



**28 April 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**

### [Tethys Wind User Review](#)

We want your feedback! Please complete this year's short [Tethys Wind User Review survey](#) by 26 May 2023 to help us understand how the wind-wildlife community uses Tethys and determine how we can continue to expand and improve the site!

### [Internship Applications Open](#)

The U.S. Department of Energy's (DOE) Office of Science has opened Fall term applications for the [Science Undergraduate Laboratory Internships \(SULI\)](#) and [Community College Internships \(CCI\)](#) programs, and [Visiting Faculty Program \(VFP\)](#). Applications are due on 25 May 2023.

### [Marine Energy Career Panel Recording](#)

Pacific Northwest National Laboratory and National Renewable Energy Laboratory recently hosted a [Marine Energy Career Panel](#) where staff across various disciplines discussed their careers, including their background, education, and current projects. Watch the recording [here](#).

### [BOEM Seeking Public Input](#)

The U.S. Bureau of Ocean Energy Management (BOEM) recently published its [Gulf of Maine Call for Information and Nominations](#) for commercial wind energy development offshore Massachusetts, New Hampshire, and Maine, and is seeking public comments by 12 June 2023.

## Calls for Abstracts

The deadline for [Call for Abstracts](#) for the [Conference on Wind Energy and Wildlife \(CWW 2023\)](#) has been extended to 30 April 2023. CWW 2023 will take place 18-22 September 2023 in Šibenik, Croatia. Early bird registration is now available until 31 May 2023.

The [Call for Abstracts](#) for [OCEANS 2023 Gulf Coast](#) has been extended through 1 May 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 12 May 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 is now open for the [Structures in the Marine Environment \(SIME\) 2023 Conference](#) until 12 May 2023. SIME will take place on 28 June 2023 in Glasgow, Scotland.

The [Call for Abstracts](#) for the [North American Wind Energy Academy \(NAWEA\)/WindTech 2023 Conference](#) is now open through 19 May 2023. NAWEA/WindTech will take place from 30 October to 1 November 2023 in Broomfield, Colorado, U.S.

The [Call for Sessions and Town Hall Proposals](#) for [Ocean Sciences Meeting 2024](#) is now open through 24 May 2023. Ocean Sciences Meeting 2024 will take place from 18-23 February 2024 in New Orleans, Louisiana, U.S. and online.

The [Call for Extended Abstracts](#) for the [Pan American Marine Energy Conference \(PAMEC 2024\)](#) is now open through 26 June 2023. PAMEC 2024 will take place on 22-24 January 2024 in Barranquilla, Columbia.

## Funding & Testing Opportunities

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. Applications are due 19 May 2023.

The U.S. DOE's Office of Clean Energy Demonstrations recently announced \$15 million for the [Energizing Rural Communities Prize](#) to help rural communities build capacity needed for clean energy development and deployment. Submissions for the first round are due 24 May 2023.

The U.S. Ocean Energy Safety Institute (OESI) has launched a [Request for Proposals](#) focused on two target areas: small-scale marine energy solutions that enhance the safety, security, and sustainability of offshore wind and oil & gas operations; and utility-scale marine energy solutions that enhance marine energy operations. Submissions are due 19 June 2023.

The U.S. Testing Expertise and Access for Marine Energy Research (TEAMER) program, sponsored by the DOE's Water Power Technologies Office (WPTO), is now accepting [Request for Technical Support \(RFTS\) 10](#) applications until 7 July 2023.

## Student & Employment Opportunities

AECOM is looking for a [Marine Environment Consultant](#) to join its Environment and Sustainability team in Madrid, Spain and provide consulting services in various fields. ABP is seeking an [Environmental Scientist](#) to manage and contribute to environmental assessments, marine policy and planning studies, and a wide range of related projects.

Pacific Northwest National Laboratory is seeking a [Blue Economy Specialist](#) with a strong background in the blue economy to support regional and national maritime sectors accelerate maritime innovation and sustainability. Applications are due by 29 April 2023.

