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[Tethys](#) is an online knowledge hub that facilitates the exchange and dissemination of information on the environmental effects of wind and marine energy. The bi-weekly *Tethys Blast* highlights new publications in the [Tethys Knowledge Base](#); relevant announcements, opportunities, and upcoming events; and news articles of international interest. [ORJIP Ocean Energy](#) has partnered with [OES-Environmental](#) to provide additional content. Email [tethys@pnnl.gov](mailto:tethys@pnnl.gov) to contribute!

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## **Announcements**

### Collegiate Wind Competition

The US Department of Energy (DOE) is accepting applications for the [2023 Collegiate Wind Competition](#), which challenges interdisciplinary teams of undergraduate students to offer a unique solution to a complex wind energy project. Applications are due 1 June 2022.

### BOEM Seeking Comments

The US Bureau of Ocean Energy Management (BOEM) has published two Calls for Information and Nominations for possible offshore wind leasing off the coast of [Oregon](#) and in the [Central Atlantic](#). Submissions are due 28 June 2022.

### Calls for Abstracts

The [Call for Abstracts](#) for [OCEANS 2022 Hampton Roads](#) has been extended to 31 May 2022. The hybrid event will take place on 17-21 October 2022 in Virginia Beach, US and online.

The [Call for Abstracts](#) for the Renewable Energy Wildlife Institute's [14<sup>th</sup> Wind Wildlife Research Meeting \(WWRM\)](#) is now open through 6 June 2022. WWRM 2022 will take place on 15-17 November 2022.

The New York State Energy Research and Development Authority has reopened its [Call for Poster Abstracts](#) for the [3<sup>rd</sup> State of the Science Workshop on Wildlife and Offshore Wind Energy](#) through 13 June 2022. The workshop will take place 26-28 July 2022 in Tarrytown, US.

The [Call for Abstracts](#) for the [5<sup>th</sup> International Marine Science Communication Conference \(CommOCEAN 2022\)](#) is now open through 15 June 2022. CommOCEAN 2022 will take place from 30 November to 1 December 2022 in Sète, France and online.

### Calls for Papers

The *Journal of Marine Science and Engineering* is accepting submissions for several Special Issues, including “[Tidal and Ocean Current Energy](#)” (due 20 July 2022) and “[Wave, Tidal and Offshore Wind Energy Site Assessment and Monitoring](#)” (due 1 August 2022).

### Funding & Testing Opportunities

The French Government’s Ministry of the Sea has launched the Maritime Intervention Fund’s second [Call for Applications](#) to support the sustainable development of maritime activities, including coastal and blue economy development. Applications are due 31 May 2022.

The Interreg Europe programme, financed by the European Regional Development Fund, has launched its first [Call for Proposals](#) in the 2021-2027 period, and is looking for interregional cooperation projects that will support a greener Europe. Applications are due 31 May 2022.

The US Testing and Expertise for Marine Energy Research (TEAMER) program will be accepting [Request For Technical Support 7](#) applications from 1 June 2022 to 16 July 2022. Interested applicants are encouraged to start discussing their needs with test facilities now.

SATT LUTECH, with support from the Sorbonne University Alliance and the Ocean Institute, recently launched a [Call for Projects](#) to help accelerate the development of sustainable marine innovations from researchers of the LUTECH cluster. Applications are due 3 June 2022.

The Interreg North-West Europe Programme has launched its first [Call for Projects](#) in the 2021-2027 period, and is looking for transnational cooperation initiatives that can deliver concrete results for the North-West Europe area. The Call for Projects will close on 15 June 2022.

The US DOE and National Alliance for Water Innovation recently released a [Pilot Program Request for Proposals](#) to design, build, operate, and test pilot-scale desalination and water-reuse treatment systems that treat non-traditional water. Concept papers are due 29 June 2022.

### Student & Employment Opportunities

The University of Hull is recruiting two [Lecturers in Renewable Energy](#) to join the Energy and Environment Institute and deliver masters level teaching alongside other staff from across the University. Applications are due 3 June 2022.

MaREI, the Science Foundation Ireland Research Centre for Energy, Climate, and Marine is seeking a [Tidal Energy Research Fellow](#) to join the Sustainable and Resilient Structures Research Group based at National University of Ireland, Galway. Applications due 5 June 2022.

The Environmental Research Institute at the University of the Highlands and Islands (ERI-UHI) is looking for a [Marine Acoustic Engineer](#) to lead development of an integrated system for marine mammal mitigation from offshore developments (e.g. windfarm, oil & gas, harbour construction, etc.) on marine mammals. Applications due 13 June 2022.

The Schatz Center Research Center at Cal Poly Humboldt is seeking an [Offshore Wind Engineer or Scientist](#) to contribute to research and project work related to offshore wind on the U.S. Pacific Coast. Applications are due 17 June 2022.

