



26 June 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

Requests 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 (9:00pm UTC) on 7 July 2020. Responses must be provided as attachments to an email.

Pacific Northwest National Laboratory is [requesting information](#) from offshore wind stakeholders on the uses and capabilities for an instrumentation test buoy that may be procured by the DOE WETO. WETO is considering procuring an instrumentation test buoy to support the offshore industry in the U.S. Beyond metocean physical measurements, there is significant interest in developing buoy-mounted environmental sensors to increase our understanding of potential environmental effects of offshore wind. This RFI will be open for feedback beginning on 26 June 2020. Responses to this RFI must be submitted electronically to

buoyloanprogram@pnnl.gov no later than 5:00pm PT on 31 July 2020. More information on the RFI can be found [here](#).

Marine Energy Collegiate Competition

The U.S. DOE Water Power Technologies Office's (WPTO) [2021 Marine Energy Collegiate Competition \(MECC\): Powering the Blue Economy](#) application period will open in August 2020. Building on the inaugural MECC, the 2021 competition challenges competitors to unlock the power of the ocean through the development of next-generation technologies that build resilient coastal communities and provide power at sea. The competition is open to undergraduate and graduate-level students. Learn more [here](#).

Request for Proposals

The [Wind Wildlife Research Fund](#) will be releasing a request for proposals (RFP) in early July for research projects on bats and wind energy to start in early 2021. Additional details on the research topics, selection criteria, proposal format, and submission are coming soon.

New Version of GenEst Now Available

The U.S. Geological Survey has released the latest version of the [GenEst \(Generalized Estimator\) software tool](#), which can be used to estimate the total number of bird and bat fatalities occurring at wind and solar energy facilities.

Funding/Testing Opportunities

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 7:00pm CEST (5:00pm UTC). A [virtual workshop](#) will be held on 30 June 2020 at 3:00pm CEST (1:00pm UTC) to present the application system and available support packages.

The U.K. Research and Innovation's Engineering and Physical Sciences Research Council (EPSRC) has issued a [call to fund research grant proposals](#) in wave energy. EPSRC is looking to fund proposals in the key areas highlighted by the Supergen Offshore Renewable Energy Hub's Wave Energy Roadmap, including novel designs for niche applications; modelling, forecasting, and evaluation of wave energy resource; and new materials for wave energy converters. An [Intent to Submit](#) is due by 14 July 2020 and the full proposal stage closes on 23 September 2020.

The [MaRINET2 project](#), which offers free access to a world-leading network of testing and research infrastructures for offshore renewables across Europe, will open its fifth and final call for free testing access from 1 September 2020 until 16 October 2020.

Upcoming Events

Upcoming Webinars

The Pacific Ocean Energy Trust (POET) will be hosting a webinar entitled, *US West Coast Floating Wind and Cetaceans: Baseline Data, Risks, and Moving Forward*, on 2 July 2020 from 10:00-11:30am PT (5:00-6:30pm UTC). Register [here](#).

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).

The U.S. Bureau of Ocean Energy Management (BOEM) is pleased to present the [West Coast Renewable Energy Science Exchange](#), a series of webinars about scientific research off the U.S. West Coast. The fifth webinar in the series will be held on 8 July 2020 at 10:00am PT (5:00pm UTC) and will provide an overview of BOEM-funded research about cultural resources.

Event Updates

The [7th PRIMaRE \(Partnership for Research in Marine Renewable Energy\) Conference](#) will be held online from 7-8 July 2020.

RenewableUK's [Global Offshore Wind Virtual Conference and Exhibition \(GOW V-Fest\)](#) will be held online from 22-24 July 2020.

The [Ecological Society of America \(ESA\) 2020 Annual Meeting](#) will now be held online from 3-6 August 2020. The registration deadline is 23 July 2020.

The [2020 Association of Fish and Wildlife Services \(AFWA\) Annual Meeting](#), originally scheduled for 9-16 September 2020 in Sacramento, CA (U.S.), will now be held online.

The East of England Energy Group's [Southern North Sea Conference](#) will now be held online from 16-17 September 2020.

New Documents on *Tethys*

Marine Renewable Energy

[Summary of workshop: Passive acoustic monitoring in high flow environments](#) – European Marine Energy Centre (EMEC)

The Offshore Energy Research Association (OERA) and the Fundy Ocean Research Center for Energy (FORCE) are assessing different types of monitoring technology that

can gather robust data to inform regulatory requirements. The third workshop under the Pathway Program was focused on “Passive acoustic monitoring in high flow environments” and was the first international workshop within the program. This report summarizes the outcomes of the workshop discussion and any insights gathered during the workshop that will support the successful delivery of the Pathway Program.