The University of Caen Normandy is advertising a [Postdoctoral Position](#) focused on reviewing the impacts of offshore wind farms on marine and coastal biodiversity and social ecosystems. Applications are due 10 May 2023.

The University of Aberdeen is advertising a [funded PhD project](#) (for UK students only) focused on characterizing and simulating entanglement scenarios between various types of fishing gear and floating offshore wind technology. Applications are due 14 June 2023.

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## **Upcoming Events**

### Upcoming Webinars

The International Energy Agency Wind Task 34, Working Together to Resolve Environmental Effects of Wind Energy ([WREN](#)), is hosting a webinar, [Influence of Offshore Wind Turbines on Marine Habitats and Ecosystems](#), on 3 May 2023 from 10:00-11:00am EDT (2:00-3:00pm UTC). The webinar will discuss the state of the science on the impacts of offshore wind turbines on the marine environment, and how researchers monitor and minimize impacts. Register [here](#).

WREN is also hosting a webinar, [Compensating the Impacts of Offshore Wind Energy on Birds](#), on 16 May 2023 from 11:00am-12:00pm EDT (3:00-4:00pm UTC). The webinar will provide an overview of the mitigation hierarchy, and discuss compensation measures from the United Kingdom and the United States. Register [here](#).

The Regional Synthesis Workgroup of the Offshore Wind Environmental Technical Working Group ([E-TWG](#)) is hosting a public webinar on 24 May 2023 from 11:00am-1:00pm EDT (3:00-5:00pm UTC) to solicit stakeholder feedback on the draft document, “Responsible Practices for Regional Wildlife Monitoring and Research in Relation to Offshore Wind Energy Development”. A public feedback period will follow. Register [here](#).

### Upcoming Workshop

The Special Interest Group for Underwater Acoustics (SIGUA) is hosting an [Underwater Acoustics Data Challenge Workshop](#) on 11-12 September 2023 in Bath, England. The hackathon

style event will task small teams to explore solutions to research challenges set by industry, including marine acoustic sensing and passive acoustic detection and tracking.

### Upcoming Forum

The Marine Scotland Directorate is hosting the first National Marine Planning Forum on 15 June 2023 to provide a wider stakeholder engagement platform to help inform stakeholders about the broader picture of National Marine Plan 2 development. Register [here](#) to attend in person by 5 May 2023 or [here](#) to attend virtually.

### Upcoming Conferences

Offshore Wind California is hosting the [Pacific Offshore Wind Summit 2023](#) on 8-10 May 2023 in Sacramento, California, U.S.

The [Sustainable Management of UK Marine Resources Conference 2023](#) will take place on 16-18 May 2023 in Bristol, England and online. Register [here](#) to attend in person by 5 May 2023.

American Clean Power is hosting [CLEANPOWER 2023 Conference & Exhibition](#) from 22-24 May 2023 in New Orleans, Louisiana, U.S. 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**

#### **[Modeling the acoustic noise from a wave energy converter farm and its impact on marine mammals at the PacWave South site, offshore Newport Oregon – Harding et al. 2023](#)**

Marine hydrokinetic devices, such as wave energy converters (WECs), can unlock untapped energy from the ocean's currents and waves. Acoustic impact assessments are required to ensure that the noise these devices generate will not negatively impact marine life, and accurate modeling of noise provides an *a priori* means to viably perform this assessment. We present a case study of the PacWave South site, a WEC testing site off the coast of Newport, Oregon, demonstrating the use of ParAcousti, an open-source hydroacoustic propagator tool, to model noise from an array of 28 WECs in a 3-dimensional (3-D) realistic marine environment. Sound pressure levels are computed from the modeled 3-D grid of pressure over time, which we use to predict marine mammal acoustic impact metrics (AIMs).

