



29 May 2020

[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

OES-Environmental will be releasing the 2020 State of the Science Report on environmental effects of marine renewables just in time for World Oceans Day on 8 June 2020. In celebration of the release, OES-Environmental will be hosting the first of a [series of webinars](#) on 11 June 2020 at 8:00am and again at 5:00pm PT to provide an overview of the information presented in the report. Additional webinars will be hosted on [17](#), [22](#), and [24](#) June 2020 at 8:00am PT to highlight more detailed information presented in each chapter of the report. The [first](#) of these will include presentations on underwater noise, electromagnetic fields, changes in habitats, oceanographic systems, and mooring entanglement; the [second](#) on collision risk and environmental monitoring; and the [third](#) on social and economic data collection, marine spatial planning, adaptive management, and risk retirement.

Webinar Recordings Available

Recordings are now available from the OES-Environmental & ORJIP *International Forum on MRE Environmental R&D*.

- View the presentation slides and recording from the *Updates on Monitoring and Research Around Turbines* webinar [here](#).

- View the presentation slides and recording from the *Design and Application of Integrated Monitoring Platforms for Monitoring Around MRE Devices* webinar [here](#).
- View the presentation slides and recording from the *Updates on Monitoring and Research Around Wave Energy Devices* webinar [here](#).

Market Research Questionnaire

SmartBay Ireland is collaborating on the RESOURCECODE project with an international consortium of businesses and MRE test sites supported by established academic partners. The project, led by the European Marine Energy Centre, aims to create an integrated marine data toolbox that will enable ocean energy devices developers, and their suppliers, to make optimized technical and commercial decisions. They are seeking input from MRE developers, the R&D community, supply chain organizations, investors and public sector decision-makers via an [online questionnaire](#) by 4 June 2020.

Calls for Abstracts

The American Wind Energy Association (AWEA) is accepting abstract submissions for its [Offshore WINDPOWER 2020 Conference & Exhibition](#) in New York, NY (US) from 13-14 October 2020. Abstracts can be submitted [here](#) and are due 31 May 2020.

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 is accepting manuscript submissions for a [special issue](#) entitled, *Utilizing Offshore Resources for Renewable Energy Development: Marine Renewable and Offshore Wind Energy*. The deadline for manuscript submissions is 22 June 2020.

The Journal of Marine Science and Engineering is accepting manuscript submissions for a [special issue](#) entitled, *Environmental Interactions of Marine Renewable Energy Installations*. The deadline for manuscript submissions is 27 June 2020.

Funding Opportunity

Vineyard Wind and Greentown Labs have partnered to launch the [Offshore Wind Challenge](#), a six-month accelerator program supporting innovations in responsible development of offshore wind energy. The Offshore Wind Challenge is focused on advances in marine mammal monitoring, specifically for data collection and real-time transmission or data analysis. Applications are due 31 May 2020.

Employment Opportunities

The European Marine Energy Centre (EMEC) is seeking an [Environment & Consents Officer](#) to support the acquisition, maintenance, and streamlining of all statutory consents required at EMEC or other identified sites. This full-time post is to cover maternity leave and will terminate when the post holder returns to work. Applications are due by 1 June 2020 at 1:00pm BST.

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.

The FLOating Wind Energy netwoRk (FLOAWER) has several positions available for Early Stage Researchers (ESRs) interested in assessing the measurements of offshore wind conditions using LiDAR on floating platforms for resource assessment and power curve verification ([ESR 2](#)), performing hydrodynamic analysis and numerical modelling of heave-plates dedicated to the design of floating wind turbines ([ESR 5](#)), or working on dynamics and interactions of floating turbines ([ESR 10](#)).

Upcoming Events

Upcoming Webinars

The Pacific Ocean Energy Trust (POET) will be hosting a webinar entitled, *Floating Offshore Wind and Seabirds in the California Current Ecosystem*, on 29 May 2020 from 10:00am-11:30am PT. Register [here](#).

As part of the Ocean Power Innovation Network (OPIN) project, Scottish Enterprise will be hosting a webinar entitled, *Introduction to European Tidal Stream projects*, on 8 June 2020 from 3:00-5:00pm CEST. Register [here](#).

The European Technology and Innovation Platform for Ocean Energy (ETIP Ocean) will be hosting a number of webinars in cooperation with European Energy Research Alliance (EERA) Ocean Energy JP to exchange on the Priority Topics identified in their soon to be published Strategic Research & Innovation Agenda (SRIA) for Ocean Energy. The first webinar, *Demonstration of wave energy devices, PTO and control systems*, will be held on 11 June 2020 at 2:00pm BST. Register [here](#).

Event Updates

Windpower Monthly's Floating Offshore, Future Offshore Foundations, and Vessels and Access events will now be held as a single digital event, [Offshore Logistics: Vessels and Foundations](#), from 17-18 June 2020.

In place of the in-person event, [US Offshore Wind Confex 2020](#) will now be hosted virtually from 18-19 June 2020. Registration is free and available [here](#).

