



**8 December 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**

### [Pacific Projects Finder](#)

The U.S. Offshore Wind Synthesis of Environmental Effects Research ([SEER](#)) project recently launched the [Pacific Coast Offshore Wind Environmental Research Project Finder](#) on Tethys! The new tool compiles information on environmental research projects related to offshore wind energy development along the U.S. Pacific Coast (California, Oregon, Washington), including key project details and links to relevant project outputs (e.g., reports, journal articles, datasets). If you would like to submit a project for inclusion, please complete this [survey](#).

### [Wind Turbine-Radar Interference RFI](#)

The U.S. Department of Energy's (DOE) Wind Energy Technologies Office (WETO), in collaboration with the interagency Wind Turbine-Radar Interference Mitigation Working Group, recently released a [Request for Information](#) (RFI) seeking input on challenges and opportunities relating to the co-existence of wind energy and radar. Responses are due by 12 January 2024.

### [Powering the Blue Economy: Power at Sea Prize](#)

The U.S. DOE's Water Power Technologies Office (WPTO) recently launched the [Powering the Blue Economy: Power at Sea Prize](#), which will award up to \$1.7 million to competitors to advance technologies that use marine energy to power ocean-based activities. Submissions for the Concept Phase are due 26 July 2024.

## Community Energy Innovation Prize

The U.S. DOE recently launched the [Community Energy Innovation Prize](#), a competition that will award cash prizes and mentorship opportunities to organizations supporting innovation, entrepreneurship, capacity building, and economic development in communities historically underrepresented in climate and energy technology funding. Clean Energy Ecosystem and Manufacturing Ecosystem Track applications are due on 2 February 2024.

## Calls for Abstracts

American Clean Power (ACP) has opened the [Call for Proposals](#) for speaking and poster presentations at the [2024 ACP Siting & Permitting Conference](#) through 5 January 2024. The conference will take place 11-13 March 2024 in Colorado Springs, Colorado, U. S.

The [Call for Abstracts](#) for [European Geophysical Union \(EGU24\)](#) closes on 10 January 2024. EGU24 will take place on 14-19 April 2024 in Vienna, Austria and online.

The [2024 State of the Science Workshop on Offshore Wind Energy, Wildlife, and Fisheries](#) is now accepting [proposals for symposia and side meetings](#) and [abstracts for oral and poster presentations](#) through 26 January 2024. The workshop will take place 16-19 July 2024 in Long Island, New York, U.S.

RenewableUK has opened the [Call for Papers](#) for [Global Offshore Wind 2024 \(GOW24\)](#) until 26 January 2024. GOW24 will take place on 18-19 June 2024 in Manchester, England.

The [Call for Abstracts](#) for the [International Conference on Ocean Energy \(ICOE 2024\)](#) is now open through 5 March 2024. ICOE 2024 will take place 17-19 September 2024 in Melbourne, Australia.

RenewableUK has also opened the [Call for Papers](#) for [Floating Offshore Wind 2024 \(FOW24\)](#) until 15 March 2024. FOW24 will take place on 9-10 October 2024 in Aberdeen, Scotland.

The [Call for Abstracts](#) for the [Asian Offshore Wind, Wave and Tidal Energy Conference \(AWTEC 2024\)](#) is now open through 20 March 2024. AWTEC will take place 20-24 October 2024 in Busan, Korea.

## Funding & Testing Opportunities

RWE has launched its first global [Floating Wind Co-use Competition](#), which is looking for innovative and sustainable solutions to promote co-existence with other sea users and biodiversity enhancement. Applications are due 31 December 2023.

France's National Offshore Wind Observatory has launched a [Call for Research Projects](#) to develop new knowledge on the marine environment and the impacts of offshore wind power on the environment. Applications for the second round are due 31 December 2023.

The U.S. DOE WPTO is accepting marine energy-related submissions for the [Small Business Innovation Research \(SBIR\) and Small Business Technology Transfer \(STTR\) programs](#), which offer competitively awarded grants to small businesses to support scientific excellence and technological innovation. The deadline to submit letters of intent is 3 January 2024.

The U.S. DOE recently announced up to \$10 million in funding for the [Inspiring Generations of New Innovators to Impact Technologies in Energy 2024 \(IGNIITE 2024\)](#) program, led by the Advanced Research Projects Agency-Energy (ARPA-E). The new program will support early-career scientists and engineers seeking to develop impactful new energy technologies. Concept papers are due 5 January 2024.

