



February 23, 2018

The bi-weekly Tethys Blast will update you with new information on Tethys, news article of international interest, and opportunities in wind and marine renewable energy. We hope you find this a valuable tool to keep you connected to colleagues, new research, opportunities, and industry milestones.

MRE Data and Information Sharing Webinar

[Ocean Energy Systems](#) invites you to a webinar on data and information sharing. The same webinar will be held twice:

- Tuesday February 27th 2018, 16:00 UTC (Tuesday February 27th 2018, 11:00 EST)
- Wednesday February 28th 2018, 00:00 UTC (Tuesday February 27th 2018, 19:00 EST)

Visit [OpenEI for more information](#) about the upcoming webinars.

ICES MRE Workshop

The ICES Working Group on Marine Renewable Energy is holding a workshop in Runde, Norway from 16-18 April. The workshop will address approaches to assessing environmental impacts from marine renewable energy development and their application in planning, consenting and regulatory processes. The technologies addressed include tidal (in-stream and lagoon/barrage), wave, and offshore wind. Those interested in attending should contact the Chairperson by email: finlay.bennet@gov.scot

The [International Council for the Exploration of the Sea \(ICES\)](#) coordinates and promotes marine research on oceanography, the marine environment and ecosystems, and living marine resources in the North Atlantic Ocean and adjacent seas.

California Offshore Wind Industry Summit

The [California Offshore Wind Industry Summit](#) will be held in Sacramento, CA on March 13, 2018. The symposium will feature representatives of the offshore wind industry, key government officials, environmental NGO's, supply chain, and academic leadership to discuss the future of floating offshore wind energy in California.

Easier Document Access on Tethys

On Tethys, a new “Access Document” box was added to the top right of each publication page to better highlight options for downloading the document, either directly from Tethys or from a linked source, depending on copyright.

New Documents on Tethys

New documents are regularly added to Tethys, hand-selected for their relevance to the environmental effects of wind and marine renewable energy. Short introductions to new or popular documents are listed below, accessible by the accompanying Tethys links:

[The State of Knowledge for Environmental Effects: Driving Consenting/Permitting for the Marine Renewable Energy Industry](#) – Copping 2018

The marine renewable energy (MRE) industry is young—most technology development and testing for tidal and wave devices has taken place over the past 10–15 years. As wave and tidal devices continue to be deployed for demonstration, testing, and pilot projects, and the earliest commercial arrays are being developed, regulators around the world are requiring that a significant amount of data be collected to determine the effects of devices and systems on marine animals, habitats, and ecosystems... This paper attempts to summarize the current status and suggest pathways for moving the industry forward through efficient consenting processes.

[The effects of temporary exclusion of activity due to wind farm construction on a lobster \(*Homarus gammarus*\) fishery suggests a potential management approach](#) – Roach et al. 2018

Offshore wind farms (OWF) form an important part of many countries strategy for responding to the threat of climate change, their development can conflict with other offshore activities. Static gear fisheries targeting sedentary benthic species are particularly affected by spatial management that involves exclusion of fishers. Here we investigate the ecological effect of a short-term closure of a European lobster (*Homarus gammarus* (L.)) fishing ground, facilitated by the development of the Westernmost Rough OWF located on the north-east coast of the United Kingdom.

[Fish Distributions in a Tidal Channel Indicate the Behavioural Impact of a Marine Renewable Energy Installation](#) – Fraser et al. 2018

In the dynamic environments targeted for marine renewable energy extraction, such as tidal channels, the natural distribution of fish and behavioural impacts of marine renewable energy installations (MREIs) are poorly understood. This study builds on recent methodological developments to reveal the behaviour of fish schools using data collected by a seabed-mounted echosounder deployed in extreme tidal flows and in the wake of a MREI (composed of the foundation of a full-scale tidal stream energy turbine).

Factors Influencing Winter Mortality Risk for Pronghorn Exposed to Wind Energy Development – Taylor et al 2016

Evaluating the influence of energy development on pronghorn (*Antilocapra americana*) winter mortality risk is particularly critical given that northern populations already experience decreased survival due to harsh environmental conditions and increased energetic demands during this season. The purpose of our study was to evaluate pronghorn mortality risk over 3 winters (2010, 2010–2011, 2011–2012) on a landscape developed in 2010 for wind energy production (Dunlap Ranch) in south-central Wyoming, United States.

Simulating Current-Energy Converters: SNL-EFDC Model Development, Verification, and Parameter Estimation – James et al. 2017

Increasing interest in power production from ocean, tidal, and river currents has led to significant efforts to maximize energy conversion through optimal design and siting and to minimize effects on the environment. Turbine-based, current-energy-converter (CEC) technologies remove energy from current-driven systems and in the process generate distinct wakes, which can interact with other CEC devices and can alter flow regimes, sediment dynamics, and water quality. This work introduces Sandia National Laboratories-Environmental Fluid Dynamics Code CEC module.