[Seanergy 2020](#), originally rescheduled for late June/early July 2020 in Nantes, France has been postponed again and will now be held 8-11 June 2021.

[CoastGIS 2020](#), originally scheduled for September 2020 in Raseborg, Finland, has been postponed to Spring 2021. The deadlines for abstract submission and registration no longer apply; there will be a new abstract submission and registration period at a later date.

New Documents on *Tethys*

Marine Renewable Energy

[Modelling the impact of tidal range energy on species communities](#) – Baker et al. 2020

We examine the impact of a proposed Severn tidal barrage on 14 species via the linking of hydrodynamic modelling to species distribution models. Through a selection of species that are linked via a simple food web system we extrapolate changes in prey species to the respective predator species. We show that species at lower trophic levels would be adversely affected by the barrage, but higher trophic level organisms increase in possible habitable area. Overall, all 14 species were affected, with most gaining in distribution area, and only four losing distribution area within the Severn Estuary.

[A Vector Sensor-Based Acoustic Characterization System for Marine Renewable Energy](#) – Raghukumar 2020

NoiseSpotter is a passive acoustic monitoring system that characterizes, classifies, and geo-locates anthropogenic and natural sounds in near real time. It was developed with the primary goal of supporting the evaluation of potential acoustic effects of offshore renewable energy projects. Here, performance characteristics of the system are presented, using data from controlled acoustic transmissions in a quiet environment and ambient noise measurements in an energetic tidal channel in the presence of non-acoustic flow noise.

[Navier-Stokes Modelling of Fluid Flow and Related Sediment Transport in the Near Field of an Oscillating Water Column Wave Energy Converter](#) – Rameliarison et al. 2020

The fluid dynamics around and inside an OWC-type wave energy device is studied using Direct Numerical Simulations of the multiphase air-water two-dimensional vertical Navier-Stokes equations. A schematic rectangular shaped OWC device placed against the vertical ending wall of the numerical rectilinear wave flume is considered. A parametric study on incident wave period is performed to determine the fluid-structure interactions. A one-dimensional vertical analytical model is used to compute the instantaneous bottom shear stress and the induced-bedload sediment transport rate which appears impacted by OWC device.

Wind Energy

[Population-Level Risk to Hoary Bats Amid Continued Wind Energy Development: Assessing Fatality Reduction Targets Under Broad Uncertainty](#) – Electric Power Research Institute 2020

Across the United States and Canada, hoary bats (*Lasiurus cinereus*) are the most common species among reported bat fatalities at wind farms. Although large gaps in our knowledge about hoary bat population size and dynamics makes the impact of wind turbine fatality difficult to assess, expert opinion places the population parameters in a range in which the risk of decline or extinction may be high. The risk of hoary bat population decline or extinction in the presence of wind turbine mortality was projected from 2012 through 2050 using a simple population model. Future levels of turbine mortality were a function of expected capacity buildout in the United States and Canada.

[Using Artificial-Reef Knowledge to Enhance the Ecological Function of Offshore Wind Turbine Foundations: Implications for Fish Abundance and Diversity](#) – Glarou et al. 2020

As the development of large-scale offshore wind farms (OWFs) amplifies due to technological progress and a growing demand for renewable energy, associated footprints on the seabed are becoming increasingly common within soft-bottom environments. While acknowledging that OWFs disrupt the marine environment, the aim of this systematic review was to examine the effects of scour protection on fish assemblages, relate them to the effects of designated artificial reefs and, ultimately, reveal how future scour protection may be tailored to support abundance and diversity of marine species.

[A comparative life-cycle analysis of tall onshore steel wind-turbine towers](#) – Stavridou et al. 2020

Taking into account the last statement for energy-saving methods, it is essential to value the contribution of wind energy not only in eliminating CO₂ emissions when producing electricity from wind, but also in assessing the total environmental impact associated with the entire lifetime of all the processes related with this energy-production chain. In the present work, the life-cycle performance of two types of tall onshore wind-turbine towers has been investigated: a lattice tower and a tubular one.

News & Press Releases

Marine Renewable Energy

[Hydrokinetic Clean Energy Harnessed From Florida's Gulf Stream In Historic OceanBased Perpetual Energy Demo](#) – Business Wire

An offshore demonstration with game-changing implications for the future of perpetual clean energy, conducted from May 25 through 28 by OceanBased Perpetual Energy, LLC

in collaboration with the Southeast National Marine Renewable Energy Center at Florida Atlantic University, has demonstrated that clean, renewable perpetual energy can be derived by harnessing the perpetual Gulf Stream current off the coast of South Florida. The successful OceanBased demonstration is the first ever to yield energy from the powerful Gulf Stream for a continuous 24 hours using only the water's perpetual flow.