The National Offshore Wind Research & Development Consortium (NOWRDC) has partnered with Innovate UK to launch its [Innovations in Offshore Wind – Solicitation 3.0](#), which includes a challenge area on technologies that reduce offshore wind development's impacts on the marine biosphere. Proposals must contain both a US-led and UK-led scope and are due 10 January 2024.

### Career Opportunities

The Schatz Energy Research Center has openings for two [student research positions](#) related to offshore wind development, fisheries management, and salmonid ecology. Applications are due by 5:00pm PST on 8 December 2023.

Bangor University's School of Ocean Sciences is seeking a [Teaching & Research Lecturer in Marine Top-Predator Ecology and Conservation](#) to teach undergraduate and graduate levels and develop their own programme of research. Applications are due 12 December 2023.

The Environmental Fluid Mechanics group at the University of Washington is seeking a [PhD candidate](#) interested in wave-structure interaction, focusing on applications in marine renewable energy and coastal protection design. Applications are due 15 December 2023.

University College Dublin is offering a [PhD in Offshore Renewable Energy](#) for a motivated individual to conduct research to support the design of cables for floating offshore wind. Applications are due 15 December 2023.

IFREMER, the French Institute for Ocean Science, has launched a call for proposals for [post-doctoral fellowships](#) focused on wave energy conversion, wave tanks, and hydrodynamics of floating structures. Applications are due 8 January 2024.

The Coastal Studies Institute (East Carolina University Outer Banks campus) is seeking a [Program Manager](#) for a portfolio of projects related to marine energy device and component testing at the Jennette's Pier Wave Energy Test Center. Applications are due 15 January 2024.

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

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## Upcoming Events

### Upcoming Webinars

Marine Renewables Canada is hosting the second webinar in its [Ask an Expert webinar series](#), “Environmental Impacts & Effects of Offshore Wind”, on 14 December 2023 from 1:00-2:00pm EST (9:00-10:00pm UTC). Register [here](#).

Pacific Northwest National Laboratory (PNNL) is hosting its [Gold Experience Symposium](#) on 14 December 2023 for PNNL interns to present their research and discuss their internship experiences. Wind energy intern and researcher, Zara Miles, will share her work on the wind energy and wildlife resources available through [Tethys](#). Register [here](#).

The International Energy Agency’s Wind Task 34 ([WREN](#)) is hosting its 23<sup>rd</sup> webinar and first webinar in Spanish, “[Wind Energy and Wildlife: Perspectives from Latin America](#)”, on 10 January 2023 from 11:00am-12:00pm PST (7:00-8:00pm UTC). The webinar will feature speakers from Argentina, Chile, and Mexico. View the Spanish flyer [here](#) and register [here](#).

### Upcoming Conferences

The [Coastal Futures 2024 Conference](#) will take place on 24-25 January 2023 in London, England and online. Register [here](#).

The [6th Symposium of the Scottish Marine Energy Research Programme \(ScotMER\)](#) will take place 6-8 February 2024 online. ScotMER will also be hosting participatory workshops on socioeconomics and Scotland’s National Marine Plan 2.

[Ocean Sciences Meeting 2024](#) will take place 18-23 February 2024 in New Orleans, Louisiana, U.S. Early bird registration is available through 10 January 2024 [here](#).

### Upcoming Workshops

In addition to the PAMEC 2024 Conference Program, PAMEC in partnership with key partners, is hosting several workshops prior to the conference.

- Pacific Northwest National Laboratory is hosting an [Ocean Thermal Energy Conversion \(OTEC\) Workshop](#) on 19 January to review OTEC technologies, discuss potential environmental effects, and examine additional uses of deep cold water. Register [here](#).
- The PRIMRE team is also hosting a workshop on [Marine Energy Data Organized – PAMEC Workshop on PRIMRE and International Data Sharing](#) on 20 January to present on the resources available within PRIMRE and discuss opportunities for international databases to connect to the system. Register [here](#).
- Fundy Ocean Research Centre for Energy (FORCE) is also hosting a workshop on [Monitoring for Interactions Between Marine Animals and MRE Devices](#) on 20 January to present on environmental monitoring around wave and tidal devices. Register [here](#).

