TETHYS BLAST

October 27, 2017

The bi-weekly Tethys Blast will update you with new information on Tethys, news article of international interest, and opportunities in wind and marine renewable energy. We hope you find this a valuable tool to keep you connected to colleagues, new research, opportunities, and industry milestones.

EIMR is Back!

The conference on Environmental Interactions of Marine Renewables (EIMR) will be held in Orkney, Scotland on April 24th – 27th 2018. The conference focuses on environmental effects of marine renewable energy. Abstracts are due December 20th 2017. The full announcement for EIMR can be found at: https://www.egis.hw.ac.uk/eimr2018/.

ICOE to be held in France

The International Conference on Ocean Energy (ICOE) will be held in Normandy, France on June 12th – 14th 2018. ICOE is sponsored by the Ocean Energy Systems (OES) collaboration of nations as a global marine energy event focused on the industrial development of ocean energy. ICOE aims to accelerate development by stimulating collaboration networks between companies, researchers, and development centers. This includes participants sharing recent experiences from research and demonstration efforts. Abstracts for papers are due November 30th 2017. The full announcement for ICOE can be found at: http://icoe2018normandy.eu/.

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:

Possible Impacts of Offshore Wind Farms on Seabirds: A Pilot Study in Northern Gannets in the Southern North Sea - Garthe et al. 2017

> We studied the impact of offshore wind farms on the distribution of Northern Gannets in the southern North Sea. Distributions were derived from ship-based and aerial-transect counts, and from global positioning system (GPS) tracking of chick-rearing adults from the colony on Helgoland. Foraging trips of tagged Gannets lasted from 0.4 to 53.5 h, with a total distance flown per trip of 4.7–937.9 km, and range of 2.0–320.8 km. Gannets largely avoided the wind farm area north of Helgoland.

Acoustic Life Cycle Assessment of Offshore Renewables - Implications from a Wave-Energy Converter Deployment in Falmouth Bay, UK - Blondel and Walsh 2017

> Marine Renewable Energy is developing fast, with hundreds of prototypes and operational devices worldwide. Two main challenges are assessing their environmental impacts (especially in near-shore, shallow environments) and ensuring efficient and effective maintenance (requiring specialised ships and fair weather windows), compounded by the lack of long-term measurements of full-scale devices. We present here broadband measurements (10 Hz to 32/48 kHz) acquired at the Falmouth Bay Test site (FaBTest, UK) from 2010 onwards, for a 16-m ring-shaped Wave Energy Converter, in waters up to 45 m deep.

Biodiversity and Wind Farms in Portugal: Current Knowledge and Insights for an Integrated Impact Assessment Process - Mascarenhas et al. 2018

> This book presents a review of the state-of-the-art knowledge on the interactions between biodiversity and wind energy development, focused on the Portuguese reality. The volume addresses the particularities of the impact assessment procedures in Portugal, contrasting it with the international practices and presenting its main findings by covering the following broader themes: i) evaluation of spatial and temporal dynamics of wildlife affected by wind farms, including birds, bats and terrestrial mammals (in particularly Portuguese wolf population); ii) the methodologies used to assess impacts caused by this type of developments in biodiversity; iii) the best practice methodologies to implement an adaptive management approach to reconcile biodiversity and wind farms.

Developing Methodologies for Large Scale Wave and Tidal Stream Marine Renewable Energy Extraction and its Environmental Impact: An Overview of the TeraWatt Project - Side et al. 2017

> This article presents an introduction and overview of a modelling project "TeraWatt: Large scale interactive coupled 3D modelling for wave and tidal energy resource and environmental impact". The project was funded by the SUstainable PowER GENeration (SUPERGEN) "Marine Hub". SUPERGEN is an initiative of the Research Councils UK (RCUK) Energy Programme, led by the Engineering and Physical Sciences Research Council (EPSRC).

Method to Estimate the Visual Impact of an Offshore Wind Farm - Maslov et al. 2017

The objective of this paper is to introduce a method that quantifies the degree of visibility of an offshore wind farm from an observer located along the coast. Due to the relative vicinity with living areas, the installation of an offshore wind farm leads in many cases to public opposition. Therefore, there is still a need to provide planners and decision makers appropriate methods and objective criteria to actually evaluate the visual impact of offshore wind farms. The aim is to provide an intelligible method for visual assessment that can be applied and used within a full decision-aid system oriented towards offshore wind turbines.

Ocean Energy ORJIP working to accelerate offshore consenting

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:

- The EU's Executive Agency for SMEs and the European Maritime Fund launched a call for proposals around environmental monitoring of wave and tidal devices, due by 19 January 2018.
- Funding Ocean Renewable Energy through Strategic European Action (FORSEA) launched their 4th call for support packages, due by 29 June 2018.
- Ocean Energy Systems (OES) started the process to receive applications to host ICOE 2020. Expressions of interest due by March 2018.