Le Havre Normandie University is seeking a [Post-Doctoral Fellow](#) to join a France Energies Marines project focused on modelling the marine dune dynamics and scour processes around offshore wind turbine monopiles. Applications are due 18 June 2022.

National Renewable Energy Laboratory has an opening for a [Wildlife Researcher](#) to support the wind energy and wildlife portfolio. The successful candidate will be responsible for leading and supporting projects advancing monitoring and minimization technologies to improve siting and operational decisions for wind turbines and wind energy facilities.

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## Upcoming Events

### Upcoming Webinars

Net Zero Atlantic is hosting a webinar, “[Advancing environmental monitoring capabilities for the tidal industry in the Bay of Fundy](#)”, on 9 June 2022 from 1:00-2:00pm ADT (4:00-5:00pm UTC). During the webinar, partners from Net Zero Atlantic’s Pathway Program will report on the work they carried out as part of collaborative initiative; share notable findings, successes, and lessons learned; and discuss next steps for the tidal industry and monitoring. Register [here](#).

The Marine Energy Data Pipeline effort, led by Pacific Northwest National Laboratory (PNNL), recently released the latest version of [Tsdats](#), a data ingestion pipeline that can be used to read, process, run quality control, and convert raw data to standard formats. To learn more about Tsdats and its architecture, join the “[Marine Energy Data Pipeline Updates](#)” webinar on 14 June 2022, from 12:00-1:00pm PDT (7:00-8:00pm UTC). A recording will be made available on the Portal and Repository for Information on Marine Renewable Energy ([PRIMRE](#)).

The New York State Energy Research and Development Authority’s Offshore Wind Team is hosting a webinar, “[Learning from the Experts: Stakeholder Engagement & Offshore Wind](#)”, on 22 June 2022 from 1:00-2:00pm EDT (5:00-6:00pm UTC). During the webinar, Karp Strategies will discuss New York’s offshore wind energy stakeholders and disadvantaged communities.

Working Together to Resolve Environmental Effects of Wind Energy ([WREN](#)) is hosting a webinar, “[International Assessment of Priority Environmental Issues for Land-based and Offshore Wind Energy Development](#)”, on 29 June 2022 from 10:00-11:00am EDT (2:00-3:00pm UTC). The webinar will highlight results of stakeholder feedback from 294 responses across 28 countries. Panelists from several WREN member countries will provide their perspective on the assessment and priority research within the next 5-10 years. Register [here](#).

### Upcoming Conferences

[Simulation and Optimization for Renewable Marine Energies \(EMRSIM 2022\)](#) will take place 30 May to 2 June 2022 in Roscoff, France. Register [here](#).

The Pan American Marine Energy Association is hosting the [Pan American Marine Energy Conference \(PAMEC 2022\)](#) on 19-22 June 2022 in Ensenada, Mexico, with workshops on 17-18 June 2022. Register [here](#).

The Partnership for Research in Marine Renewable Energy (PRIMaRE) is hosting the [9<sup>th</sup> Annual PRIMaRE Conference](#) on 6-7 July 2022 in Cornwall, UK. Register [here](#).

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## **New Documents on *Tethys***

### **Marine Energy**

#### **[Tidal streams, fish, and seabirds: Understanding the linkages between mobile predators, prey, and hydrodynamics](#) – Couto et al. 2022**

Driven by the necessity to decarbonize energy sources, many countries are targeting tidal stream environments for power generation. However, these areas can act as foraging hotspots for marine top predators, such as seabirds. Thus, it is important to understand the ecological interactions influencing predator behavior and distribution in these areas, to determine the potential ecological implications of marine renewable devices. This study used concurrent observations of foraging seabirds, physical hydrodynamics, and prey presence across a tidal stream environment, before and after the installation of a commercial turbine array close to the island of Stroma, Scotland.

#### **[Triton Field Trials: Promoting Consistent Environmental Monitoring Methodologies for Marine Energy Sites](#) – Eaves et al. 2022**

Uncertainty surrounding the potential environmental impacts of marine energy (ME) has resulted in extensive and expensive environmental monitoring requirements for ME deployments. Recently, there have been more ME deployments and associated environmental data collection efforts, but no standardized methodologies for data collection. This hinders the use of previously collected data to inform new ME project permitting efforts. Triton Field Trials (TFiT), created at the Pacific Northwest National

Laboratory by the United States (U.S.) Department of Energy, explores ways to promote more consistent environmental data collection and enable data transferability across ME device types and locations.

