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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.

Upcoming Tethys Wind Webinar

An upcoming Tethys webinar will showcase the content and resources available on Tethys, with a focus on wind energy. Whether you are new to Tethys or have been involved for years, you are sure to learn something new. The webinar will be on 25 June 2018 at 16:00-17:00 UTC (9am PDT, 12pm EDT, 5pm BST). [Login instructions are available on Tethys.](#)

Job Posting

The National Renewable Energy Laboratory (NREL) is seeking a senior project leader for wind and water power environmental science. See [job posting](#) for details.

MHK Maritime Markets Report

The US Department of Energy Waterpower Technologies Office has published a report on 12 maritime markets that represent potential opportunities for providing marine energy for new and emerging markets, most smaller than utility scale electricity markets. They are [seeking comments and input on the content](#). Please download the report and comment on any portions of the report you like; the deadline for online comments has been extended to July 31st.

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:

Automated monitoring for birds in flight: Proof of concept with eagles at a wind power facility – McClure et al. 2018

Automated surveys for wildlife have the potential to improve data collection while averting mortality of animals. Collisions of eagles at wind power facilities are particularly of concern and therefore an automated system that could detect birds, determine if they are eagles, and track their movement, might aid in curtailing wind turbines before collisions occur. Here, we use human observers and photographs to test the ability of a camera-based monitoring system, called IdentiFlight, to detect, classify, and track birds.

Using Coupled Hydrodynamic Biogeochemical Models to Predict the Effects of Tidal Turbine Arrays on Phytoplankton Dynamics – Schuchert et al. 2018

The effects of large scale tidal energy device (TED) arrays on phytoplankton processes owing to the changes in hydrodynamic flows are unknown. Coupled two-dimensional biogeochemical and hydrodynamic models offer the opportunity to predict potential effects of large scale TED arrays on the local and regional phytoplankton dynamics in coastal and inshore environments. Using MIKE 21 Software by DHI, coupled two-dimensional biogeochemical and hydrodynamic models were developed.

Report of the IGW on Wind Turbines and Bat Populations 2018 – Rodrigues 2018

Noting the importance that wind energy has in the implementation of the Kyoto protocol to reduce CO₂ emissions and recalling the Agreement's Conservation and Management Plans, which call for the conservation of bat habitats in all cases of land management and development especially when foraging areas or commuting routes are affected, the Intersessional Working Group (IWG) was requested to: (1) assess the evidence of the impacts of wind turbines on bat populations and, if appropriate, to develop guidelines for assessing potential impacts on bats and for the establishment of wind turbines in accordance with the ecological requirements of bat populations; (2) continue to update the generic guidelines and compile relevant information, including methods to assess the impact on bat populations.

2018 State of the Sector Report: Marine Renewable Energy in Canada – Marine Renewables Canada 2018

Marine renewable energy (MRE) is largely an untapped resource, with the potential to provide new energy, economic, and environmental benefits for Canada. Harnessing the power of the tides, waves, offshore wind and rivers can provide a clean, sustainable electricity source, contribute to action on climate change, spur industrial growth by capitalizing on skills and assets already present in other sectors, and create a game-changing opportunity for remote communities – many of which continue to rely on imported diesel to generate electricity.

[Spatial Multi-Criteria Decision Analysis \(SMCDA\) toolbox for Consensus-based Siting of Powerlines and Wind-power plants \(ConSite\)](#) – Hanssen et al. 2018

The expansion of wind energy development causes both societal and environmental concerns worldwide. Traditional land use planning approaches, however, limit addressing such concerns adequately. The scale and complexity of emerging renewable energy construction projects enforce the development of improved plan- and decision support tools that ensure democratic and cost-effective processes securing qualified decision making. The multiplicity of criteria and actors involved in decision-making processes requires holistic approaches that enable capturing the variety stakeholder views from technological, economic, societal and environmental perspectives.



[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:

- PRIMaRE (Partnership for Research in Marine Renewable Energy) [call for funding applications](#) due 29 June 2018. Categories include: short research visits, early career researcher travel grants, overseas collaborators to visit partners, and partners to visit overseas collaborators.
- NeSSIE (North Sea Solutions for Innovation Corrosion for Energy) project consortium launches [first stage of competition](#) to implement projects demonstrating anti-corrosion solutions in offshore renewables. Due 7 August 2018.
- The FORESEA (Funding Ocean Energy through Strategic European Action) programme has launched its [4th call for proposals](#), due June 29.

