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[Tethys](#) is an online knowledge base that facilitates the exchange and dissemination of information on the environmental effects of wind and marine renewable energy (MRE). 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.

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Announcements

2020 State of the Science Report & Webinars

The [OES-Environmental 2020 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World](#) is now available on *Tethys*! Learn more about the release in the latest [Tethys Story](#)!

In celebration of the release, OES-Environmental is hosting a [series of webinars](#) to highlight information presented in each chapter of the report:

- [Underwater Noise, Electromagnetic Fields, Changes in Habitats, Oceanographic Systems, and Mooring Entanglement](#) (17 June 2020 at 8:00am PT, 3:00pm UTC)
- [Collision Risk and Environmental Monitoring](#) (22 June 2020 at 8:00am PT, 3:00pm UTC)

Tethys Engineering Photo Library

We have recently made improvements to the [Tethys Engineering Photo Library](#), which hosts photos and illustrations of MRE devices, arrays, and facilities that have been graciously provided by many of the leading developers from around the world and are free for third party use.

Request for Information

The United States (U.S.) Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Wind Energy Technologies Office (WETO) has released a [Request for Information](#) about environmental-related research needs concerning offshore wind energy development in the U.S. WETO is asking industry, academia, laboratories, government agencies, and the public for input on high-priority environmental research needs regarding U.S. offshore wind energy impact assessment, model validation, and monitoring and mitigation technology development and testing. **Responses to this Request for Information must be submitted electronically to WindEnergyRFI@ee.doe.gov no later than 5:00pm ET on 7 July 2020. Responses must be provided as attachments to an email.**

Atlantic Project Awards

Applications for the Atlantic Action Plan's 4th Atlantic Project Awards are now open. The Award honors projects with outstanding success stories, located on the Atlantic coastal area in Ireland, France, Portugal, or Spain. Apply [here](#) before 18 June 2020.

New USGS Newsletter

The US Geological Survey (USGS) Ecosystems Mission Area has released the first edition of [EcoNews](#), a quarterly newsletter that highlights science and activities coming out of USGS Ecosystems Science Centers and Cooperative Research Units across the U.S. If you are interested in receiving future issues of *EcoNews*, please subscribe to the mailing list [here](#).

Call for Abstracts

The National Wind Coordinating Collaborative (NWCC) has extended the abstract submission deadline for the [13th biennial NWCC Wind Wildlife Research Meeting](#), which will now be held virtually from 1-4 December 2020. Abstracts are now due 19 June 2020. Download the call for abstracts [here](#).

Calls for Papers

The Marine Technology Society Journal has extended its manuscript submission deadline for the [special issue](#) entitled, *Utilizing Offshore Resources for Renewable Energy Development: Marine Renewable and Offshore Wind Energy*. Manuscript submissions are now due 17 July 2020.

The Journal of Marine Science and Engineering has extended its manuscript submission deadline for the [special issue](#) entitled, *Environmental Interactions of Marine Renewable Energy Installations*. Manuscript submissions are now due 27 September 2020.

Funding/Testing Opportunities

The [Testing Expertise and Access for Marine Energy Research \(TEAMER™\) program](#), sponsored by the U.S. DOE and directed by the Pacific Ocean Energy Trust, will provide testing

and expertise support to technology developers and researchers seeking access to the nation's best facilities and expertise through 3 to 4 annual open funding calls over each of the next three years. The first [Request for Technical Support](#) application period will remain open through 31 July 2020. An [informational webinar](#) is now available.

Interreg North-West Europe's [Ocean DEMO](#) (Demonstration Programme for Ocean Energy Pilot Farms and Supporting Technologies) project recently opened its [3rd Call for Applications](#). Successful applicants will receive free access to test their ocean energy products and services in real sea environments at the project's network of test centers. Applications close 18 September 2020 at 17:00 UTC. An information webinar will be held on 30 June 2020 at 3:00pm CEST to present the application system and available support packages.

Employment Opportunity

The Norwegian University of Science and Technology's Department of Energy and Process Engineering is seeking a [Postdoctoral Fellow](#) in modelling biodiversity impacts of energy systems in Norway. Applications are due 14 June 2020.

Upcoming Events

Upcoming Webinar

The American Wind Wildlife Institute will be hosting the 17th WREN (Working Together to Resolve Environmental Effects of Wind Energy) webinar entitled, [Experiences from conducting environmental research at land-based and offshore wind energy facilities](#), on 7 July 2020 at 8:00am PT (3:00pm UTC).

Event Updates

The [North American Ornithological Conference \(NAOC\)](#), originally scheduled for mid-August 2020 in San Juan, Puerto Rico, will now be held from 10-15 August 2020 as a virtual meeting.