Assessing the effects of tidal stream marine renewable energy on seabirds: A conceptual framework – Isaksson et al. 2020

Guidelines are lacking on how best to use both well-established and novel survey methods to assess seabird use of tidal flow areas, leading to a data-rich but information poor (DRIP) situation. This review provides a conceptual framework for assessing the effects of tidal stream energy devices on seabirds, summarises current knowledge and highlights knowledge gaps. Finally, recommendations are given for how best to pursue knowledge on this topic.

The Expected Shoreline Effect of a Marine Energy Farm Operating Close to Sardinia Island – Onea and Rusu 2019

In the present work, the impact of a generic wind-wave farm on the nearshore waves and currents in the vicinity of the Porto Ferro inlet (northwest Sardinia) was assessed. Using a reanalysis wave dataset that covers a 40-year interval (1979–2018), the most relevant wave characteristics in the target area were identified. As a next step, considering a modeling system that combines a wave model (simulating waves nearshore (SWAN)) and a surf model, the coastal impact of some generic marine energy farms defined by a transmission coefficient of 25% was assessed.

Wind Energy

Limited accessibility and bias in wildlife-wind energy knowledge: A bilingual systematic review of a globally distributed bird group – Fernández-Bellón 2020

This review evaluates interactions between a globally distributed bird genus (harriers, *Circus* sp.) and wind farms to assess broader patterns in wildlife-wind energy knowledge accessibility and bias. A systematic review of grey and peer-reviewed literature across two multidisciplinary and two field-specific databases in two languages (English and Spanish) yielded 235 relevant sources, covering 12 harrier species and 31 countries. Findings indicate that harriers are considered to have high sensitivity to wind farms, with greatest impacts expected from habitat effects rather than from turbine collisions.

Estimating the effects of pile driving sounds on seals: Pitfalls and possibilities – Whyte et al. 2020

Understanding the potential effects of pile driving sounds on marine wildlife is essential for regulating offshore wind developments. Here, tracking data from 24 harbour seals were used to quantify effects and investigate sensitivity to the methods used to predict

these. The Aquarius pile driving model was used to model source characteristics and acoustic propagation loss (16 Hz–20 kHz). Predicted cumulative sound exposure levels experienced by each seal were compared to different auditory weighting functions and damage thresholds to estimate temporary and permanent threshold shift occurrence.

Observations Show That Wind Farms Substantially Modify the Atmospheric Boundary Layer Thermal Stratification Transition in the Early Evening – Rajewski et al. 2020

Single wind turbines and large wind farms modify local scales of atmospheric boundary layer (ABL) turbulence through different mechanisms dependent on location within the wind farm. These changes in turbulence scales would most likely have notable influence on surface fluxes and microclimate during the afternoon and early evening stability transition. Profiles of Richardson number and shear and buoyancy from 1-Hz tall tower measurements in and near a wind farm in an agricultural landscape were used to quantify departures in stability characteristics during the fallow seasons.

News & Press Releases

Marine Renewable Energy

Normandy Prefecture Approves Transfer of 12 MW Tidal Power Development Lease from Engie to Normandie Hydroliennes – Simec Atlantis Energy

SIMEC Atlantis Energy Limited is pleased to announce that the Prefecture de la Manche has approved the transfer of the lease to develop a 12MW tidal power project in Raz Blanchard from ENGIE to Normandie Hydroliennes. Normandie Hydroliennes has been working with the French Environmental and Energy Management Agency and all relevant government ministries over the past 12 months to obtain the relevant approvals for the transfer for what will be the first stage of a potential multi-hundred-megawatt project marine energy project in Raz Blanchard.

Floating Power Plant and PLOCAN sign Memorandum of Understanding – Floating Power Plant

Floating Power Plant (FPP) have signed a Memorandum of Understanding with The Oceanic Platform of the Canary Islands (PLOCAN) to investigate and develop a potential deployment of FPP's technology in the PLOCAN test facilities in Gran Canaria. FPP intend to deploy a commercial scale version of their hybrid floating wind and wave energy device in the PLOCAN site, as well as establishing an R&D subsidiary in Gran Canaria. This will allow the technology to be proven at commercial scale, as well as providing a centre for ongoing R&D into system components, control strategies and auxiliary equipment for a number of years.

Verdant Power on track for autumn deployment – Offshore Energy

During the 2-month Covid-19 shutdown, Verdant Power made progress on the necessary steps to install its tidal power system in early autumn. Prior to the Covid-19 pandemic, the US-based company assembled turbines in New Jersey, with remaining components ready for final assembly. Verdant resumed its work for the final assembly of its tidal power turbines and their mounting system in accordance with New Jersey and New York State directives. Last week Verdant also signed contracts with three New Jersey marine companies in advance of its system deployment.