News and Current Events

Marine Renewable Energy

[Naval Group deploy Microsoft underwater data centre at EMEC](#) - EMEC

Phase 2 of Microsoft's 'Project Natick' has been initiated at the European Marine Energy Centre (EMEC) in Orkney with the deployment of an underwater data centre powered by renewables. Naval Group led the successful installation of the 450kW subsea data centre at EMEC's Billia Croo wave energy test site, on the west coast of the Orkney mainland, on 1st June 2018 by local marine contractor Green Marine. Project Natick is a Microsoft

research project investigating the numerous potential benefits that a standard, manufacturable, deployable undersea data centre could provide.

U.S. Department of Energy announces funding for six marine energy projects - HydroWorld

The U.S. Department of Energy (DOE) has awarded a total of \$6.7 million in funding to six recipients, with the goal of developing innovative marine energy technologies "capable of generating reliable and cost-effective electricity from U.S. water resources." The money comes from DOE's Office of Energy Efficiency and Renewable Energy's Water Power Technologies Office.

Wave energy converter installation in Heraklion: First preparation phase successfully completed – Sinn Power

This summer SINN Power will install five wave energy converter (WEC) modules with the revised SINN Power technology in Greece. After four weeks of construction, the preparations for the installation of the first two modules on the port wall were completed. The two WEC modules, which are funded by the German Federal Government, primarily serve to test the updated technology for its functionality.

Marine put to the test in France - reNews

French engineering university ESITC in the northern city of Caen will inaugurate a marine energy test facility. The deep water basin is 40 metres long, one metre wide and one-and-a-half metres deep. It will be able to simulate waves to the equivalent of up to 15 metres. The facility will test both tidal and wave energy turbines.

China's LHD tidal demo generates 800MWh. Marks 'world record' – Power Links

The project led by Chinese developer LHD has generated over 800MWh of cumulative power since summer 2016 – claiming a 'world record' with one full year of continuous power export to the Chinese grid. The modular generator, whose full-rated capacity is planned to reach 3.4MW, has been continuously supplying Chinese electricity grid with clean power over the course of one year using two installed turbines with a total capacity of 1MW.

€11 million ITEG project to integrate tidal power, grid and hydrogen - EMEC

An €11 million Interreg North-West Europe (NWE) project has been launched in Orkney to develop an all-in-one solution for the generation of clean predictable energy, grid management, and the production of hydrogen from excess capacity. Led by the European Marine Energy Centre (EMEC) in Orkney, the €11m Integrating Tidal Energy into the European Grid (ITEG) project brings together partners from across the UK, France, Belgium and the Netherlands.

Wind Energy

[The fifth-largest offshore wind farm on the planet officially opens](#) - CNBC

The Race Bank offshore wind farm in the U.K. is officially open, Danish renewable energy business Orsted announced. Situated off England's North Norfolk coast, the 91 turbine facility can produce 573 MW of electricity and is capable of powering more than 500,000 homes, according to Orsted, which described the facility as the fifth-largest offshore wind farm in the world.

[Regulators apply brakes to offshore wind power project led by UMaine](#) – Press Herald

Longstanding efforts to establish an offshore wind energy industry in Maine suffered a setback Tuesday when state utility regulators voted to reopen a previously negotiated power contract to test a patented technology for deep-water floating wind farms. Since January, supporters of the Maine Aqua Ventus project had expressed concern that action by the Public Utilities Commission to alter a power-rate contract set in 2014 could doom the University of Maine-led venture just as it's reaching the critical stages for financing and permits.

[Taiwan's 120 Megawatt Formosa 1 Offshore Wind Farm Reaches Financial Close](#) – Clean Technica

The 120 MW expansion to Taiwan's first-ever offshore wind farm, Formosa 1, has reached financial close this week thanks to the completion of a NT\$18.7 billion (626 million USD) project financing deal by a consortium of eleven international and local Taiwanese banks.

[LM Wind Power Canada wins three awards at Quebec Wind Energy Industry Gala](#) – Energy Digital

The wind turbine rotor blade supplier's Canadian unit, LM Wind Power Canada, has won three awards in at the 6th Quebec Wind energy Industry Gala. The gala, presented by Siemens Gamesa, targeted the region's best wind power contributors over the past two years.

[Eni to build first wind farm in Kazakhstan](#) – Wind Power Monthly

Italian firm Eni has taken the final investment decision to build, develop and operate a 50MW wind farm in the north-west of the country. Construction of the Badamsha project in the Aktobe province will start "in the coming months", the oil and gas giant stated, with commercial operation and grid connection expected by the end of 2019.

Windlab achieves first ever environmental approval for a wind farm in Tanzania – Renew Economy

Windlab Limited today announced that it has been awarded an Environmental and Social Impact Assessment (ESIA) Certificate for the construction of the Miombo Hewani Wind Farm and Transmission line project, located 10km's north of Makambako, in central Tanzania. Miombo Hewani has been approved for up to 300MW of capacity.