The American Wind Energy Association's (AWEA) [Wind Project Siting and Environmental Compliance Conference 2020](#), originally scheduled for April 2020 in Washington, DC (U.S.) has been rescheduled to 30 September to 1 October 2020 in Minneapolis, Minnesota (U.S.).

The Pacific Ocean Energy Trust's (POET) [Ocean Renewable Energy Conference](#), originally scheduled for September 2020 in Portland, Oregon (U.S.), has been cancelled.

The [annual joint conference](#) between the Raptor Research Foundation (RRF) and the Neotropical Raptor Network, originally scheduled for October 2020 in Boise, Idaho (U.S.), has been postponed to October 2021.

OCEANS 2020 Singapore and OCEANS 2020 Gulf Coast will now be held as a single virtual conference, [Global OCEANS 2020: Singapore – U.S. Gulf Coast](#). Tentatively scheduled for 5-30

October 2020, the conference will feature a mix of live and on-demand events available to all registrants. Further details will be available in the coming weeks.

New Documents on *Tethys*

Marine Renewable Energy

[Understanding coastal impacts by nearshore wave farms using a phase-resolving wave model](#) – Rijnsdorp et al. 2020

When extracting wave energy, arrays of wave energy converters (or wave farms) may alter surrounding wave and flow fields. This paper studies the modification of hydrodynamic processes at the coastline induced by nearshore wave farms using a recently developed phase-resolving wave-flow model. Changes to nearshore hydrodynamics were assessed for various farm configurations of submerged point-absorbers positioned 1–3 km offshore that were subject to realistic sea-states.

[Investigating biophysical linkages at tidal energy candidate sites; A case study for combining environmental assessment and resource characterization](#) – Scherelis et al. 2020

As the tidal energy industry looks to expand into commercial-scale array installations, uncertainty in methodology and outcome for environmental impact assessments can encumber tidal energy developments. Incorporating environmental monitoring measures into site characterisation campaigns can provide baseline information about biophysical relationships and help recognise potential impacts to the marine environment early in the development process.

[Genotoxic and cytotoxic effects of 50 Hz 1 mT electromagnetic field on larval rainbow trout \(*Oncorhynchus mykiss*\), Baltic clam \(*Limecola balthica*\) and common ragworm \(*Hediste diversicolor*\)](#) – Stankevičiūtė et al. 2019

Rainbow trout (*Oncorhynchus mykiss*) at early stages of development were exposed to EMF for 40 days, whereas marine benthic invertebrates – the common ragworm *Hediste diversicolor* and the Baltic clam *Limecola balthica* – for 12 days. To define genotoxicity and cytotoxicity responses in selected animals, assays of nuclear abnormalities in peripheral blood erythrocytes of *O. mykiss*, coelomocytes of *H. diversicolor* and gill cells of *L. balthica* were performed.

Wind Energy

[Hawaiian hoary bat \(*Lasiurus cinereus semotus*\) behavior at wind turbines on Maui](#) – Gorresen et al. 2020

This study examined the activity of the endemic Hawaiian hoary bat (*Lasiurus cinereus semotus*) at wind turbines operated by Auwahi Wind Energy, LLC, on southern Maui Island, from August to November 2018. The research was conducted to assess the potential effect of wind speed and turbine operation on bat presence and behavior and compared information obtained from both acoustic monitoring and thermal videography.

[Recent Advances in Wind Turbine Noise Research](#) – Hansen and Hansen 2020

Recent developments in horizontal-axis wind turbine noise research are summarised and topics that are pertinent to the problem, but are yet to be investigated, are explored and suggestions for future research are offered. The major portion of recent and current research on wind turbine noise generation, propagation and its effects on people and animals is being undertaken by groups in Europe, UK, USA, Japan, Australia and New Zealand.

[Environmental impacts of decommissioning: Onshore versus offshore wind farms](#) – Hall et al. 2020

Increasing concerns over climate change have prompted rapid growth of renewable energy over the past few decades, particularly wind energy. However, as the installation of wind farms rises, so will the need for decommissioning and analysis of the environmental impacts associated with decommissioning. This paper investigates how Environmental Impacts Assessments (EIA) identify, estimate and manage potential impacts of decommissioning. EIAs from 12 onshore and offshore windfarms consented between 2009 and 2014 in England and Scotland were analysed and compared.

News & Press Releases

Marine Renewable Energy

[DOE Announces Waves to Water Stage Two Winners and Selection of Final Test Site](#) – DOE EERE

The U.S. Department of Energy (DOE) announced the winners of the second stage (DESIGN) of the Waves to Water Prize. Launched in February 2019, the Waves to Water prize calls on U.S. innovators to leverage the power of the ocean to provide potable drinking water to remote coastal and island communities through wave energy-powered desalination systems. The winners of the DESIGN stage showed they are prepared to build a proof-of-concept prototype of their modular desalination system.