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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

#### [To what extent can decommissioning options for marine artificial structures move us toward environmental targets? – Knights et al. 2024](#)

A paucity of real-world case studies describing the impacts of decommissioning on the environment make decision-making with respect to which option(s) might be optimal for meeting international and regional strategic environmental targets challenging. To address this gap, we draw together international expertise and judgment from marine environmental scientists on marine artificial structures as an alternative source of evidence that explores how different decommissioning options might ameliorate pressures that drive environmental status toward (or away) from environmental objectives. Synthesis reveals that for 37 United Nations and Oslo-Paris Commissions (OSPAR) global and regional environmental targets, experts consider repurposing or abandoning individual structures, or abandoning multiple structures across a region, as the options that would most strongly contribute toward targets.

#### [Modeling Morphodynamic Impacts and Optimization of Marine Hydrokinetic Arrays in Shallow Offshore Environments – Moghadam & Ortiz 2023](#)

Marine hydrokinetic (MHK) devices hold the promise of expanding renewable energy production by tapping into the power of waves and currents for electricity generation. However, these devices remain in the developmental stage, necessitating research to understand their environmental impacts, lower operational costs, and prevent equipment failures. In this study, we investigate various MHK array configurations to gain insights into their effects on wave patterns, water flow, and sediment conditions, considering both short-term and long-term morphodynamic changes under average and extreme conditions in shallow offshore environments. Our objectives encompass understanding the influence of mean and extreme environmental conditions on MHK devices, evaluating their impact on the bathymetry of the ocean floor, and exploring the role of different array configurations in morphodynamic evolution.

#### [Impact of hydrodynamics on community structure and metabolic production of marine biofouling formed in a highly energetic estuary – Portas et al. 2023](#)

Biofouling is a specific lifestyle including both marine prokaryotic and eukaryotic communities. Hydrodynamics are poorly studied parameters affecting biofouling formation. This study aimed to investigate how water dynamics in the Etel Estuary (Northwest Atlantic coasts of France) influences the colonization of artificial substrates.

Hydrodynamic conditions, mainly identified as shear stress, were characterized by measuring current velocity, turbulence intensity and energy using Acoustic Doppler Current Profiler. One-month biofouling was analyzed by coupling metabarcoding (16S rRNA, 18S rRNA and COI genes), untargeted metabolomics (liquid chromatography coupled with high-resolution mass spectrometry, LC-HRMS) and characterization of the main biochemical components of the microbial exopolymeric matrix.

## **Wind Energy**

### **[How far are birds, bats, and terrestrial mammals displaced from onshore wind power development? – A systematic review – Tolvanen et al. 2023](#)**

Wind power is a rapidly growing source of energy worldwide. It is crucial for climate change mitigation, but it also accelerates the degradation of biodiversity through habitat loss and the displacement of wildlife. To understand the extent of displacement and reasons for observations where no displacement is reported, we conducted a systematic review of birds, bats, and terrestrial mammals. Eighty-four peer-reviewed studies of onshore wind power yielded 160 distinct displacement distances, termed cases. For birds, bats, and mammals, 63%, 72%, and 67% of cases respectively reported displacement. This review provides information on distance thresholds that can be employed in the design of future wind energy projects. However, most studies assessed the effects of turbine towers of <100 m high, while considerably larger turbines are being built today.

### **[Numerical Study of Turbulent Wake of Offshore Wind Turbines and Retention Time of Larval Dispersion – Ajmi et al. 2023](#)**

Offshore Wind Farm (OWF) foundations are considered to have a potential impact on the larval dispersion of benthic species. This study focused on OWFs' impacts on larval dispersion, considering factors such as the foundation type, flow velocity, flow direction, and release type using numerical modelling. At the scale of monopile and gravity-based foundations, a combination of two numerical models was used: the Eulerian model (OpenFOAM), solving the 3D Navier–Stokes equations for computing the hydrodynamics, and the Lagrangian model (Ichthyop), solving the advection–diffusion equation for the larval dispersion simulations. The validation model tests were evaluated with experimental data as a first step of the study.

### **[Incidental eagle carcass detection can contribute to fatality estimation at operating wind energy facilities – Hallingstad et al. 2023](#)**

Risk of birds colliding with wind turbines, especially protected species like bald eagle and golden eagle in the U.S., is a fundamental wildlife challenge the wind industry faces when developing and operating projects. The U.S. Fish and Wildlife Service requires wind energy facilities that obtain eagle take permits document permit compliance through fatality monitoring. If trained Operations and Maintenance (O&M) staff can reliably detect and report carcasses during their normal routines, and their detection probability can be estimated, then their 'incidental detections' could contribute substantially towards



demonstrating permit compliance. Our primary objective was to quantify incidental detection of eagle carcasses by O&M staff under a variety of landscape contexts and environmental conditions throughout a single year.

