TETHYS BLAST

July 27, 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.

MHK Maritime Markets Report

The US Department of Energy Waterpower Technologies Office has published a report on 12 maritime markets that represent potential opportunities for providing marine energy for new and emerging markets, most smaller than utility scale electricity markets. They are seeking comments and input on the content. Please download the report and comment on any portions of the report you like; the deadline for online comments has been extended to July 31st. Slides from an informational webinar are available.

US DOE Funding Opportunity: Advanced Wind Research to Reduce Costs and Environmental Impacts

The US Department of Energy (DOE) Wind Energy Technologies Office (WETO) released a funding opportunity announcement for three topic areas:

- Topic Area 1: Advancing Smart Curtailment Strategies
- Topic Area 2: Advanced Component Research and Development
- Topic Area 3: Development and Validation of Offshore Wind Monitoring and Mitigation Technologies

More information can be found here. Concept papers are due August 15.

13th Ocean Renewable Energy Conference

The 13th Ocean Renewable Energy Conference will be held in Portland, Oregon, USA on September 18-19. More information is available here.

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:

Disturbance of harbour porpoises during construction of the first seven offshore wind farms in Germany – Brandt et al. 2018

> We investigated the disturbance effects of offshore windfarm construction on harbour porpoises *Phocoena phocoena* using acoustic porpoise monitoring data and noise measurements during construction of the first 7 large-scale offshore wind farms in the German Bight between 2010 and 2013. At 6 wind farms, active noise mitigation systems (NMS) were applied during most piling events, and 1 was constructed without. Based on generalized additive modelling analyses, we describe a clear gradient in the decline of porpoise detections after piling, depending on noise level and distance to piling.

An LCA of the Pelamis wave energy converter – Thomson et al. 2018

> To date, very few studies have attempted to quantify the environmental impacts of a wave energy converter, and almost all of these focus solely on the potential climate change impacts and embodied energy. This paper presents a full life cycle assessment (LCA) of the first-generation Pelamis wave energy converter, aiming to contribute to the body of published studies and examine any potential trade-offs or co-benefits across a broad range of environmental impacts.

Predicting the impacts of wind farms on seabirds: An individual-based model – Warwick-Evans et al. 2018

> Individual-based models (IBMs) are a powerful tool in predicting the consequences of environmental change on animal populations and supporting evidence-based decision making for conservation planning. There are increasing proposals for wind farms in UK waters and seabirds are a vulnerable group, which may be at risk from these developments.

Potential Environmental Effects of Leading Edge Hydrokinetic Energy Technology – Sudderth et al. 2017

> The Volpe Center evaluated potential environmental challenges and benefits of the ARPA-E funded research project, Marine Hydrokinetic Energy Harvesting Using Cyber-Physical Systems, led by Brown University. The “Leading Edge” research team developed and tested an innovative hydrofoil-type power conversion device to capture energy from flowing water. The technology could provide low-carbon energy to power remote homes/businesses, port and marine facilities, or other coastal facilities, among other uses.

Wind turbine impact on near-ground air temperature – Moravec et al. 2018

> Several aspects of wind farms' environmental impacts have been thoroughly studied. Their effect on surface temperature, however, has not been sufficiently explored. We analysed variations in land surface temperature observed over 5 months on a large wind farm (42 000 kW maximum output). To describe the near-surface microclimate variability, we measured air temperature at 15 cm above ground using 14 autonomous microclimatic stations arranged in the vicinity of 4 turbines.

News and Current Events

Marine Renewable Energy

Cape Sharp Tidal successfully connects in-stream tidal turbine from the Bay of Fundy to Nova Scotia electrical grid – Cape Sharp Tidal

> Cape Sharp Tidal has once again successfully and safely deployed an in-stream tidal turbine and connected it to the power grid at the Fundy Ocean Research Center for Energy (FORCE) site in Nova Scotia's Minas Passage. Cape Sharp Tidal's first demonstration turbine was deployed and grid-connected in November 2016 and recovered in June 2017.

EU approves tidal energy pilot project in French waters – Climate Action

> The European Commission has given the go ahead to build an innovative tidal energy project off the coast of Normandy. The pilot clean energy plant will have a maximum capacity of 14 megawatts and comprise of seven underwater turbines, 16 metres wide, placed on the sea floor.

Renewable energy firms with more than 100 employees to be wound up – Irish Examiner

> Provisional liquidators have been appointed by the High Court to two Irish companies involved in the renewable energy sector that employs more than 100 people. Ms Justice Caroline Costello said she was satisfied to appoint Michael McAteer and Stephen Tennant of Grant Thornton as joint provisional liquidators to the Dublin based OpenHydro Group Ltd and its subsidiary Open Hydro Technologies Ltd after being told both companies were "seriously insolvent" with debts of approximately €280m.