[Minesto completes first installation phase of the Vestmanna Sund project](#) – Minesto

Minesto has completed the first offshore installation phase of its tidal energy project in the Faroe Islands, as the gravity-based foundation for the powerplant has been installed at the site in Vestmanna Sund. The foundation will provide the connection point for

Minesto's DG100 tidal kite system. The next installation phase involves the sub-sea export cable that distributes electricity generated by the powerplant to the electric grid operated by Minesto's partner SEV.

EU Drives Tidal Energy to Commercial Reality – Nova Innovation

World-leading tidal energy company Nova Innovation has successfully completed its project to manufacture its market-ready, state of the art direct drive tidal turbine. The new turbine – which eliminates the need for a gear box – reduces the cost of tidal energy by 30 percent and is set to revolutionise the tidal industry. In 2016, Nova Innovation secured €2.25m of funding from the European Commission's SME Instrument to develop the Direct Drive Tidal Turbine, known as D2T2. Roll forward three years and the turbine is manufactured, commercially ready, and about to be deployed at Nova's tidal array in Shetland.

Tank Test Development – Shepard Offshore

Shepherd Offshore is constructing one of Europe's largest offshore testing tanks at Neptune Energy Park in Walker, Newcastle. Located on the North Bank of the Tyne, the Neptune Enterprise Zone is one of the UK's six CORE (Centre for Offshore Renewable Engineering) sites. The deep-water Test Tank will provide the Subsea Offshore Marine industry with capabilities to test new products and ROVs. Shepherd Offshore is in the final stages of developing the site and it is to be fully operational by the end of 2020.

POM West Flanders Enlists EMEC to Bring Blue Economy Test Platform to Market – EMEC

POM West Flanders, the regional development agency for West Flanders, Belgium, has sought council from the renowned European Marine Energy Centre (EMEC) to aid the development of the 'Blue Accelerator' test platform into an international hub for blue growth. Established in 2019, Blue Accelerator is a maritime innovation and development platform, located approximately 500 meters from the eastern breakwater of Ostend, Belgium. Operated by POM West Flanders, the platform is open to companies, knowledge institutions and research centres to demonstrate new products and technologies for the blue economy.

Wind Energy

It's No Li(dar): Buoys Equipped with More Powerful Instrumentation – DOE EERE

Over the past few years, Wind Energy Technologies Office has commissioned Pacific Northwest National Laboratory to deploy buoys equipped with advanced scientific instrumentation off the coasts of the United States and analyze the data. The goal is to obtain meteorological and oceanographic measurements that provide the wind industry with the data needed to develop robust offshore wind plant technology while advancing the scientific understanding of offshore winds.

OREAC: 1,400 GW of offshore wind is possible by 2050, and will be key for green recovery **– Equinor**

On World Oceans Day, the Ocean Renewable Energy Action Coalition (OREAC) announced its vision for 1,400 GW of offshore wind globally by 2050 to drive decarbonisation and a green economic recovery from the COVID-19 crisis. This ambition goes beyond current offshore wind forecasts, but is entirely achievable considering the resource potential, technology innovation, and government appetite to position offshore wind at the centre of the global energy transition. Later this year, OREAC will launch its report outlining the actions needed to support industry and policymakers in achieving the 1,400 GW vision.

Which Bats Steer Clear of Wind Turbine Deterrents—and When? – DOE EERE

Technologies that can reduce impacts to bats, birds, and other wildlife not only boost species conservation efforts, but also the efficiency and productivity of wind power projects. DOE supports this environmental win-win with research efforts developing technological innovations that can detect and deter wildlife from approaching wind turbine blades. Researchers at DOE's National Renewable Energy Laboratory are gaining new insights into one such solution—the use of ultrasonic acoustic deterrents—as part of that larger effort.

UK Business Forging Ahead to Meet China's Undimmed Low Carbon Energy Demand – Offshore Renewable Energy Catapult

Eight UK organisations have signed significant new agreements to develop and provide renewable energy technologies, services and research in China, at a virtual ceremony hosted in Yantai City, Shandong Province. The eight innovators, from backgrounds as diverse as Formula 1, robotics, oil and gas, marine energy and digital, have all been supported by TORC, the joint venture research and incubation centre established in March 2019 by the UK's Offshore Renewable Energy Catapult and China's Tus Wind.

The Massive Wind Park the Virus Couldn't Stop – Bloomberg Green

The pandemic stalled projects all over the world, but some renewable energy companies saw it coming. The \$8 billion Markbygden site, set to be Europe's largest onshore wind farm, kept construction going through lockdown, helped by Sweden's laissez-faire approach to the virus. But it's emblematic of an industry that—globally—has weathered the pandemic better than its peers in conventional energy.