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## **News & Press Releases**

### **Marine Energy**

#### **[Orbital Marine Power and Euclaire Tidal partner to unlock Canadian tidal stream opportunity](#) – **Orbital Marine Power****

Orbital Marine Power, the renewable energy company focused on the development and global deployment of its pioneering floating tidal stream turbine technology, has been named as Euclaire Tidal's technology partner at the Fundy Ocean Research Centre for Energy (FORCE). The agreement covers one 2.4MW O2X machine to be deployed on the FORCE facility in the fast flowing waters of the Minas Passage. Orbital's floating tidal stream technology has been confirmed as the device that can be deployed, subject to the required regulatory approvals, following a licence transfer and technology change by Nova Scotia Department of Natural Resources and Renewables (NRR), signed earlier this year. The final timing of deployment will be confirmed after a Canadian Department of Fisheries and Oceans (DFO) assessment process has been completed.

#### **[Oscilla Power Successfully Launches Demonstration Scale Triton™ Wave Energy Converter \(WEC\) on Maine Coast](#) – **Yahoo Finance****

Wave energy technology developer Oscilla Power, the University of Maine's Advanced Structures & Composites Center (ASCC) and the Maine Maritime Academy successfully deployed a 1/6 scale prototype of Oscilla's 1 MW Triton™ wave energy converter (WEC) in Castine Harbor. The goal of this project is to confirm the design and performance of Triton in a real-world operating environment, helping to inform the ongoing engineering design of Oscilla's full-scale, 1 MW Triton WEC in 2024. Due to the unique wave conditions in Castine the 1/6 scaled unit will operate in the same manner as a full-scale unit during this 12-week test. Winter wave conditions in Castine are approximately 1/6 the size of waves experienced on the U.S. West Coast, and therefore provide an ideal representative ocean environment to evaluate the scaled Triton system.

#### **[TotalEnergies joins CorPower Ocean's Pilot Access Program.](#) – **CorPower Ocean****

CorPower Ocean has developed an innovative anchored Wave Energy Converter (WEC) that harnesses energy from ocean waves. The wave motion is converted by a gearbox into rotational motion, and into electricity via generators inside the buoy. French multi-energy major, TotalEnergies is joining CorPower Ocean's Pilot Access Program to evaluate this technology as one of the solutions for decarbonization. The Pilot Access Program will provide TotalEnergies deep insights into CorPower Ocean's wave technology and its operation through the HiWave-5 pilot at the Aguçadoura site in northern Portugal. During

the pilot program operational data will be collected on the first full scale C4 WEC device in Stage 4, followed by a CorPack wave cluster demonstration in Stage 5 with three additional C5 WEC devices.

### **New guide unveils best practices for local community engagement in ocean energy projects** **– Ocean Energy Europe**

Inclusive, frequent and transparent local community engagement reinforces local support for ocean energy projects, according to a new guide launched today. Ocean energy is generally very welcomed by locals as a means to create local jobs and fight climate change. Adopting the best practices used in ocean energy projects today will help future projects build trust, pre-empt opposition and deploy in accordance with the local community. Authored by a sectoral advisory body, the European Technology and Innovation Platform for Ocean Energy (ETIP Ocean), the guide aims to help ocean energy developers design their own community engagement strategy. It lays out the best practices used in existing ocean energy projects, identified through a first ever study focusing on local community engagement in the ocean energy sector, carried out by France Énergies Marines.

### **Global OTEC and 2H Offshore Firm Collaboration for OTEC Development** – Global OTEC

Global OTEC and 2H Offshore have signed an agreement to combine their expertise in Ocean Thermal Energy Conversion (OTEC) technology and marine engineering. The partnership, formalised through a Memorandum of Understanding (MoU) signed in London last week, will focus on the development of floating OTEC, with emphasis on Water Intake Riser (WIR) systems that are essential for the technology to operate offshore. This collaboration is a significant step towards making OTEC commercially viable worldwide, with the potential to change the energy landscape in Small Island Developing States (SIDS), currently powered almost exclusively by fossil fuels.

