TETHYS BLAST

February 3, 2017

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.

Tethys Peer Review Survey

We thank you for your interest in Tethys and for being a part of the international community with an interest in addressing the environmental impacts of wind and marine renewable energy. We ask that you fill out a brief, 5 minute survey to help us evaluate and guide further development of Tethys. Please fill out the survey before **February 10th**, available at https://www.surveymonkey.com/r/SYW5QZL

Webinar Recording Available

Annex IV held a webinar on 18 January 2017 about Recent Research of Interest to the MRE Industry, specifically the importance of EMF from cables and fish interaction with tidal devices. A recording is now available on Tethys.

Call for Abstracts

The Conference on Wind energy and Wildlife impacts (CWW) 2017 will be held in Estoril, Portugal on September 6-8. The call for abstracts is now open and will run until February 15, 2017. Submit your abstract here.

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:

Visualising the Aspect-Dependent Radar Cross Section of Seabirds over a Tidal Energy Test Site Using a Commercial Marine Radar System - McCann & Bell 2017

> The long-term monitoring of seabirds around proposed marine renewable energy (MRE) sites is vital to assess the large-scale and long-term environmental impacts of MRE installations. Marine radar could be a valuable tool to augment traditional seabird surveys but the problem of aspect dependency of the generic radar cross section (RCS) of live birds in flight must be understood before radar data is correctly interpreted.

Understanding the Risk of European Protected Species (Bats) at Onshore Wind Turbine Sites to Inform Risk Management - Mathews 2016

> Evidence that wind turbines potentially pose a collision threat to bats has been available from the USA and some European countries since the early 2000s. However the scale of any risk in the UK was unknown. The Department for Environment, Food and Rural Affairs, Department of Energy and Climate Change, Natural Resources Wales, Scottish Natural Heritage, Natural England and RenewableUK therefore commissioned this research project in 2010. It is the first attempt, anywhere in the world, to assess the impact of wind turbines on bats at a national scale through the systematic survey of a representative sample of wind energy facilities.

Monitoring the Condition of Marine Renewable Energy Devices through Underwater Acoustic Emissions: Case study of a Wave Energy Converter in Falmouth Bay, UK - Walsh et al. 2017

> Maintaining the engineering health of Marine Renewable Energy Devices (MREDs) is one of the main limits to their economic viability, because of the requirement for costly marine interventions in challenging conditions. Acoustic Emission (AE) condition monitoring is routinely and successfully used for land-based devices, and this paper shows how it can be used underwater. We review the acoustic signatures expected from operation and likely failure modes of MREDs, providing a basis for a generic classification system.

A Well-Being Framework for Impact Evaluation: The Case of the UK Offshore Wind Industry - Hattam et al. 2017

> Growing levels of energy consumption and concern over the environmental consequences of energy production are leading to an increased investment in renewable energy generation. Despite an important relationship between energy production, consumption and well-being, little attempt has been made to provide a holistic assessment of how renewable energy sectors can contribute to different aspects of human well-being.

Review of Information Sources to Support Connectivity Assessments under the Habitats Regulations - Carse 2016

A working group was convened by The Crown Estate to focus on exploring routes to refine the consenting process for marine renewable energy sites under 3MW. One proposal considered the development of a tool to facilitate the assessment of connectivity between small marine renewable energy project sites and the features of designated European marine sites, or the 'Natura 2000' network.

Events:
ORJIP Ocean Energy (http://www.orjip.org.uk/) 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 also wishes to make you aware of the following opportunities:

- The Joint UK-China Offshore Renewable Energy announced the second of three calls, providing up to £4M to support UK researchers developing the next generation of technologies for safe, secure, cheap and efficient provision of clean energy.
- Several Horizon 2020 calls have deadlines in February 2017.
- The FORESEA (Funding Ocean Renewable Energy through Strategic European Action) Programme's second Call for support package applications is open until 28 February 2017.

News and Current Events

Marine Renewable Energy

Atlantis builds MeyGen momentum

Atlantis Resource has successfully installed a third tidal turbine at its MeyGen project off the north coast of Scotland. The company said on social media that vessel Olympic Ares completed the task overnight. James Fisher is leading installation of the Andritz Hydro Hammerfest hardware using the Bibby vessel.

Nova Innovation to complete Shetland tidal array by April

Edinburgh-based tidal energy developer Nova Innovation plans to add the final tidal turbine to the Shetland tidal array by April 2017. Nova Innovation has engaged a multicat vessel C-Odyssey from the Orkney-based marine renewables services provider Leask Marine to conduct offshore and subsea operations on a tidal energy array in the Bluemull Sound, Shetland.

Ireland to lead €10.5m EU marine renewable energy project

The Marine and Renewable Energy Ireland centre based in University College Cork (UCC) will lead a €10.5m EU project to accelerate offshore renewable energy technology and infrastructure. In an announcement, UCC revealed that the MaREI centre will lead the €10.5m EU MaRINET2 initiative, which aims to accelerate the development of offshore renewable energy technologies and infrastructure.

UK Industry welcomes Hendry Review on tidal lagoons

A new Government-backed report has highlighted the potential of tidal lagoon technology and the key role it will play in providing the UK with reliable and affordable energy. The Hendry Review was carried out by Charles Hendry, a former energy minister, and concluded that tidal lagoons can play a cost-effective part of the UK's energy mix. With large scale tidal lagoons almost certain to be able to play a valuable and competitive role in our electricity system in the future.

Wind Energy

New York is Building the Largest Offshore Wind Farm in the United States

Just off the coast of Long Island, they've decided to build the largest offshore wind farm in the entire United States. On January 25, the Long Island Power Authority approved the South Fork Wind Farm, taking a huge step towards a cleaner future. According to reports, the South Fork Wind Farm will be done by 2030, but could be up and running by 2022. If all goes well, it will generate enough power 50,000 homes in Long Island, or about 2.4 gigawatts.

Gargantuan offshore wind turbine crushes record for most energy produced in 24 hours

There's a massive offshore wind turbine in Østerild, Denmark breaking energy generation records left and right. MHI Vestas Offshore Wind — a joint venture between Vestas Wind Systems and Mitsubishi Heavy Industries — showed off its 9 MW turbine prototype in December 2016, an upgrade to its V164-8.0 MW version. The Goliath of wind turbines generated nearly 216,000 kWh over 24 hours during its December test, breaking the previous record for energy generation record for a commercially available offshore wind turbine.

Dong Energy to phase out coal as world's largest wind farm moves ahead

Denmark's Dong Energy is preparing to phase out European coal power plants by 2023 as it moves ahead with a multi-billion dollar renewables investment plan, including the development of the world's largest offshore wind farm. The energy company has cut its use of coal from 6.2 million tonnes a decade ago to 1.7m tonnes last year, but by 2023 it said all its power plants would run on sustainable biomass, or wood pellets, sourced from the Baltic states.

LEEDCo's IceBreaker lake wind farm files for Ohio state permit

Icebreaker Windpower, Inc., the company created by Fred. Olsen Renewables, USA, to build a pilot wind farm in Lake Erie, has filed formal applications with the Ohio Power Siting Board. The company is proposing to build a demonstration six-turbine wind farm in the lake about 8 to 10 miles northwest of downtown at an estimated cost of $126 million.