Tecnalia launches the first floating laboratory in Europe for tests at BIMEP, a real offshore environment - Tecnalia

> The lab is partly funded by the Basque Government and enables testing of new materials and solutions against corrosion, ageing and fouling in the marine environment, in real conditions that are monitored on site. It meets the specific needs of Basque companies that want to increase their offshore energy business. Companies such as Erreka, Credeblug, Ditrel, Navacel, Tubacex, Vicinay, Nem Solutions and Sasyma Coatings will be the first to test their solutions, as part of an initiative promoted by the Basque Energy Cluster.

Wavepiston bags multi-million wave demo grant – Marine Energy Biz

> Danish developer Wavepiston has been granted €2.5 million by the European Commission's Horizon 2020 program for the full-scale wave energy demonstration project. The demonstration project, planned to run from 2018 to 2020, is expected to see Wavepiston demonstrate power to grid capabilities of a full-scale system to prove energy potential and durability.

Scotland and Cornwall to assist in development of Welsh marine energy test site - EMEC

> The European Marine Energy Centre (EMEC) Ltd and Wave Hub Ltd have signed an agreement with Marine Energy Wales to provide strategic advice to develop the Marine Energy Test Area (META) project which is underway in Pembrokeshire. Between them, the teams behind the test centres in Orkney and Cornwall have over 20 years' experience developing and managing the sites, as well as supporting facilities and developers around the world.

Wind Energy

The Jones Act and Offshore Wind in Light of the Aeolus Energy Announcement – Marine Link

> As the domestic offshore wind industry comes to life, U.S. flag vessels will necessarily be part of that expanding equation. A potential sea change came with the recent announcement from Aeolus Energy Partners that the renewable installation and operation company was investing in a fleet of Jones Act-compliant vessels dedicated to the offshore wind industry.

Farm First power marks major milestone - Beatrice Offshore Wind

> Beatrice, Scotland's largest offshore wind farm, has started generating power for the first time today. Following the successful installation of the first 7MW turbine, Beatrice Offshore Windfarm Limited has exported power to the National Grid for the first time. The installation of the first turbine heralds the start of the final stage of Beatrice's journey towards completion in Spring 2019.

Floating Concept of the Month: The Damping Pool Concrete Barge – Quest FWE

> The Damping Pool floater design allows construction in concrete as well as in steel. Concrete has an anticipated long life time and low maintenance requirements, however local preferences may favor a steel construction. The designer, French company Ideol, installed the first concrete Damping Pool earlier this year over the test site SEM REV off the French Atlantic coast as a demonstrator, a project named Floatgen, carrying a 2 MW turbine.

Saudi Arabia receives four bids for $500 mn wind farm – Phys Org

> Saudi Arabia has received bids from four consortiums competing to build a $500 million Saudi wind farm project, officials said Wednesday, as the world's top oil exporter pushes to diversify its energy sector. France's EDF Energies Nouvelles placed the lowest bid for the 400-megawatt Dumat al-Jandal wind project in the northern Al Jouf province, while the second lowest was submitted by the French firm ENGIE, the Saudi energy ministry said.

New York clarifies offshore wind power development approach, bidding process – S&P Global

> Additional clarity regarding facilitation of New York's massive 2.4 GW offshore wind development goal emerged Monday when regulators discussed the procurement process with stakeholders at a technical conference in New York. NYSERDA issued a detailed request for information Friday designed to help the agency craft a request for proposals for 800 MW of offshore wind capacity it plans to issue in the fourth quarter of 2018.

Contract awarded for £2.5bn offshore windfarm – Utility Week

> Great Yarmouth-based 3Sun Group has been awarded a contract worth more than £2.5 million to help build a new windfarm off the East Anglia coast. The deal will create 30 jobs to service the construction stage of East Anglia One, from the £2.5 billion windfarm’s new base in Lowestoft harbour. The project is one of the biggest single site contracts the company has won to date.

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 UK Department for Business, Energy and Industrial Strategy (BEIS) has launched the Regulators' Pioneer Fund competition to fund regulator-led projects worth up to £1 million. Competition closes 14 August.
- NeSSIE (North Sea Solutions for Innovation Corrosion for Energy) project consortium launches first stage of competition to implement projects demonstrating anti-corrosion solutions in offshore renewables. Due 7 August 2018.