TETHYS BLAST

October 14, 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.

Annex IV and ORJIP-OE Collaboration

Annex IV and ORJIP-OE have signed an agreement that will enhance collaboration and data sharing to understand and reduce uncertainty about potential environmental effects of MRE development. Both organizations address issues that are challenging to the siting and permitting/consenting of wave and tidal devices. For more details: http://tethys.pnnl.gov/tethys-stories/collaboration-between-two-international-networks. Expect to see periodic news about ORJIP-OE on Tethys Blast.

Upcoming Conferences and Meetings

The 3rd Asian Wave and Tidal Energy Conference (AWTEC) is going be held in Marina Bay Sands, Singapore on October 24-28, 2016. Last day to register is October 15. For more details: http://www.awtec.asia/awtec-2016/.

The Wind Wildlife Research Meeting XI is going to be held in Broomfield, Colorado, US on November 29-December 2, 2016. This meeting is organized by the American Wind Wildlife Institution (AWWI). For more details: http://www.nationalwind.org/research/meetings/wind-wildlife-research-meeting-xi/.

Ocean Energy Europe (OEE) is going to be held in Brussels, Belgium on November 8-9, 2016. For more details: http://www.oceanenergy-europe.eu/oee-2016.

New Documents on Tethys

New documents are added to Tethys every week, 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:

Data Based Estimates of Collision Risk: An Example Based on Harbour Seal Tracking Data around a Proposed Tidal Turbine Array in the Pentland Firth - Thompson et al. 2016

> This report presents an estimate of the risk of collision between harbour seals (*Phoca vitulina*) and tidal turbines on the basis of observed behaviour patterns derived from targeted telemetry tracking studies and recent population survey data. The collision risk associated with a proposed turbine array development in the Pentland Firth was used as a worked example of the method.

Use of Baited Remote Underwater Video (BRUV) and Motion Analysis for Studying the Impacts of Underwater Noise upon Free Ranging Fish and Implications for Marine Energy Management - Roberts et al. 2016

> Free-ranging individual fish were observed using a baited remote underwater video (BRUV) system during sound playback experiments. This paper reports on test trials exploring BRUV design parameters, image analysis and practical experimental designs. The methods described here indicate the efficacy of BRUV to examine behaviour of free-ranging species to noise playback, rather than using confinement.

Marine Biogeographic Assessment of the Main Hawaiian Islands - Costa & Kendall 2016

> The state of Hawai‘i is working to develop local renewable energy sources to reduce its dependence on fossil fuels. Most of the State’s potential renewable energy resources (notably, wind) are located in federal waters from 3 to 200 nm offshore. This biogeographic assessment addresses three main questions: (1) how are select species or taxonomic groups distributed spatially and temporally around the Main Hawaiian Islands?; (2) what environmental conditions influence these distributions?; and (3) what significant gaps exist in our knowledge about the biogeography of the area?

Avoidance of Wind Farms by Harbour Seals is Limited to Pile Driving Activities - Russell et al. 2016

> Here, we present the results of a telemetry study on harbour seals *Phoca vitulin*a in The Wash, south-east England, an area where wind farms are being constructed using impact pile driving. We investigated whether seals avoid wind farms during operation, construction in its entirety, or during piling activity. The study was carried out using historical telemetry data collected prior to any wind farm development and telemetry data collected in 2012 during the construction of one wind farm and the operation of another.

[Birds and Wind-Energy Best-Practice Guidelines: Best-Practice Guidelines for Assessing and Monitoring the Impact of Wind Energy Facilities on Birds in Southern Africa] - Jenkins et al. 2015

The wind-energy industry is expanding rapidly in southern Africa. While experiences in other parts of the world suggest that this industry may be detrimental to birds (through the destruction of habitat, the displacement of populations from preferred habitat, and collision mortality with wind turbines, guyed masts and associated power lines), these effects are highly site- and taxon-specific. Raptors, large terrestrial species and wetland birds are likely to be most vulnerable, and areas of higher topographic relief are often implicated in negative impact scenarios.

working to accelerate offshore consenting

Funding Calls and Opportunities:

- Update on UK eligibility for Horizon2020 funding http://www.euenergyfocus.co.uk/

Events:

ORJIP Ocean Energy will be attending the following events in the coming weeks, please get in touch should you wish to meet up with the team:

- World Ocean Council's Sustainable Ocean Summit in Rotterdam on November 30-December 2 (http://oceancouncil.org/).
- Asian Wave and Tidal Energy Conference (AWTEC) in Singapore on October 24-28 (http://www.awtec.asia/awtec-2016/)
- Ocean Energy Europe, Brussels, November 8-9 (http://www.oceanenergy-europe.eu/oee-2016)

Current News

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

Scotrenewables installs SR2000 tidal device

Scotrenewables Tidal Power (SRTP) has installed the SR2000 tidal turbine on its moorings at the European Marine Energy Centre (EMEC) as part of site commissioning and testing. The turbine, developed and manufactured by SRTP, was towed to site by Green Marine's vessel Green Isle yesterday, October 12, and was subsequently connected to its moorings at EMEC's Fall of Warness tidal testing site

30MW Tamra offshore wind farm delivers first power to South Korea

South Korea's first commercial-scale offshore wind farm, located in the coastal waters of Jeju island, has delivered first power, with full operation expected in 2017. The wind farm, comprising ten 3MW turbines manufactured by Doosan Heavy Industries & Construction, marks an important step in South Korea's nascent offshore wind market, which has stubbornly remained at 5MW in size since 2011.

Global Wind Energy Capacity Reaches 456 GW, Set To Hit 500 GW By Year-End

Global wind energy capacity reached 456 GW at the half-year mark of 2016, and is set to hit 500 GW by the end of the year, according to new figures from the World Wind Energy Association. Published this week, the World Wind Energy Association (WWEA) released its half-year report, revealing that 21 GW of new wind installations were completed during the first half of the year, bringing the global cumulative total up to 456 GW. Further, the WWEA predict that global wind capacity will reach 500 GW by the end of the year.

Irish Company Prepares to Test Wave Energy Device in Galway Bay

Irish company, Sea Power, is preparing to test their prototype wave energy device at the Galway Bay Marine and Renewable Energy Test Site in the coming weeks. Following successful completion of testing at small scale, the company, which received grant support from the Sustainable Energy Authority of Ireland (SEAI), is now progressing to quarter scale testing in open sea conditions for the first time.

Measures for cutting offshore wind farm noise can 'hugely reduce' impact on porpoises, study finds

WWF-backed research finds big benefits for porpoise populations can be achieved through cost-effective offshore wind farm noise reduction methods. Highly effective measures can be taken to "hugely reduce" the underwater noise impact from offshore wind farms on harbour porpoise populations, according to a new WWF-UK-backed study.

GE to Buy Wind Turbine Blade Maker for $1.65 Billion

General Electric Co. is buying LM Wind Power, a manufacturer and supplier of rotor blades to the wind industry, for $1.65 billion. GE says the move brings in-house the design and manufacturing of wind turbine blades for its renewable energy business and makes it easier to increase energy output.

Wave energy researchers dive deep to advance clean energy source

One of the biggest untapped clean energy sources on the planet -- wave energy -- could one day power millions of homes across the U.S. But more than a century after the first tests of the power of ocean waves, it is still one of the hardest energy sources to capture. Now, engineers at Sandia National Laboratories are conducting the largest model-scale wave energy testing of its kind to improve the performance of wave-energy converters (WECs).