#### **[Characterizing seabed sediments at contrasting offshore renewable energy sites – Amjadian et al. 2023](#)**

Although there are many types of renewable energy technology, ocean renewable energy, including established offshore wind, and novel wave and tidal energy converters, offers many opportunities due to the abundance of the resource, availability of sea space, and (for tidal) predictability. However, the extraction of energy from the ocean environment will influence sediment dynamics and morphodynamics at various temporal and spatial scales. Detailed knowledge of seabed properties is also important for device installation, affecting foundation design and cabling. In this study, 36 seabed sediment samples were collected across a region of the Irish Sea extending from the west of Anglesey into Liverpool Bay up to a maximum distance of around 35 km offshore – a region where there are many existing and planned ocean renewable energy projects.

### **[A new strategic framework to structure Cumulative Impact Assessment \(CIA\) – Declerck et al. 2022](#)**

In order to alleviate climate change consequences, UK governments are pioneering offshore energy developments with increasing commitment. To ensure the compatibility of such large-scale developments with nature conservation obligations, cumulative effects need to be evaluated through cumulative impact assessments (CIA). However, by excluding climate change impacts, CIA lacks spatio-temporal appropriate baselines linking ecosystem components (e.g. physical indicators) to population dynamics which leads to uncertain predictions at populations levels. This study presents an overview of a framework for CIA using a holistic and pragmatic ecosystem approach based on spatio-temporal Bayesian network in order to identify pressure pathways, keystone components, ecosystem connectivity and resilience as well as population-level changes.

## **Wind Energy**

### **[Offshore Wind Energy and Marine Biodiversity in the North Sea: Life Cycle Impact Assessment for Benthic Communities – Li et al. 2023](#)**

Large-scale offshore wind energy developments represent a major player in the energy transition but are likely to have (negative or positive) impacts on marine biodiversity. Wind turbine foundations and scour protection often replace soft sediment with hard substrates, creating artificial reefs for sessile dwellers. Offshore wind farm (OWF) furthermore leads to a decrease in (and even a cessation of) bottom trawling, as this activity is prohibited in many OWFs. The long-term cumulative impacts of these changes on marine biodiversity remain largely unknown. This study integrates such impacts into characterization factors for life cycle assessment based on the North Sea and illustrates its application. Our results suggest that there are no net adverse impacts during OWF operation on benthic communities inhabiting the original sand bottom within OWFs.

### **[Effects of Wind Power Development on Reindeer: Global Positioning System Monitoring and Herders' Experience – Eftestøl et al. 2023](#)**

Testing and documenting effects of wind farm (WF) infrastructure on wildlife are crucial considering increasing development throughout Scandinavia, especially for reindeer,

which require large areas for grazing and are vulnerable to disturbances. We present results from 2011 to 2019 for semidomesticated reindeer tracked with Global Positioning System (GPS) transmitters, along with herders' knowledge about reindeers' habitat use and changes following WF development within the Raggonjarga reindeer district summer range in Finnmark, Norway. We tracked up to 36 females (ranging from 19 to 36 individuals per year), from their arrival in the study area in April to their departure in the end of October. We evaluated habitat use before, during, and after WF development at the home range and landscape scales.

## **[Effective Stakeholder Engagement for Offshore Wind Energy Development: The State of New York's Fisheries and Environmental Technical Working Groups](#) – Brunbauer et al.**

**2023**

The offshore wind (OSW) energy industry is rapidly developing in the United States. New federal mandates require at least 30 GW of OSW by 2030. With the largest goal in the eastern United States, the state of New York seeks to advance OSW in a way that is both environmentally and socially responsible as well as cost-effective. To achieve this, New York developed technical working groups (TWGs) in 2017 focused on critical topics relating to OSW energy development, including the Fisheries Technical Working Group and Environment Technical Working Group (F-TWG and E-TWG; collectively, “the TWGs”). This paper highlights the OSW stakeholder engagement process and approach implemented by New York through the development of TWGs, as a means of identifying needs for environmental and fisheries resources to inform responsible OSW development within New York and regionally across the eastern United States.

