Government’s social value model (SVM) focused on education, inclusion, environment and communities.

### **Ecowende to build most nature-friendly wind farm to date – Eneco**



Ecowende is planning to build a wind farm that will be in harmony with nature, with minimal impact on birds, bats and marine mammals, and with a thriving underwater world. The joint venture of Shell and Eneco is going to implement various innovations, large-scale mitigating and stimulating ecological measures, and an extensive above and under water monitoring and research programme. Ecowende aims to reduce the negative effects of its offshore wind farm through various innovations. Besides reducing the negative impact of its offshore wind farm, Ecowende also aims to implement ecological measures that could contribute to the development of wind farms that have a net positive impact.

### **Lhyfe announces that Sealhyfe, the world's first offshore hydrogen production pilot, produces its first kilos of green hydrogen in the Atlantic Ocean! – Lhyfe**

Lhyfe recently announced that its offshore hydrogen production pilot, known as Sealhyfe, was successfully towed 20 kilometres out into the Atlantic and connected with the SEM-REV power hub. As of 20 June 2023, the platform began producing its first kilos of offshore hydrogen, marking a decisive milestone for the future of the sector. It will be tested under real conditions, on a floating platform, which has been re-engineered to stabilise the production unit at sea (the WAVEGEM platform, engineered by GEPS Techno), and connected to Central Nantes' SEM-REV offshore testing hub operated by the OPEN-C Foundation, which is already linked with a floating wind turbine (FLOATGEN, engineered and operated by BW Ideol).

### **First power from Iberdrola's Saint-Brieuc offshore wind farm in France – Iberdrola**

The first green megawatts produced from Iberdrola's Saint-Brieuc offshore wind farm have been connected into the French national electricity grid by its manager, RTE. The project is Iberdrola's first in France, and only the second offshore wind project to produce power in the country. After a testing phase, the initial electricity to flow from the wind farm was connected to the grid on July 5th under the supervision of Iberdrola's maritime coordination center based in Kerantour (Côtes d'Armor). The production of the wind farm will increase as the 62 wind turbines are installed and commissioned in the months ahead.