DTOcean Plus Standalone Tools Ready for Verification – Wave Energy Scotland

The development of the standalone alpha versions of the whole suite of design tools for the H2020 DTOcean Plus ocean energy systems is now complete. The alpha versions are now ready for the verification phase and then demonstration against real scenarios. Project partners are intensifying training and education activities to strongly engage with potential users of the tools. The verification phase will be carried out by the testing of each tool and module in order to verify that they meet the functional and technical requirements defined at the beginning of the project.

Orbital Marine, SABELLA and SME form Tidal Alliance for OEE2020 – Offshore Energy

Three tidal developers, Orbital Marine Power, SABELLA and Sustainable Marine Energy (SME), have joined forces as a Tidal Alliance at Ocean Energy Europe Conference and Exhibition 2020 (OEE2020). The Tidal Alliance is the result of industry players believing in the potential of the sector to be both a climate-friendly solution and an economic opportunity. OEE2020 will be held in Brussels in December.

First Floating Ocean Hybrid Platform Can Generate Power From Waves, Wind And Solar – Forbes

German startup Sinn Power has developed a modular maritime platform able to generate renewable energy from waves, wind and solar sources. Starting later this summer, it hopes to offer solar panel manufacturers the chance to test and demonstrate photovoltaic arrays on a floating platform off the Greek coast as part of an off-grid energy solution. What makes this particular platform unique is that it's been designed to be modular and extremely easy to connect and expand, so a variety of different combinations are possible.

Waves4Power eyes EMEC setup in 2021 – Offshore Energy

Swedish wave energy developer Waves4Power will install its WaveEL system at the European Marine Energy Centre (EMEC) in 2021. The company has secured EU Interreg Ocean Demo grant, giving it access to EMEC's power-connected test berths for three years. The grant also allows Waves4Power to deliver and sell electricity to Scotland's power grid based on a Power Purchase agreement. Through Scotland-guaranteed Contract for Difference Waves4Power will get up to GBP 300,000 per year for the three-year demo period. Included in the grant is also a free third-party verification of the WaveEL system.

Wind Energy

[A 'monumental day' for US offshore wind as first turbine is installed in federal waters – Renewable Energy World](#)

Thomas Brostrøm, President of Ørsted North America announced that the first offshore wind turbine was installed in U.S. federal waters (beyond 3 nautical miles from shore). The Siemens Gamesa 6-MW turbine was installed 27 miles offshore near Virginia and is one of two turbines that will make up the Coastal Virginia Offshore Wind project, a pilot project being developed by Ørsted and Dominion Energy. The project is also noteworthy because it is the first to receive approval for the Bureau of Offshore Energy Management, which is the agency that oversees energy projects in federal waters.

[Powered by change: Siemens Gamesa launches 14 MW offshore Direct Drive turbine with 222-meter rotor – Siemens Gamesa](#)

The winds of change have never been stronger, especially when it comes to meeting the world's needs for clean, renewable energy. Siemens Gamesa's new SG 14-222 DD offshore Direct Drive wind turbine now sees the light of day as a part of the solution. With an unprecedented 14-megawatt (MW) capacity - reaching up to 15 MW using the company's Power Boost function, a 222-meter diameter rotor, 108-meter long blades, and an astounding 39,000 m² swept area, the newest Siemens Gamesa wind turbine stands tall in a world currently undergoing enormous upheaval.

[Denmark plans to create energy islands in Baltic and North Sea – Reuters](#)

Denmark has proposed a more than tripling of its offshore wind capacity by building two energy islands linked to new wind farms in the Baltic and North seas to help to meet climate change targets. One of the two hubs, which would be the world's first energy island, will be located on the Danish Baltic island of Bornholm and the other on an artificial island in the North Sea. Each will have a capacity of at least 2 GW, enough to power four million of Denmark's 5.8 million homes, and the North Sea project, which was first presented last year, could eventually be increased to 10 GW.

[MARLIN STAR Project Spearheads Development of Innovative Floating Renewable Energy Platform – Offshore Renewable Energy Catapult](#)

The £1.4million MARLIN STAR project, funded by the Energy Catalyst programme, will progress the development and commercialization of an innovative modular, floating renewable energy platform that will enable coastal community access to stored and transferable clean energy. A UK-based consortium, led by Frontier Technical, will deliver the project, which has huge export potential to countries where remote off-grid coastal communities can benefit directly from local offshore renewable energy generation. The platform will be capable of hosting a wind turbine with capacity up to 2MW, as well as onboard energy storage and transfer capabilities.

Leading Danish companies join forces on an ambitious sustainable fuel project – Ørsted

Copenhagen Airports, A.P. Moller - Maersk, DSV Panalpina, DFDS, SAS and Ørsted have brought together the demand and supply side of sustainable fuels in a unique partnership with the concrete vision to develop a new ground-breaking hydrogen and e-fuel production facility as soon as 2023. When fully scaled-up by 2030, the project could deliver more than 250,000 tonnes of sustainable fuel for buses, trucks, maritime vessels, and airplanes every year. The project will require a large-scale supply of renewable electricity, which could potentially come from offshore wind power produced at Rønne Banke off the island of Bornholm.