TETHYS BLAST

November 16, 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.

Upcoming Conferences

- The 2018 Australian Ocean Renewable Energy Symposium will be held in Perth, Western Australia on November 20-22.
- The Marine Renewables Canada Conference will be held in Halifax, Canada on November 21-22.
- The Wind Wildlife Research Meeting XII will be held in St. Paul, Minnesota, US on November 27-30.

New Tethys Story

West Coast Organization Channels Energy for Marine Renewables by Matthew Sanders and Marisa McNatt
A small nonprofit based in Portland, Oregon is helping to place the Pacific Region of the United States – comprised of California, Oregon, Washington, Alaska, and Hawaii – on the map as a vibrant destination for ocean renewable energy research and development. Available offshore wind, wave, and tidal resources offer significant opportunity for states in the Pacific Region to meet their renewable energy targets. Yet, actually tapping into the region's rich, coastal carbon-free energy sources is not without its challenges (read more).

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:

Do terrestrial animals avoid areas close to turbines in functioning wind farms in agricultural landscapes? – Łopucki et al. 2017

> Most studies on the effects of wind energy on animals have focused on avian and bat activity, habitat use, and mortality, whereas very few have been published on terrestrial, non-volant wildlife. In this paper, we studied the utilization of functioning wind farm areas by four terrestrial animals common to agricultural landscapes: European roe deer, European hare, red fox, and the common pheasant.

Evaluating biological characteristics of marine renewable energy sites for environmental monitoring – Wiesebron 2015

> Tidal energy is a renewable resource that helps meet growing energy demands, but uncertainties remain about environmental impacts of device installation and operation. Monitoring programs are used to detect impacts caused by anthropogenic disturbances and are a mandatory requirement of project operating licenses in the United States. Because tidal technology is new, studies describing environmental change due to tidal devices are scarce, limiting the information that can be used to characterize environmental impacts for monitoring requirements.

A Multi-National Project Management Framework Audit of a European Union Marine Spatial Planning Project – Sangiuliano 2018

> Marine spatial planning (MSP) is an emerging field of management aimed at promoting the sustainable use of the marine environment. In order to further the progression of MSP, a European Union funded Project is exploring the opportunities for multi-use across Europe's sea basins. Given the complex multi-national partner approach, and the relatively immature status of MSP, the utilization of an effective project management regime is vital in order to achieve the vision set out by The Project.

Minnesota Department of Natural Resources Guidance for Commercial Wind Energy Projects – Minnesota Department of Natural Resources 2018

> Commercial scale wind farms provide important renewable energy sources for our state and have a positive impact on Minnesota's economy. Wind energy conversion systems do not pose the same kind of environmental challenges that other sources do, prompting less concern about air and water pollution and the release of greenhouse gases. However, the turbines, access roads, transmission lines, and substations do have the potential to impact natural, recreational, and cultural resources.

Estimating Seabird Flight Height using LiDAR – Cook et al. 2018

> Accurately estimating the proportion of birds at collision risk height forms a key part of assessing potential collision risk at offshore wind farms. Recent advances in LiDAR and digital aerial imaging offer the potential to collect precise estimates of the altitude of birds in flight. We trialled LiDAR and digital aerial photography as an approach to measuring the flight heights of seabirds in the Outer Forth and Tay Estuaries and carried out an exercise to validate measurements of flight height gained from LiDAR.

News and Current Events

Marine Renewable Energy

Minesto completes offshore test programme of its EU-funded tidal energy project in Wales – Minesto

> Marine energy developer Minesto has completed the offshore commissioning and test programme of its EU-funded tidal energy project offshore Holyhead, North Wales, which aims to demonstrate the company's first utility-scale system of its pioneering subsea kite technology. The project comprises the construction, installation and demonstration of Minesto's first utility-scale system of its subsea kite technology called Deep Green, in the Holyhead Deep 6km off the coast of North Wales.

OCEANIC performs closing sea tests at BiMEP – Marine Energy Biz

> The OCEANIC project team has conducted the final test on the set of samples as part of the EU-backed scheme looking to develop low-impact surface protection for devices and structures in the marine environment. The OCEANIC project, which officially concluded on November 14, 2018, was launched in 2015 with the aim of developing ecologically viable solutions for the protection against corrosion and fouling on materials used for the construction of marine renewable energy devices.

Cape Sharp Tidal turbine was 'damaged beyond repair' in September – Global News

> A decision by the Supreme Court of Nova Scotia has revealed that the Cape Sharp Tidal turbine was "damaged beyond repair" in September, seeming to contradict public statements made at that time by partners in the tidal energy project. The experimental in-stream tidal turbine, located in the Bay of Fundy, was a joint operation between Dublin-based OpenHydro Ltd. and Emera Inc., the parent company of Nova Scotia Power. Emera pulled its support from the project soon after OpenHydro declared bankruptcy.

UH studies wave-energy electricity generation without a cable – University of Hawai'i News

> Naval Facilities Engineering and Expeditionary Warfare Center (NAVFAC EXWC) in partnership with the University of Hawai'i launched its second round of Wave Energy Converter (WEC) testing at the U.S. Navy's Wave Energy Test Site off Marine Corps Base Hawai'i on O'ahu. This is the world's first demonstration of the potentially transformative capability for WECs to enable persistent oceanographic observation and unmanned, undersea vehicle recharge without a cable to shore.

OPT expands industry reach with new products – Marine Energy Biz

> Ocean energy solutions provider Ocean Power Technologies has expanded its suite of products to include subsea batteries and a hybrid PowerBuoy – both complementary to company's core PowerBuoy wave energy technology. Subsea batteries create a sea floor

energy storage solution for remote offshore operations. The hybrid PowerBuoy is planned to be a smaller liquid-fueled surface buoy, with significant energy storage and capable of providing reliable power in remote offshore locations.

Wind Energy

Record-breakers: Scottish wind farms deliver power equivalent to 98 per cent of demand – Business Green

Scotland's fleet of onshore and offshore wind farms set another record last month, providing enough clean power for nearly five million homes. According to a new analysis from WWF Scotland, wind turbines delivered power over the course of the month that was equivalent to 98 per cent demand, although peaks and troughs in supply and demand meant fossil fuel power plants were still required throughout the month to help balance the grid.

Wind Turbine Manufacturers Hit Turbulence as Machine Prices Fall – Bloomberg

The shakeout in wind turbine manufacturing industry is starting to produce winners and losers after increasing competition gutted margins. Wind is one of the lowest-cost forms of energy generation and getting cheaper, with turbine prices down more than 50 percent in the past decade. That has hurt profit and spurred gloomier market outlooks from wind machinery makers from General Electric Co. to Vestas Wind Systems A/S.

South-east Asian duo signal 1.5GW wind push – ReNews

Singapore outfit Blue Circle and Philippine company AC Energy are teaming up to develop about 1500MW of wind energy projects in south-east Asia, including 700MW in Vietnam. The first project is expected to be a 200MW wind farm in Vietnam, construction of which is scheduled to start next year.

Finland launches 1.4TWh auction – WindPower Monthly

The Finnish Energy Agency has launched a technology-neutral renewable energy tender, inviting bids from wind, solar, biomass, biogas and wave generators before the end of the year. The country’s first tender was launched on 15 November and will accept bids until 31 December. Successful projects, expected to be dominated by wind generators, will receive support for 12 years.

France launches 500 MW Dunkirk offshore wind tender – Montel

The French government on Thursday launched the tender for the development of a 500 MW offshore wind farm off the coast of Dunkirk, with plans to announce the winner in mid-2019.

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 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.