TETHYS BLAST

December 14, 2018

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.

Abstracts Due

The Marine Energy Technology Symposium (METS) will be held in Washington DC on 1-3 April 2019. Abstracts are due by 11 January 2019, submitted by email to arielle.cardinal@nrel.gov.

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 excerpts from new or popular documents are listed below, accessible by the accompanying Tethys links:

Zooplankton Community Responses and the Relation to Environmental Factors from Established Offshore Wind Farms within the Rudong Coastal Area of China – Wang et al. 2018

> The goal of this study was to examine the responses of the zooplankton community to the establishment of an OWF, the causes of any observed effects, and their relation to environmental factors in the study area. This article describes the results of an investigation into the zooplankton community and the main environmental factors affecting that community based on data obtained from three cruises in May, August, and November of 2015 in the area of the Longyuan OWF in Rudong, China.

Spatial Environmental Assessment Tool (SEAT): A Modeling Tool to Evaluate Potential Environmental Risks Associated with Wave Energy Converter Deployments – Jones et al. 2018

Wave energy converter (WEC) arrays deployed in coastal regions may create physical disturbances, potentially resulting in environmental stresses. Presently, limited information is available on the nature of these physical disturbance or the resultant effects. A quantitative Spatial Environmental Assessment Tool (SEAT) for evaluating the potential effects of wave energy converter (WEC) arrays on nearshore hydrodynamics and sediment transport is presented for the central Oregon coast (USA) through coupled numerical model simulations of an array of WECs.

Bird and Bat Species' Global Vulnerability to Collision Mortality at Wind Farms Revealed Through a Trait-Based Assessment – Thaxter et al. 2017

Mitigation of anthropogenic climate change involves deployments of renewable energy worldwide, including wind farms, which can pose a significant collision risk to volant animals. Most studies into the collision risk between species and wind turbines, however, have taken place in industrialized countries. Potential effects for many locations and species therefore remain unclear. To redress this gap, we conducted a systematic literature review of recorded collisions between birds and bats and wind turbines within developed countries.

Evaluation of the shoreline effect of the marine energy farms in different coastal environments – Ruso and Onea 2018

The objective of the proposed work is to assess the possible effects on the shoreline dynamics of the marine energy farms. Three different coastal environments have been considered as case studies. The first area is located in the Portuguese continental nearshore at the European western coast of the Atlantic Ocean. The second in the Mediterranean Sea in the coastal environment of Sardinia Island and the third on the western side of the Black Sea in the Romanian nearshore.

Seabird Distribution and Abundance in the Offshore Environment Final Report – Kuletz and Labunski 2017

Seabirds are wide-ranging upper trophic level foragers and good indicators of changes in marine ecosystems. Seabirds spend most of the year offshore, yet our data gaps are greatest for the pelagic aspect of their lives. The goal of the Seabirds Offshore Project was to conduct at-sea surveys in lease sale areas and adjacent ocean planning areas, to provide current temporal and spatial data on marine birds and mammals, and submit the data to the North Pacific Pelagic Seabird Database (NPPSD).

News and Current Events

Marine Renewable Energy

Wello Launch Penguin WEC2 for H2020 Cefow Array – Wello

Finnish wave energy developer, Wello Oy, have launched the next iteration of their Penguin wave energy converter (WEC) into the water in Tallinn, Estonia, as part of the CEFOW (Clean Energy From Ocean Waves) project. The Penguin WEC2 is due to be towed to the European Marine Energy Centre (EMEC) in Orkney, Scotland, where it will be deployed alongside Wello's original Penguin WEC.

Orbital Marine Power signs agreement for Morlais Tidal Energy Project – HydroWorld

Scottish tidal technology developer Orbital Marine Power has signed an agreement to demonstrate its floating tidal technology at the Morlais Tidal Energy Project in Anglesey, Wales. The agreement with Menter Mon, the not-for-profit developers of the project, would see a commercial-scale tidal array of Orbital's recently unveiled O2 2-MW tidal turbine.