Marine Energy Alliance welcomes 23 new SMEs – Interreg North-West Europe

The Marine Energy Alliance aims to progress the technical and commercial maturity level of early-stage (TRL 3 – 4) marine energy technology companies with the overall goal of reducing the risk of device failure in subsequent demonstration phases. The 23 selected marine energy technology companies will receive a suite of tailored expert services that will enable them to realise their ambitions and, more broadly, contribute to the coherent growth of the marine energy industry in general.

Marine Energy Wales Welcomes Green Light for £60 Million Pembrokeshire Marine Energy Project – Marine Energy Wales

A £60 million marine energy project that will help tackle climate change while reviving Pembrokeshire's economy in the wake of Covid-19 has been given the green light. The UK Government and Welsh Government have now approved the business case for the Pembroke Dock Marine project, which is expected to generate £73.5 million a year to the Swansea Bay City Region's economy. Pembroke Dock Marine is led by the private sector, with support from Pembrokeshire County Council. The project is expected to generate more than 1,800 jobs in the next 15 years.

Wind Energy

Siemens Gamesa's flagship 14 MW turbine to power 1.4 GW Sofia offshore wind power project in the UK – Siemens Gamesa Renewable Energy

Siemens Gamesa Renewable Energy has conditionally received an order for 100 units of its new SG 14-222 DD offshore wind turbines for innogy's 1.4 GW Sofia Offshore Wind Farm in the UK. The project will have the capacity to generate enough electricity to power more than 1.2 million British households when completed. A total of 100 SG 14-222 DD offshore wind turbines, launched on May 19, 2020, are planned to be installed commencing 2024 at this project, located 195 km off the north east coast of the UK, on the shallow area of the central North Sea known as Dogger Bank.

Japan Starts to Seek Bidders for First Floating Wind Farm Auction – Bloomberg Green

Japan officially launched its effort to seek participants in the nation's first auction for a floating offshore wind farm. The nation's economy and land ministries will select the winner of the auction around June 2021 to construct the floating turbines off the southern

prefecture of Nagasaki, according to a joint statement on Wednesday. The auction will be the first under Japan's offshore wind promotion law, which took effect April 1, 2019, as the nation aims to achieve the target of boosting renewable energy to 24% of its total power generation by 2030, from about 17% in 2019.

Autonomous Motherships and Robot Repair Teams at Offshore Wind Farms? On Their Way, Says MIMRee – Offshore Renewable Energy Catapult

One year on from the launch of MIMRee (Multi-Platform Inspection, Maintenance and Repair in Extreme Environments), the project reports breakthroughs in its quest to demonstrate an end-to-end autonomous inspect and repair mission to offshore wind farms. MIMRee, awarded a £4.2 million grant from Innovate UK, is one of offshore wind's most ambitious robotics project to date. The end-game is demonstration of an autonomous system capable of planning its own operational missions to offshore wind farms, whereby a mothership will scan moving turbine blades on approach, then launch teams of inspection drones carrying blade crawlers for forensic inspection and repair of damaged blades.

Turbine Installation Kicked Off at SeaMade, Belgium's Largest Offshore Wind Farm – DEME

DEME Offshore has installed the first turbine at the SeaMade offshore wind farm in the Belgian North Sea. With a 487 MW capacity, SeaMade is the largest offshore wind farm in Belgium. Offshore construction of the SeaMade wind farm started in September 2019, with the last foundation installed in January 2020 and in the meantime connected by the subsea cables. DEME's DP2 offshore installation vessel 'Apollo' will now install 58 Siemens Gamesa 8.4 MW turbines on the monopile foundations. By the end of 2020, SeaMade will be operational with a capacity of 487 megawatts providing green energy for 485,000 households.

GE Renewable Energy, COBOD and LafargeHolcim co-develop record-tall wind turbine towers with 3D-printed concrete bases – LafargeHolcim

GE Renewable Energy, COBOD and LafargeHolcim announced that they will partner to co-develop wind turbines with optimized 3D printed concrete bases, reaching record heights up to 200 meters. The three partners will undertake a multi-year collaboration to develop this innovative solution, which will increase renewable energy production while lowering the Levelized Cost of Energy (LCOE) and optimizing construction costs. The partners will produce ultimately a wind turbine prototype with a printed pedestal, and a production ready printer and materials range to scale up production. The first prototype, a 10-meter high tower pedestal, was successfully printed in October 2019 in Copenhagen.