### **From plate to plug: The impact of offshore renewables on European fisheries and the role of marine spatial planning** – Stelzenmüller et al. 2022

Offshore renewables (OR), such as offshore wind farms, are a key pillar to address increasing energy demands and the global transition to a carbon-free power sector. The transition to ever more occupied marine spaces, often facilitated by marine spatial planning (MSP), increases the conflict potential with free ranging marine sectors such as fisheries. Here, we quantified for the first time the direct impact of current and future OR development on fisheries across European seas. We defined direct impact as the average annual fishing effort (h) overlapping with OR planning sites and applied an ensemble approach by deploying and harmonising various fisheries data to optimise spatial coverage for the European seas.

## **Wind Energy**

### **Generalized changes of benthic communities after construction of wind farms in the southern North Sea** – Coolen et al. 2022

Over the last years, the development of offshore renewable energy installations such as offshore wind farms led to an increasing number of man-made structures in marine environments. Since 2009, benthic impact monitoring programs were carried out in wind farms installed in the southern North Sea. We collated and analyzed data sets from three major monitoring programs. Our analysis considered a total of 2849 sampling points converted to a set of biodiversity response metrics. We analyzed biodiversity changes related to the implementation of offshore wind farms and generalized the correlation of these changes with spatial and temporal patterns.

### **Factors affecting searcher efficiency and scavenger removal of bat carcasses in Neotropical wind facilities** – Barros et al. 2022

Bat fatalities at wind facilities have been reported worldwide, and environmental impact assessments depend on searches for carcasses around wind turbines to quantify impacts. Some of the carcasses may go undetected by search teams or be removed by scavengers during search intervals, so these biases must be evaluated and taken into account in fatality estimation. We investigated the influence of different factors on searcher efficiency and scavenger removal in a dry forest area in northeastern Brazil, one of the regions with the highest density of wind turbines in the Neotropics. We conducted searcher efficiency and scavenger removal trials around 34 wind turbines from January 2017 to January 2018.

### **Review of seabird monitoring technologies for offshore wind farms** – Nicholls et al. 2022

This Offshore Renewables Joint Industry Programme study has been carried out in order to provide information on current and planned monitoring technologies/systems that allow for collision and avoidance behaviour within the vicinity of turbines to be recorded. Data on seabirds and how they react to the presence of a wind farm is required to help address evidence gaps around empirical collision rates and reduce consenting risks for the offshore wind industry. Within our review we looked at monitoring devices currently deployed at offshore wind farms globally, but also reviewed devices installed at onshore wind farms which have the potential to be deployed offshore following modifications.

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## **News & Press Releases**

### **Marine Energy**

#### **[Thirteen Small Businesses Receive Funding to Advance Hydropower and Marine Energy Research and Development](#) – US DOE**

The U.S. DOE recently announced nearly \$2.6 million for 13 hydropower and marine energy projects as part of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) program. DOE's Water Power Technologies Office (WPTO) selected these small business-led projects that can help spur water power-focused innovation across United States. These projects—five focused on hydropower and eight focused on marine energy—will help achieve the Biden administration's goals of a carbon-free power sector by 2035 and net-zero-emissions economy by 2050.

#### **[Successful launch of first Dragon Class tidal powerplant](#) – Minesto**

Minesto, leading marine energy developer, has now successfully completed the first week of commissioning including satisfactory electricity production and verification of all core functionality with the new Dragon 4 tidal power plant in Vestmanna, Faroe Islands. The kite has generated first electricity to grid right "out of the box" and the commissioning plan has been executed as planned. "We are very pleased to announce that the first week of commissioning of Dragon 4 has been successfully completed. Every aspect of the project has been fulfilled according to plan and electricity has been successfully generated," said Martin Edlund, CEO of Minesto.

#### **[Canadian hydrokinetic test center to deploy ORPC's RivGen power system](#) – Ocean Renewable Power Company (ORPC)**

Supported by the Marine Energy Group/CanmetENERGY-Ottawa, the RivGen hydrokinetic power system will be deployed this summer. "ORPC's RivGen System has shown outstanding safety and reliability over the past three years in Igiugig, Alaska. We look forward to monitoring, testing and validating the system for the Canadian market at the Canadian Hydrokinetic Turbine Test Centre (CHTTC). We are confident that this deployment will accelerate awareness and acceptance among community leaders and policy makers," said Eric Bibeau, associate professor at University of Manitoba, and

CHTTC director. The objective of the CHTTC is to create a national hydrokinetic turbine testing location that allows companies to test hydrokinetic turbine systems.