Tidal Energy Demonstration in Singapore – Hydro International

MAKO Energy (ME) will be embarking on a tidal energy demonstration project in Singapore using the MAKO.7 tidal turbines, following the signing of a collaboration agreement on 28 November 2018 with the venue host, Sentosa Development Corporation (SDC). Under the agreement, SDC will support ME's project by providing a testbed off the Sentosa Boardwalk to demonstrate the use of existing marine structures, in this case, a concrete pylon, in mounting a turbine that reduces the cost of producing electricity.

Sea Wave to Explore Environmental Impacts of Wave Energy – EMEC

A European Maritime and Fisheries Fund (EMFF) project has been launched to address long-term environmental concerns around the development of emerging wave energy technologies. The 36-month SEA Wave (Strategic Environmental Assessment of Wave energy technologies) project will provide a deeper understanding about the response of host environments to the presence of wave energy converters (WECs).

€1 million Grant Award to support Atlantis turbine development programme – SIMEC Atlantis Energy

On October 30th 2018, Atlantis announced its plans to enhance the existing 6MW MeyGen project. This grant will support the innovations required to take the MeyGen project enhancement forward with a specific focus on the turbine upgrades needed to utilise the subsea hub and shared export cable.

Crestwing anchors wave energy device off Denmark – Marine Energy Biz

The wave energy plant from Crestwing, named Tordenskiold, has been anchored in place at Frederikshavn, marking the start of the prototype's first offshore testing campaign. On December 5, 2018, Crestwing pulled the anchor connection into the wave energy plant, securing the Tordenskiold to the seabed using its three-point anchoring system.

Wind Energy

Offshore Wind: SeaTwirl Secures Funding – Asian Oil & Gas

Swedish floating wind turbine player SeaTwirl has joined the Ocean Energy Scale-Up Alliance (OESA) that has been granted funding from the Interreg North Sea Region. SeaTwirl is a vertical floating wind turbine that was tested off the west coast of Sweden in 2011. It is also the name of the company that produces the turbine.

Kincardine Project sees first floating turbine installed in North Sea – The Engineer

The North Sea's first floating wind turbine has been installed at the Kincardine Project, a wind farm located about 15km south-east of Aberdeen. Developed by Portuguese firm Principle Power, the WindFloat technology was installed by Bourbon Subsea, with Dutch company Vryhof providing mooring solutions. Its semi-submersible platform allows a mooring system to be pre-installed at sea while the turbine itself is readied at a nearby port.

Vestas opens Russian blade manufacturing site – Renewables Now

Danish turbine maker Vestas Wind Systems A/S has officially opened its blade manufacturing facility in Ulyanovsk, Russia. The Russian Association of the Wind Industry (RAWI) reports that the factory will produce more than 55 blades next year for use in Vestas' V124 turbines with capacities of 3.6 MW, 3.8 MW and 4.2 MW.

Enel Group starts construction of 244-megawatt wind farm in Mexico – CNBC

The Enel Group, via subsidiary Enel Green Power Mexico, has commenced construction of a 244 megawatt (MW) wind farm in the Mexican state of Nuevo Leon. The Dolores facility is slated to begin operations in the first half of 2020, the company said Tuesday. The wind farm will be able to produce around 850-gigawatt hours annually and will help to prevent the emission of roughly 470,000 tons of carbon dioxide per year.

More Than 680 Gigawatts of New Wind Power to Come Online By 2027 – Clean Technica

More than 680 gigawatts (GW) of new wind power is expected to come online around the globe in the next decade, according to new research from Wood Mackenzie Power & Renewables.

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 and wishes to make you aware of the following opportunities:

- The European Maritime and Fisheries Fund (EMFF) have launched a Blue Economy call for project proposals under three topics: (1) Blue Labs: innovative solutions for maritime challenges, (2) Blue Careers in Europe, and (3) Grants for the Blue Economy: investing in innovation. The deadline is 31 January 2019.
- The EU-funded MaRINET2 project has launched its third call for applications. Successful applicants will receive free access to a world-leading network of testing and research infrastructures. The call is open to offshore energy technology developers, including wind, wave and tidal energy at system and component level. It is open until 15 December 2018.
- Industry bodies Subsea UK and National Subsea Research Initiative (NSRI) in partnership with Scottish Enterprise have launched a second call for R&D partnerships between Scotland and Japan to drive forward innovative subsea technologies. Initial expressions of interest are open until 15 February 2019.