TETHYS BLAST

November 25, 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.

Tethys Security Improvements

Tethys has recently improved cyber security for the website, forcing encryption by going to the "https" version of the site. We have tested the secure site for firewall conflicts, but if you encounter any problems, please send us an email.

Upcoming Conferences

The Wind Wildlife Research Meeting XI will be held in Broomfield, USA on November 29-December 2, 2016.

World Ocean Council's Sustainable Ocean Summit will be held in Rotterdam, Netherlands on November 30-December 2, 2016.

The European Geosciences Union General Assembly 2017 will be held in Vienna, Austria on April 23-28, 2017. There will be a session about **the effects of marine renewable energy (installations) on the marine environment**, hosted by Louise Kregting of Queen's University Belfast. Abstracts are due by January 11th.

The 12th European Wave and Tidal Energy Conference (EWTEC) will be held in Cork, Ireland on August 27-September 1, 2017. Abstracts are due by January 6th.

New Documents on Tethys

New documents 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:

Computational Prediction of Pressure Change in the Vicinity of Tidal Stream Turbines and the Consequences for Fish Survival Rate - Zangiabadi et al. 2017 (early release)

> The presence of Tidal Stream Turbines (TST) for tidal power production, leads to changes in the local physical environment that could affect fish. While other work has considered the implications with respect to conventional hydroelectric devices (i.e. hydroelectric dams), including studies such as physical impact with the rotors and pressure variation effects, this research considers the effects of sudden changes in pressure and turbulence on the hypothetical fish with respect to TSTs.

Sustainable Decommissioning of an Offshore Wind Farm - Topham & McMillan 2017 (early release)

> The offshore wind industry has historically focused on setting up new projects, with the decommissioning phase receiving little attention. This can cause future problems as decommissioning needs to be planned at the beginning to prevent complications that may arise, as it implies important operations and high costs. There are numerous features that make decommissioning a challenge, such as the marine environment, the technical limitations of vessels and the lack of specific regulations that determine what should be done, increasing the uncertainty of the process.

Refining Estimates of Collision Risk for Harbour Seals and Tidal Turbines - Band et al. 2016

> There is currently considerable uncertainty regarding the potential for lethal and injurious interactions between marine mammals and tidal turbines. This uncertainty is particularly concerning for harbour seals in the Orkney and North Coast management unit, where the population has been undergoing a protracted decline. This has led to constraints being placed on tidal developments in this area until more information is available on the real risks presented to this species by tidal turbines.

A Review of the Impacts of Onshore Wind Energy Development on Biodiversity - Tosh et al. 2014

> In general, the impact of wind energy developments can be summarised in 3 categories: (1) Displacement through disturbance, (2) Direct mortality through collision with operational turbine blades or powerlines, (3) Direct habitat loss through construction of windfarm infrastructure. Compared to birds and bats there has been relatively little work conducted on the impacts, if any, on terrestrial mammals, reptiles, amphibians, invertebrates, vascular plants, habitats or ecosystems. Therefore, it is difficult to generalise the wider impacts of wind energy on biodiversity per se.

[Moving from Consultation to Participation: A Case Study of the Involvement of Fishermen in Decisions Relating to Marine Renewable Energy Projects on the Island of Ireland] - Reilly et al. 2016

The development of the marine renewable energy (MRE) will impact traditional users of the marine resource, such as commercial fishermen. This could potentially lead to opposition and spatial conflict. The successful development of the MRE sector will heavily depend on the acceptance of projects by fishing communities. Effective stakeholder engagement is crucial to enhancing acceptance among fishermen. The consultation process is one of the key ways in which to engage fishermen and enable them to participate in decision-making.

Events:
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 provided content input to this Tethys Blast. ORJIP also wishes to make you aware of the following opportunities:

- IRENA/ADFD Open Fifth Round of Funding for Renewable Energy Projects

Current News

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

Marine Renewable Energy

AquaHarmonics Wins the Energy Department's Wave Energy Prize

The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy announced AquaHarmonics as the winner of the Wave Energy Prize – an 18-month design-build-test competition which comes with a $1.5 million grand prize. CalWave Power Technologies and Waveswing America were awarded second and third place, respectively, with $500,000 and $250,000 in cash prizes.

First power for Atlantis at MeyGen

Atlantis Resources has produced first power from its 6MW MeyGen tidal energy project in the Pentland Firth off the north coast of Scotland. The developer said an initial Andritz Hydro Hammerfest 1.5MW turbine was successfully installed last week and plugged into a pre-laid cable.

Mutriku wave plant installs monitoring equipment

Mutriku wave energy plant has been equipped with pressure sensor and data logger as part of the EU-funded OPERA project. The equipment, provided by the Canadian oceanographic equipment manufacturer RBR, was installed in front of the Mutriku wave power plant, located at Bay of Biscay, Mutriku, Spanish Basque Country.

PTEC announces partnership with Tocardo and Schottel

Perpetuus Tidal Energy Centre (PTEC) today announced its major partnerships with global tidal turbine manufacturers, SCHOTTEL HYDRO GmbH and TOCARDO Tidal Turbines. The transformational tidal energy generation project, having achieved all key project consents earlier this year and with a signed grid connection offer, is now a step further towards delivery. The 30MW project, to be created off the Isle of Wight, will allow long-term operation of SCHOTTEL HYDRO and TOCARDO turbine arrays.

Wave energy device successfully deployed at BiMEP site

The new device, dubbed Marmok-5, uses waves power to spin turbines that drive an associated electricity generator, which can produce up to 30kW – enough to run a medium sized business. The final part for the commissioning of the device, a mooring load measurement unit that will provide a data link to monitor extreme conditions at the site, was recently installed by a team of experts from University of Exeter, Oceantec Energías Marinas and dive company CDA Bilbao.

Wind Energy

China Sets Offshore Wind Farm Guidelines

China's State Oceanic Administration has spelled out comprehensive guidelines for offshore wind farms that could accelerate wind power installations – and related heavy-lift projects – along China's 14,500-kilometer-long coast. The guidelines came as energy officials in northern China announced the first pilot offshore wind complex in that part of the country, and about four months after China's first, fully commercial offshore wind farm was launched in the nation's south.

Deepwater unveils plans for 120-MW Maryland offshore wind farm

Deepwater Wind unveiled plans to build a 120-MW wind farm off the coast of Maryland. The company said it has filed an application with the Maryland Public Service Commission (MPSC) for approval of the project, called the Skipjack Wind Farm. It added that construction works could start as early as 2020 if consent is granted.

Siemens celebrates milestone for new offshore wind-turbine manufacturing plant

Siemens celebrated the “topping out” ceremony for its new wind-turbine manufacturing facility in Cuxhaven, Germany. The structural steel uprights are now standing for the production building, which will offer 56,000 square meters of floor space. This new facility in northern Germany is one of Siemens’ most important investment projects in recent years, with some EUR 200 million invested in what is the company’s first offshore wind-turbine production plant in Germany.

Way cleared for proposed South Dakota wind farm

South Dakota's first proposed large-scale wind farm west of the Missouri River has cleared the permitting phase, its backers said Tuesday. Wind Quarry LLC issued a written announcement about its proposed 103-megawatt wind farm 10 miles northeast of Newell. The company said the Western Area Power Administration, or WAPA, issued a decision that the project would have no significant environmental impact.