# TETHYS BLAST

April 14, 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.

## Research Position Available in Scotland

The Environmental Research Institute (ERI) is seeking to recruit a highly motivated scientist to lead their research in 'Renewable Energy and the Environment'. This emergent research centre is situated in the town of Thurso in the northern Highlands of Scotland. Details available here.

## Expert Forum Recording Available

Annex IV held an expert forum on April 4 about Monitoring around Tidal Arrays. During this meeting, invited experts discussed whether research around single turbines can provide insight into arrays, how monitoring will depend on the scale of the array, and how developers perceive the industry will develop. A recording is now available on Tethys.

# 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:

**Effects of Hydrokinetic Turbine Sound on the Behavior of Four Species of Fish Within an Experimental Mesocosm - Schramm et al. 2017**

> The development of hydrokinetic energy technologies (e.g., tidal turbines) has raised concern over the potential impacts of underwater sound produced by hydrokinetic turbines on fish species likely to encounter these turbines. To assess the potential for

behavioral impacts, we exposed four species of fish to varying intensities of recorded hydrokinetic turbine sound in a semi-natural environment.

**Greater Sage-Grouse Habitat Selection, Survival, and Wind Energy Infrastructure - LeBeau et al. 2017**

Increases in wind energy development are especially noticeable in prairie habitats with high wind capacity. This has raised concerns over effects on grouse species including greater sage-grouse (*Centrocercus urophasianus*). We monitored 346 female greater sage-grouse via telemetry from 2009 to 2014 in southeastern Wyoming, within a control area and an area influenced by a wind energy development to estimate the potential effects of wind energy infrastructure on greater sage-grouse habitat selection and demography.

**Stochasticism in Noise Generated by an Array of Marine Hydrokinetic Devices - Halfa et al. 2016**

Marine hydrokinetic (MHK) devices generate electricity from the motion of tidal and ocean currents and ocean waves and provide another source of renewable energy. Additionally, MHK devices are also a new source of anthropogenic noise in the marine ecosystem and must meet regulatory guidelines that mandate a maximum amount of noise that may be generated. In the absence of measured levels from in-situ deployments, a model for predicting the propagation of sound from an array of MHK sources in a real environment needs to be established.

**Tafila Region Wind Power Projects: Cumulative Effects Assessment - International Finance Corporation 2017**

The IFC (International Finance Corporation) commissioned the Tafila Region Wind Power Project Cumulative Effects Assessment to help promote more sustainable wind energy investments in Jordan. Focusing on biodiversity, this innovative initiative is the first of its kind in the Eastern Europe, Middle East, and North Africa region. Five wind farm developers agreed to share and pool their pre-construction environmental survey data, representing a remarkable resource. This collaborative approach, a key component of the CEA process, allows a consistent method for identifying and managing E&S risks when developers are working in close proximity.

**Requirements and Criteria for the Design and Planning of Ocean Energy Farms - DTOcean 2015**

This document reviews existing approaches and methodologies for the analysis of ocean energy arrays with a clear focus on the results and conclusions provided by previous experiences. The key outcome is the definition of quantifiable and qualitative metrics for economic viability, reliability and environmental impact which have been adopted in the global set of tools developed within the project DTOcean.

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:

- EU-funded Marine Renewables Infrastructure Network (MaRINET2) project has a funding call open until May 20. The call is open to offshore energy technology developers, including wind, wave and tidal energy at system and component level.
- Wave Energy Scotland (WES) has issued its fourth funding call for complete control systems suitable for use with a variety of wave energy converters. Applications must be submitted by June 12 mid-day.

# News and Current Events

**Marine Renewable Energy**

## Penguin powers UK grid with wave energy

Wello's Penguin wave energy converter (WEC) has successfully generated electricity into the national grid off the west coast of Orkney. The Penguin was installed at the European Marine Energy Centre's (EMEC's) grid-connected wave test site at Billia Croo at the beginning of March by Orkney-based Green Marine. This is the first of three WEC's due to be installed at EMEC over the next three years as part of the CEFOW (Clean Energy from Ocean Waves) project, funded by the European Union's Horizon 2020 research and innovation programme.

## SE Asia in the spotlight for new floating tidal technology

International collaboration between European and Asian clean energy developers has resulted in the introduction of a new floating tidal energy solution for Southeast Asia. Sustainable Marine Energy (SME), and Schottel Hydro, clean energy developers from UK and Germany respectively, have been working together to develop an integrated surface floating tidal platform solution known as PLAT-I.

## FaBTest renews The Crown Estate lease

The lease for FaBTest, operational since 2011, has been renewed for a further five years, the University of Exeter informed. The site has seen two different technologies deployed over its operational period so far – Fred Olsen's Bolt Lifesaver device, and PolyGen's Volta wave energy device.

## EMEC testing planned for EC-OG's ocean energy converter

UK-based firm EC-OG will test its Subsea Power Hub (SPH), a turbine system producing power from ocean currents, at the European Marine Energy Centre (EMEC) in Orkney. Installation of a full-scale SPH device at the Shapinsay Sound test site will be carried out in April, EMEC said on Friday. It pointed out that the test programme will be a subsea industry first with the combination of a marine energy converter connected to lithium-based energy storage.

**Wind Energy**

## EnBW wins bid for 900-MW subsidy-free German offshore wind farm

German utility Energie Baden-Wuerttemberg AG (ETR:EBK), or EnBW, said today its bid to build a 900-MW offshore wind farm without state subsidies has been successful in Germany's first offshore wind auction. EnBW's bid for the He Dreiht project was accepted in the tender, which received four bids for 1,490 MW of capacity, 60 MW short of the targeted 1,550 MW.

## Chinese energy giant on track to build world's largest offshore wind farm

State Power Investment Corporation (SPIC), one of the top five power generators in China, is making swift progress in raising its planned 800 megawatts wind power farm off the coast of eastern China's Yancheng, Jiangsu province. Once completed, the farm will eclipse the 630 mW London Array as the world's largest offshore wind farm. It is set to enter full operation in 2018.

## German survey on environment highlights gap between ambition and reality

A biannual publication by Germany's environment ministry measures the country's views on air pollution, climate change and even plastic bags - and shows how those attitudes occasionally outpace realities like politics and pocketbooks. Public attitudes are one reason why Germany's boldest environmental endeavor, the Energiewende - a government effort to shift from nuclear energy and fossil fuel to renewable sources - continues to win support.

## Bill could scuttle University of Maine offshore wind project near Monhegan, US

A bill aimed at moving a wind energy test site farther from Monhegan Island would have the practical effect of ending Maine’s bid to build the country’s first commercial-size, floating wind turbines, according to a federal Department of Energy official.