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## **News & Press Releases**

### **Marine Energy**

#### **[Sigma Energy's wave energy prototype shows no adverse effects on marine fauna](#) – Offshore Energy**

The University of Montenegro's Institute of Marine Biology has assessed the impacts of Sigma Energy's wave energy device on the ecosystem at the deployment site in the Adriatic Sea, finding it had no negative effects on the diversity of marine organisms. The University of Montenegro's Institute of Marine Biology conducted research on the macrozoobenthos organisms at Sigma Energy's wave energy deployment site offshore the city of Bar in Montenegro. The report found that the wave energy testing activities do not have any negative impacts on the diversity of macrozoobenthos organisms living at the deployment location or in its close proximity. To remind, Slovenia-based Sigma Energy deployed its full-scale 30kW wave energy device in the Adriatic Sea, which has shown very promising operating results. Check out the video!

#### **[Turks and Caicos Islands Start to Explore OTEC for Renewable Power Generation](#) – Global OTEC**

The Turks and Caicos Islands (TCI), an archipelago of 40 low-lying coral islands in the Atlantic Ocean, is building on its ‘Vision 2040’ policy by exploring possible Ocean Thermal Energy Conversion (OTEC) sites. Currently, the country is powered almost exclusively via diesel generators. As so, the population pays not only for the generation and distribution but also for the fuel factor, which in recent years has significantly increase energy bills due to global events. Like other tropical island states, TCI faces the highest energy costs in the world and depends on new sources of power for its energy needs and to achieve its goal of reaching 33% renewable energy by 2040. Having a vast exclusive economic zone of ocean space many multiples the area of their land waters and being in the tropics, TCI is well suited for OTEC.

### **Sustainable Marine drops Nova Scotia tidal energy project as federal government faces backlash over missed opportunity – Offshore Energy**

Sustainable Marine, a company that achieved an important milestone for Canada with a first-ever grid-connected floating tidal energy platform in Grand Passage, has decided to withdraw its application for the development of projects in the Bay of Fundy due to the lack of a transparent regulatory process for tidal energy industry. In March 2023, Sustainable Marine’s Canadian subsidiary advised Fisheries and Oceans Canada that it was withdrawing its application, and would not be continuing the development of the Pempaq instream tidal energy project at Fundy Ocean Research Centre for Energy (FORCE). Sustainable Marine developed technology based on floating tidal energy turbines, with one unit already operational and supplying power to the power grid in Digby County in Nova Scotia.

### **Investing in the Planet Means Investing in Water Power—And People – U.S. DOE WPTO**

Water power, including hydropower and marine energy, is a steadfast renewable that will play a key role in building a reliable and resilient clean energy power grid and decarbonizing the economy. And it’s people—especially the water power workers, researchers, and entrepreneurs of today and tomorrow—who will lead the energy transition. This Earth Day’s theme is “Invest in Our Planet.” At the U.S. Department of Energy’s Water Power Technologies Office (WPTO), investing in the planet means investing in people. And this year, WPTO has more initiatives underway and resources available than ever before, all focused on encouraging the growth of the hydropower and marine energy industries.

### **Arrecife Energy starts wave energy device tank trials – Offshore Energy**

Bilbao-based marine energy start-up Arrecife Energy Systems has started testing the scale model of its wave energy device as part of the second phase of EuropeWave project. Inspired by the behavior of coral reefs absorbing the energy of the breaking waves, Arrecife Energy’s device captures power from the movement of the ocean waves using cross-flow turbines located on the platform. Following the competitive first phase of EuropeWave’s pre-commercial procurement (PCP) program, five wave energy projects have been selected to develop their concepts further in the next phase including

Arrecife Energy's Trimaran wave energy device. As part of the second phase of EuropeWave project, the company has started testing its 1:20 scale model at IHCantabria research center in Spain.