## **Wind Energy**

### **Governor Hochul Announces South Fork Wind Delivers First Offshore Wind Power to Long Island** – New York State

Governor Kathy Hochul recently announced the successful delivery of clean power to Long Island from the first operational wind turbine at South Fork Wind, marking a historic milestone of the first utility-scale offshore wind farm in federal waters to begin “powering up” in the United States. The project has completed the installation of two turbines, with one operational, approximately 35 miles off Montauk with all 12 turbines expected to be installed by early 2024. The announcement supports progress towards the State’s Climate Leadership and Community Protection Act goal to install nine gigawatts of offshore wind by 2035. This milestone, which comes just two weeks after the installation of New York’s first offshore wind turbine, was celebrated in East Hampton



alongside joint-venture partners Ørsted and Eversource, state, county and local officials, advocates and community members.

### **Floating Power Plant formalizes €26M grant agreement with EU for Seaworthy project – Offshore Energy**

Danish renewable energy developer Floating Power Plant has signed a €26 million grant agreement with the European Commission’s Innovation Fund for the Seaworthy project, which integrates floating wind, wave energy, and hydrogen production. The Seaworthy project, short for Sustainable Dispatchable Energy Enabled by Wave-Wind Offshore platforms with Onboard Hydrogen, has been supported by the Innovation Fund earlier in 2023, along with Simply Blue Group’s Saoirse wave energy scheme. The project integrates floating wind and wave resources to generate electricity while utilizing excess power to produce and store hydrogen, and is expected to mark a pivotal breakthrough in the pursuit of dispatchable renewable power offshore and the decarbonization of hard-to-abate areas.

### **Coalition of Philanthropic Funders Unveil More Than \$250 Million Ocean Resilience and Climate Alliance to Supercharge Ocean-Based Climate Solutions – Bloomberg Philanthropies**

At COP28 at the Ocean Pavilion, Bloomberg Philanthropies CEO Patti Harris, U.S. Special Presidential Envoy on Climate John Kerry, UN Secretary General’s Special Envoy for the Ocean Peter Thomson, and others announced the formation of Ocean Resilience and Climate Alliance (ORCA) by leading climate and ocean institutions. With an initial pledge of more than \$250 million, Ballmer Group, Bloomberg Philanthropies, Builders Vision, the David and Lucile Packard Foundation, the Gordon and Betty Moore Foundation, the Jeremy and Hannelore Grantham Environmental Trust, Oak Foundation, Oceanskind, Paul M. Angell Family Foundation, Rivian Foundation, Rockefeller Brothers Fund, Vere Initiatives, and others have come together to form a funder collaborative focused on advancing ocean-based solutions to fight climate change.

### **California, the EU Commission, Panama and Brazil join the Global Offshore Wind Alliance launched by Denmark, GWEC and IRENA – Global Wind Energy Council (GWEC)**

The Global Offshore Wind Alliance (GOWA) has welcomed Brazil, California, the EU Commission and Panama into its membership at a ceremony at COP28 in Dubai. The expansion adds 65 GW of declared target capacity to the Alliance, and positions it to play a crucial role in the expansion of offshore wind. The Global Offshore Wind Alliance is focused on providing the support countries need to turn ambitions into truly transformative action, which ensures offshore wind delivers on its potential as a key tool in the fight against climate change. COP28 has seen at least 119 countries, so far, pledge to triple renewable energy capacity by 2030 – this will require the rapid expansion of offshore wind as a key tool in the new energy system that will be built this decade.

GOWA's ambition is to drive the installation of at least 380 GW in 2030 and 2000 GW in 2050 in order to support the global energy transition and reach climate neutrality.

### **Ørsted secures 1.6 GW electricity business license for offshore wind project off the coast of Incheon, Korea – Ørsted**

Ørsted has been granted a 1.6 GW electricity business license (EBL) by the Ministry of Trade, Industry & Energy of Korea for an offshore wind project located 70 km off the coast of Incheon City. The license grants Ørsted exclusive development rights for its gigawatt-scale Incheon offshore wind project, which is set to become the largest in Korea on completion and will contribute to the country's goal of being carbon-neutral by 2050. The Ørsted project has the potential to support Incheon City's net-zero target with a capacity to provide renewable energy to over a million Korean households while reducing carbon emissions by approximately 4 million tonnes annually. The next steps for Ørsted's Incheon offshore wind project include environmental impact assessments, site investigations, and preparations for participating in Korea's annual fixed-price wind auction.