Assessing Northern Gannet Avoidance of Offshore Windfarms – Rehfish et al. 2014

A novel approach is presented for estimating northern gannet *Morus bassanus* macro- and micro-avoidance of offshore windfarms from high resolution digital images gathered from aerial survey. This approach calculates macro- and micro-avoidance based on the measured change in gannet density at a distance from the windfarm and inside the windfarm. Four aerial surveys of the built Greater Gabbard offshore windfarm (GGOWF) were carried out between 30 October 2014 and 23 November 2014, a period of high gannet autumn passage off the East Anglian coast and in the southern North Sea.



[ORJIP Ocean Energy](#) is a UK-wide collaborative programme of environmental research with the aim of reducing consenting risks for wave, tidal stream and tidal range projects. Partnering with Annex IV, ORJIP provides content input to Tethys Blasts. ORJIP wishes to make you aware of the following opportunities:

- The FORESEA (Funding Ocean Energy through Strategic European Action) programme has launched its [4th call for proposals](#), due June 29.
- The Wales Coastal Communities Fund is [accepting grant applications for round 5](#), promoting sustainable economic growth and jobs in coastal communities in Wales, due March 12.

News and Current Events

Marine Renewable Energy

[CorPower deploy C3 wave energy converter at EMEC](#) – EMEC

CorPower Ocean has successfully installed their half-scale C3 wave energy converter (WEC) at the European Marine Energy Centre (EMEC) in Orkney, Scotland. The C3 point absorber was installed at EMEC's Scapa Flow scale test site in collaboration with local marine contractor Green Marine (UK) Ltd. The device was towed to site and the surface operated install sequence was successfully performed from the Green Isle multicat vessel. The C3 WEC was connected to a floating microgrid unit provided by EMEC.

[Malta puts floating storage for offshore renewables on trials](#) – Tidal Energy Today

A start-up from the University of Malta has deployed a scaled prototype of an offshore floating platform with integrated energy storage for trials in the Maltese Grand Harbour. The technology, dubbed the Floating Liquid-piston Accumulator using Seawater under Compression (FLASC), uses pressurized seawater and compressed air to store energy from offshore renewable resources.

[Wello is supplying a 10 MW wave energy park to Bali](#) - Wello

Gapura Energi Utama (GEU), an Indonesian infrastructure construction company has ordered a 10 MW Wello Penguin wave energy park. The park will be located next to Nusa Penida Island in Bali and it will be the largest wave energy park globally. The delivery will take place after the permitting process is finalized, which is estimated to occur in the end of 2018.

[Cape Sharp Tidal Demonstration Project Update](#) – Cape Sharp Tidal

We are continuing to learn, innovate and advance our work to demonstrate the viability of tidal energy. We are preparing the next phase of the Cape Sharp Tidal demonstration project and will deploy our in-stream tidal turbine in mid-2018 at the Fundy Ocean Research Center for Energy (FORCE) test site. We are building on our success in every part of this demonstration project, and we have been working to apply what we learned from the previously deployed turbine and environmental monitoring devices that were recovered in June 2017.

Wind Energy

[The biggest offshore wind farm on the planet has chosen its turbine supplier](#) - CNBC

Danish renewable energy business Orsted has chosen Siemens Gamesa Renewable Energy (SGRE) to be the exclusive supplier of wind turbines for Hornsea Project Two. The facility, which is due to be operational in 2022, will be the world's biggest offshore wind farm. It will use SGRE eight-megawatt turbines, Orsted said Wednesday. Most of the turbine blades will be delivered from SGRE's facility in Hull, England. Additionally, SGRE is planning to partly source the wind turbine towers from the U.K.

[Jan De Nul installs first foundation for 600MW Kriegers Flak offshore wind farm](#) – Energy Business Review

Jan De Nul has installed the first gravity-based foundation (GBF) for the Vattenfall's 600MW Kriegers Flak offshore wind farm off the coast of Denmark. A heavy lift vessel Rambiz in combination with a ballast module was used to install the 8000t foundation on the seabed at the project site in the Baltic Sea. Jan De Nul plans to install the second 10,000t foundation in near future, depending on the weather conditions.

[Big Wind Turbine Research Vital to Europe's Energy & Climate Challenges, Says WindEurope CEO Giles Dickson](#) – Clean Technica

Giles Dickson, the CEO of the European wind energy trade body, WindEurope, told representatives from the European Commission this week that continued research into developing ever-larger wind turbines is vital to future cost reductions which can lead to meeting European Climate and Energy objectives. Speaking before representatives from the European Commission on Wednesday, Giles Dickson highlighted the urgent need for continued ambition to develop offshore wind technology.

[Norway's Statkraft enters eastern Europe's top power market](#) - Reuters

Norwegian utility company Statkraft has entered Poland's power market by signing agreements to buy and resell electricity from three Polish wind farms, with an 80 megawatt (MW) combined capacity, the firm said on Monday. By entering Eastern Europe's largest power market, the deal may help Statkraft in its bid to boost its onshore renewable energy and market operations after divesting all its global offshore wind assets.