News and Current Events

Marine Renewable Energy

Ocean Energy ready for 500kW wave device build-out - Tidal Energy Today

Irish wave energy developer Ocean Energy plans to begin with the manufacturing of its up-scaled wave energy device this month in the United States. Following the completion of the construction works, Ocean Energy's 500kW wave energy device, designed around the oscillating water column principle, will be transferred to US Navy's Kaneohe Bay Wave Energy Test Site (WETS) for a round of grid-connected sea trials. The one-year testing campaign is scheduled to begin in May 2018, according to Tony Lewis, Ocean Energy's Chief Technical Officer.

Offshore Renewables Technologies Get a Boost from FORESEA - Marine Technology News

The FORESEA program has approved six offshore renewable energy technology projects for support, in its third call for applications. FORESEA's user selection board awarded a 'Recommendation for Support" to demonstration projects led by the following technology developers to test at the indicated test center: Blackfish (EMEC), Bombora (EMEC), IDEOL (SEM REV), Interdrones (SEM REV), Kornwerderzand BV (DMEC), Scotrenewables (EMEC).

Carnegie wins $16M government grant for Albany wave project - Tidal Energy Today

Carnegie Clean Energy has secured Au$15.75 million ($12.2 million) from the Western Australian government to deliver the Albany Wave Energy Project. The Albany Wave Energy Project will involve the design, manufacturing and installation of a 1MW CETO 6 unit in Carnegie's existing license area offshore from Torbay and Sandpatch in Albany during the 2019/2020 summer weather window.

Marine renewable milestone hit as UK 'WaveSub' unveiled for sea-based testing - Marine Power Systems

Marine Power Systems (MPS), a wave power technology development company based in Wales, UK, will today unveil its quarter-scale, prototype WaveSub wave energy generator, marking its move to a new, sea-based phase of its development. The event marks a milestone in the global race to produce wave energy at a market-competitive price. Over the last nine years MPS has developed the WaveSub, using over £5million of funding secured through private investment and highly competitive grants.

Wave Energy Scotland Awards £660K for 13 New Control Systems Projects - Wave Energy Scotland

Wave Energy Scotland (WES) has just announced over £660K of funding for 13 new projects aiming to develop innovative control systems for wave energy converters. This initiative brings together control systems specialists from mature sectors such as aerospace and oil and gas, to work with Scottish technology developers in addressing the challenges of controlling and integrating Wave Energy Converter (WEC) systems and their components.

EU funding for Marine Energy Test Area - Insider Media Limited

EU funding of £1.2m has been awarded to create a test area for developers in the Milford Haven Waterway. The Marine Energy Test Area (META) will include zones for research and development and a network of seabed areas where marine energy developers can deploy and test their technology. It is hoped that the investment will attract more companies to Wales by lowering the risks of developing marine technology and supporting developers, supply-chain businesses and universities involved in marine energy projects.

Wind Energy

New Bedford poised for Revolution - reNews

> Deepwater Wind will use New Bedford in Massachusetts as a hub for its 144MW Revolution offshore wind farm, if the project is given the go-ahead by state regulators. The New Bedford Marine Commerce Terminal and other facilities in the City would be used for construction and staging operations, the company said. Deepwater said up to 700 direct regional construction jobs would be needed to complete the wind farm, which could be increased in size over time.

Vattenfall begins building largest offshore wind farm in Denmark - Reuters

> Swedish state-owned Vattenfall said on Friday it had started construction on Denmark's largest offshore wind farm in the North Sea, able to power 425,000 households. The 406 MW Horns Rev 3 wind farm will consist of 49 8.3 MW-turbines delivered by MHI Vestas, a joint venture between Vestas and Mitsubishi Heavy Industries. "Horns Rev 3 is the first of three offshore farms that Vattenfall will construct in Denmark in the coming years," said head of Vattenfall's wind division Gunnar Groebler.

Utility launches massive upgrade project on three Iowa wind farms - Radio Iowa

> MidAmerican Energy is upgrading more than 700 of its wind turbines at three wind farms spread across six Iowa counties. Adam Jacobi, spokesman for the Des Moines-based utility, says work is underway at the company's Century Wind Farm in north-central Iowa's Hamilton and Wright counties. Jacobi says, "We just recently began work on repowering, which is refurbishing, some of our older wind turbines with newer equipment that's designed to generate more electricity, more wind energy, and bring more of that clean, renewable energy to Iowa customers."

All turbines installed at Iberdrola's 350-MW Wikinger offshore wind farm - Renewables Now

> Spanish utility Iberdrola SA said today it has installed all 70 turbines at its 350-MW Wikinger offshore wind farm in the German Baltic Sea. The EUR-1.4-billion (USD 1.6bn) wind park uses 5-MW AD 5-135 turbines, made by Adwen in its factories in Germany. They were installed by Fred. Olsen Windcarrier, which used its jack-up installation vessel Brave Tern.

MHI Vestas partners with Clemson University to test 9.5MW offshore wind turbine - CTBR

> Clemson University in South Carolina has agreed to test MHI Vestas' latest V164-9.5MW offshore wind turbine at its 15MW test bench. The $35m project will involve the testing and verification programme, which will examine the turbine's gearbox and main bearings. It can help the company to gain insights about how the wind turbine will behave over a 20 year life cycle. By using big data from the test results, MHI Vestas aims to optimise the service strategy for the turbine.