### **Tidal blade facility at leading edge of green energy testing – University of Edinburgh**

The world's first rapid testing facility for tidal turbine blades, which researchers say can speed up development of marine energy technologies while helping to reduce costs, has opened for business. FastBlade's pioneering technology will stress test blades made from composite materials – which must withstand harsh ocean conditions for 20 years – more quickly, and using significantly less energy than any other facility of its kind, the team says. Based in Rosyth, Fife, the £4.6 million facility – which was officially opened by UK Government Minister for Scotland Malcolm Offord – aims to maintain Scotland's position at the forefront of tidal energy development. The facility's 75-tonne reaction frame is capable of exerting powerful forces on turbine blades more than 50 feet long.

### **Inna Braverman, CEO of Eco Wave Power, Conducts Site Visit at Port Adriano in Mallorca to Promote its First Wave Energy Project in Spain – Eco Wave Power**

Inna Braverman, CEO of Eco Wave Power, recently visited Port Adriano on the island of Mallorca, Spain, a month after the Company signed an agreement to install an up to 2 MW wave energy project at the location. The installation will be the first application of Eco Wave Power's wave energy technology in Spain and will produce clean electricity from waves to be used by Port Adriano, one of the most modern marinas in the Mediterranean and an exceptional base for superyachts. During her visit, Braverman met with the CEO of OCIBAR and the Port engineering team to tour and discuss the logistics and implementation plan. The project will commence with a detailed feasibility study and project licensing, which the parties aspire to secure by the end of 2022.

## **Wind Energy**

### **Biden-Harris Administration Proposes First-Ever California Offshore Wind Lease Sale – US BOEM**

In yet another step forward in the Biden-Harris administration's pursuit of a clean energy economy, the Department of the Interior recently announced next steps for and welcomed public comment on offshore wind lease sales in two regions on the Outer Continental Shelf offshore California. This is the first-ever offshore wind lease sale proposed on America's west coast. The Proposed Sale Notice includes three proposed lease areas in the Morro Bay Wind Energy Area off central California and two proposed lease areas in the Humboldt Wind Energy Area off northern California, totaling approximately 373,268 acres that have the potential to unlock over 4.5 gigawatts of offshore wind energy, power more than 1.5 million homes, and support thousands of new jobs.

### **Ørsted and ARK Nature to pioneer marine rewilding – combining urgent efforts on climate and biodiversity – Ørsted**

New partnership between Ørsted and ARK Nature pioneers testing the potential of rewilding principles to restore vital ocean biodiversity as we speed up the global transition to renewable energy. One initial focus is restoring shellfish reefs that are fundamental to ecological restoration in the North Sea, and to use learnings from the project to develop the best ways to scale up work globally to ensure an overall net-positive impact on nature when building offshore wind farms. Rewilding involves taking an ecosystem-wide view and creating conditions in which nature can recover and thrive, in the long-term. The approach has never before been trialled at scale in the marine environment where the challenge is particularly acute.

### **Sea Grant, DOE, NOAA Fisheries Fund Six Projects for the Coexistence of Offshore Energy with Northeast Fishing and Coastal Communities – US DOE**

The Northeast Sea Grant Consortium—in partnership with the U.S. DOE’s Wind Energy Technologies Office and Water Power Technologies Office, and National Oceanic and Atmospheric Administration (NOAA)’s Northeast Fisheries Science Center—recently announced six projects to advance social science and technology research on offshore renewable energy in the Northeast United States. This funding opportunity, first announced in March 2021, seeks to catalyze research for the coexistence of marine energy—including wind, current, tidal, and wave energies—with Northeast fishing and coastal communities. The selected projects were collectively awarded over \$1.1 million in federal funds, with each project matching 50% in non-federal funds.

### **New International Research Paves the Way for Offshore Wind to Deliver Biodiversity Net Gain – The Crown Estate**

A new international data collation exercise has brought together disparate seabed biodiversity data from across the North Sea into a central data set, helping to drive forward the sustainable expansion of offshore wind and to identify how biodiversity net gain can be delivered in tandem. The North Sea Net Gain study, led by The Crown Estate in partnership with the Dutch-led Rich North Sea programme, aims to ensure that decisions on the next generation of offshore wind farms will be based on the most comprehensive information and will bring biodiversity net gain. The project is funded by The Crown Estate’s £25 million investment into its Offshore Wind Evidence and Change Programme, and by The Rich North Sea programme.

### **North Sea offshore wind to help repower the EU – WindEurope**

The President of the European Commission Ursula von der Leyen, the German Chancellor Olaf Scholz and the Prime Ministers of Denmark, Belgium and the Netherlands met in the Port of Esbjerg (Denmark), one of Europe’s leading offshore wind ports, for an important offshore wind summit. Together they signed a declaration on a common vision for offshore wind and related infrastructure in the North Sea. In the Esbjerg Declaration the four Heads of State committed to jointly building 150 GW of offshore wind energy in the North Sea by 2050. They also pledged to collaborate more closely on joint offshore wind projects, energy islands and offshore grid infrastructure.