



May 13, 2016

Welcome to the latest bi-weekly Tethys Blast, which will update you with new information available on Tethys, new features of Tethys, and current news articles of international interest on wind and marine renewable energy. We hope that this becomes a valuable tool to help you stay connected to your colleagues and to introduce you to new research, new contacts, and ongoing milestones in wind and marine renewable energy development.

Survey Monkey

We would like to request your assistance in reviewing Tethys (<http://tethys.pnnl.gov>). The survey consists of 6 short questions to gather input on the use of Tethys. Your feedback is important to us and helps us make Tethys an effective tool for you.

Annex IV 2016 State of the Science Report

The Annex IV 2016 State of the Science Report is available, along with the executive summary of the report in seven languages. Also available are eight short summaries of the most important aspects of the report. All are available for download at: <http://tethys.pnnl.gov/publications/state-of-the-science-2016>

In addition, Annex IV hosted a webinar on May 10 about the 2016 State of the Science Report. Information including the presentation and video recording are available on Tethys: <http://tethys.pnnl.gov/annex-iv-9>.

US DOE Announces New NOI

The US Department of Energy, Office of Energy Efficiency & Renewable Energy (EERE) has issued a [notice of intent \(NOI\)](#) on a funding opportunity for eagle impact minimization technologies and field testing opportunities related to wind energy development.

New Documents on Tethys

A total of 29 new documents have been added to Tethys in the last two weeks! These documents have been hand-selected for their relevance to the environmental effects of wind and marine renewable energy. The listings below are short introductions to several new or popular documents that can be accessed through the accompanying Tethys links:

[Wintering Sandhill Crane Exposure to Wind Energy Development in the Central and Southern Great Plains, USA - Pearse et al. 2016](#)

Numerous wind energy projects have been constructed in the central and southern Great Plains, USA, the main wintering area for midcontinental Sandhill Cranes (*Grus canadensis*). In an initial assessment of the potential risks of wind towers to cranes, we estimated spatial overlap, investigated potential avoidance behavior, and determined the habitat associations of cranes. We used data from cranes marked with platform transmitting terminals (PTTs) with and without global positioning system (GPS) capabilities.

[A Portable, Real-Time Passive Acoustic System and Autonomous Hydrophone Array for Noise Monitoring of Offshore Wave Energy Projects - Haxel et al. 2016](#)

Information on the underwater sound generated by operating wave energy converters (WECs) in the open ocean remains limited. The published studies on full-scale devices have been restricted to individual types of WECs and limited by instrument difficulties, providing an inconclusive view of the broad range of possible noise level amplitudes and affected frequencies. The resulting lack of understanding and uncertainty surrounding the potential for acoustic impacts on marine ecosystems from elevated noise levels associated with WEC project activities has brought about a conservative regulatory process for permitting and licensing in U.S. waters.

[An Indicator to Objectively Quantify the Visual Impact of an Offshore Wind Farm - Gonzalez-Rodriguez 2016](#)

This study describes a method to quantify the visual impact of an offshore wind farm, as seen from the coast. In brief, the method involves distinguishing between the visual impact due to the intrusion in the observer's vision field and the un-aesthetic effect of the arrangement unevenness. Both parameters, visual intrusion and unevenness, can be quantifiable; therefore, a final indicator for the visual impact of the wind farm can be calculated for a specific wind farm layout.

[Integrating a Multibeam and a Multifrequency Echosounder on the Flowbec Seabed Platform to Track Fish and Seabird Behavior around Tidal Turbine Structures - Williamson et al. 2016](#)

The drive towards sustainable energy has seen rapid development of wave and tidal stream (MRE) energy. However, little is known of any environmental and ecological

effects. The FLOWBEC-4D project developed an upward facing sonar platform to investigate how currents, waves and turbulence at MRE sites may influence the behavior of marine wildlife, how important collision risks might be, and how MRE devices (MREDS) might alter the behavior of wildlife.

[Large-Eddy Simulation of Offshore Wind Farm - Yang et al. 2014](#)

A hybrid numerical capability is developed for the simulation of offshore wind farms, in which large-eddy simulation is performed for the wind turbulence, and a potential flow based method is used for the simulation of the ocean wave field. The wind and wave simulations are dynamically coupled. The effect of wind turbines on the wind field is represented by an actuator disk model. This study focuses on the effect of wind-seas, and the turbine motion is treated as negligibly small.

Current News

Current news articles of international interest on wind and marine renewable energy include:

[Birds scupper £2bn offshore wind farm](#)

A £2 billion offshore wind farm is set to be scrapped after it lost a Government subsidy contract due to an ongoing legal challenge over its impact on birds. The proposed Neart na Gaoithe wind farm would see 64 turbines built nine miles off the coast of Fife and was one of only two offshore wind projects to win a subsidy contract from the Government last year.

[Sustainable Marine Energy to connect tidal system to grid within months](#)

Sustainable Marine Energy (SME) has announced plans connect its first PLAT-O tidal energy system to the grid in a matter of months, following a successful £4.5m funding round. The marine engineering company has moved its base to Orkney, where it plans to begin deployment of an array of the 100kW prototype system at the European Marine Energy Centre (EMEC).

[Mars Begins Powering All UK Operations With Scottish Wind Farm](#)

A new partnership between the UK arm of Mars and energy company Eneco UK will see all Mars operations in the UK powered by the new Moy Wind Farm in Scotland. Mars UK made the announcement this week, revealing that it had signed a deal with Eneco UK to acquire the electricity generated by the Moy Wind Farm to power its MARS bars, WHISKAS cat food, EXTRA gum, and UNCLE BEN'S rice productions in the UK.

[New Offshore Wind Project Launched in China](#)

The Belgian dredging, environmental and marine engineering group DEMA and China COSCO Shipping – the largest shipping company in the world – have formed a joint venture to develop offshore wind energy in China. The cooperation is in line with the Chinese climate vision and its aim to develop renewable energy...

[Cape Cod Canal Will Be Tidal Energy Testing Site](#)

The Cape Cod Canal will soon become home to a test site for companies looking to harness the power of tidal energy. The non-profit Marine Renewable Energy Collaborative is spearheading the project and hopes to have it running by late summer.

[Wind Turbine Generator Market Review of Manufacturers and China Region Analyzed in 2016 Report](#)

Global and Chinese Wind Turbine Generator Market 2016 Research Report initially provides a basic overview of the industry that covers definition, applications and manufacturing technology, post which the report explores into the international and Chinese players in the market.