## **Wind Energy**

### **[European countries pledge huge expansion of North Sea wind farms](#) – The Guardian**

Nine European countries have pledged to multiply the capacity of offshore wind farms in the North Sea by eight times current levels before 2050, turning it into what Belgium's energy minister called "Europe's biggest green power plant". The French president, Emmanuel Macron, the German chancellor, Olaf Scholz, and the European Commission chief, Ursula von der Leyen, announced the plan with the prime ministers of Belgium, the Netherlands, Ireland, Denmark and Luxembourg. Norway's prime minister and Britain's energy security minister, Grant Shapps, also committed at the summit in Ostend, Belgium, on Monday to build more wind farms, develop "energy islands" – connected renewable generation sites at sea – and work on carbon capture projects. The nine countries aim to boost their combined North Sea offshore wind capacity to 120GW by 2030 and 300GW by 2050.

### **[Murphy Administration Announces Funding for Offshore Wind Environmental Studies, Entry into Responsible Offshore Wind Science Alliance](#) – New Jersey Department of Environmental Protection**

The New Jersey Department of Environmental Protection and New Jersey Board of Public Utilities today announced nearly \$2 million in additional funding for efforts to ensure the safe and ecologically responsible development of offshore wind energy to combat the worsening impacts of climate change. Projects funded through the state's Offshore Wind Research & Monitoring Initiative (RMI) include deployment of a whale detection buoy, a study to evaluate general species diversity in offshore wind development areas, and another to better understand offshore movement of harbor seals. Funding is also being provided for New Jersey's entry into the Responsible Offshore Science Alliance (ROSA), a nonprofit organization leading a collaborative effort advancing fish and fisheries research related to offshore wind.

### **[TenneT and National Grid collaborate on proposed first-of-a-kind Anglo-Dutch electricity link](#) – TenneT**

TenneT and National Grid have recently announced plans for a first-of-its-kind electricity link that will connect offshore wind between the Netherlands and the UK. LionLink, which was included as a key project in the North Sea Energy Declaration, could connect Dutch wind farms to the electricity grids of both countries via a subsea high voltage electricity cable, called a multi-purpose or hybrid interconnector. The development would be the first of its kind for the UK and the Netherlands, and the first step towards an integrated electricity grid in the North Sea. Welcoming the announcement at the North Sea Summit in Ostend (Belgium), Dutch Energy Minister, Rob Jetten and UK Secretary



of State for Energy Security and Net Zero, Grant Shapps expressed their support for the LionLink project, recognising it as an important step milestone in realising the full potential of the North Sea as Europe's green energy powerhouse.

### **New bird radar will improve coexistence between birds and offshore wind – NorthWind**

NorthWind partner NINA installed a new radar system to map bird movements and reduce the impact of offshore wind turbines on migratory birds. The radar, stationed at Lista Bird Observatory in Agder, tracks bird movements up to ten kilometers away and aims to identify the main migration routes along the coastline. The radar system is the second of its kind in Norway and will be used to study bird migration patterns during spring and autumn. By understanding these patterns, researchers hope to minimise interactions between migratory birds and wind turbines. The radar will also help identify critical resting spots for birds along migration routes, which should ideally be avoided when constructing wind power facilities. The knowledge gained from this project is expected to benefit both authorities and the wind power industry.

### **Amazon Web Services, Accenture and WindEurope launch digital tool to accelerate permitting – WindEurope**

Permitting remains the biggest bottleneck for deploying wind at scale. Approximately 80 GW of wind power capacity is currently stuck in permitting procedures across Europe. It takes too long for developers to receive permits – up to nine years in some countries. This is incompatible with the EU's climate & energy ambitions – last year the EU only installed 16 GW of new wind while it needs 31 GW every year on average to 2030 to meet its targets. Amazon Web Services (AWS), Accenture and WindEurope have come together to work towards a solution and have developed EasyPermits, a digital permitting tool that streamlines the approval process for wind farms in Europe. The EasyPermits platform offers a single location for stakeholders to automate workflows, increase accuracy for wind permit applications and enhance process transparency. This should all contribute to a more streamlined permitting process.