TETHYS BLAST

December 29, 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.

Annex IV Webinar Recording Available

Annex IV hosted a public webinar on December 12 that showcased several new *Tools and Resources for Environmental Assessments*. In case you missed it, a recording is now available on Tethys.

AWTEC 2018 Abstracts Due

The Asian Wave and Tidal Energy Conference (AWTEC) will be held in Taipei, Taiwan on 9-13 September 2018. The conference provides an update to current state-of-the-art advancements in ocean energy in a broad sense. The abstract deadline is 5 January 2018.

EIMR 2018 Abstracts Due

The conference on Environmental Interactions of Marine Renewables (EIMR) will be held in Orkney, Scotland on 24-27 April 2018. The conference focuses on environmental effects of marine renewable energy. The abstract deadline was extended to 10 January 2018.

New Tethys Story

Block Island Wind Farm, a 30MW farm with 5 turbines situated off the coast of Rhode Island, is the first offshore wind farm in the United States. This construction and initial operation brings the opportunity to understand the environmental effects of offshore wind development through environmental monitoring. This particular study focuses on the environmental impacts of acoustics on marine animals during construction and operation, as a component of a host of studies led by the Bureau of Ocean Energy Management (BOEM) to better understand offshore wind development. Read more by James Miller.

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:

Determining the Water Column Usage by Seals in the Brims Lease Site - Evers et al. 2017

> The report describes how adult harbour seals and grey seal pups use the water column within the Brims lease site. 1. Telemetry data from 12 adult harbour seals and seven grey seal pups diving within the Brims lease site were analysed to extract descriptors of dive behaviour. 2. Dive data were summarised to provide estimates of the proportion of time seals spent at different depths relative to the sea surface and relative to the seafloor. In addition to estimates of the proportion of time at depth, the number of times seals transited through different depth bins relative to the sea surface and sea floor was also determined.

Broad-Scale Acoustic Monitoring for Cetaceans and Underwater Noise in Relation to Offshore Wind Farm Construction in Scotland - Brookes et al. 2017

> Marine construction projects, such as offshore wind farms and port developments often use techniques that produce significant levels of noise underwater, which could have effects on marine wildlife. Marine Scotland is the government body responsible for regulating these activities in Scottish waters and for ensuring that wildlife populations are protected in line with legislation. Large scale offshore wind farm construction will begin to take place off the Scottish east coast in 2017, using piled foundations. To monitor for potential broad scale changes in distribution of protected cetacean species during construction activities, Marine Scotland has deployed an array of 30 click detectors and 10 broadband acoustic recorders across the Scottish east coast each summer since 2013.

Nova Bluemull Sound - Appropriate Assessment - Marine Scotland 2016

> The proposal is for the installation, operation and decommissioning of five 2 bladed 100 kW tidal turbines. This is a record of the appropriate assessment (AA) of the Nova Tidal Array proposal. This assessment is required under Regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994. This AA is in accordance with Council Directive 92/43/EEC on the conservation of natural habitats under wild fauna and flora ("the Habitats Directive") and Council Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive"). More information about this project is available through Annex IV.

Improving Efficiencies of National Environmental Policy Act Documentation for Offshore Wind Facilities - Case Studies Report - English et al. 2017

> The United States is currently embracing offshore wind farm (OWF) development as part of its expanding renewable energy generation objectives in response to renewables targets, financial incentives, and technological advancements… In light of increased

numbers of applications for offshore wind development and associated increases in case load, as well as the ambitions of the Council on Environmental Quality Regulations, BOEM has recognized the need to streamline the preparation, review and, analysis of associated environmental information required under NEPA.

Seasonal and Diel Patterns in Cetacean Use and Foraging at a Potential Marine Renewable Energy Site - Nuuttila et al. 2017

Marine renewable energy (MRE) developments often coincide with sites frequented by small cetaceans. To understand habitat use and assess potential impact from development, echolocation clicks were recorded with acoustic click loggers (C-PODs) in Swansea Bay, Wales (UK). General Additive Models (GAMs) were applied to assess the effects of covariates including month, hour, tidal range and temperature. Analysis of inter-click intervals allowed the identification of potential foraging events as well as patterns of presence and absence. Data revealed year-round presence of porpoise, with distinct seasonal and diel patterns. Occasional acoustic encounters of dolphins were also recorded.

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 Small and Medium-sized Enterprises (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.
- Innovate UK has up to £19 million to invest in the best ideas for new inventions in a wide range of technology and business areas. The competition deadline is 28 February 2018.

News and Current Events

Wind Energy

300MW wind farm features 87 'record-breaking' Vestas V136 turbines - reNews

Pattern Energy and the Henvey Inlet First Nation have broken ground on a 300MW wind farm on the northeast shore of Georgian Bay in Ontario, Canada. The milestone follows completion of a C$1bn financing deal for the Henvey Inlet project, which will feature 87 Vestas V136-3.45MW turbines with 132-metre hubs. The Independent Electricity System

Operator will purchase power produced under a 20-year deal. Up to 500 jobs will be supported during construction and the wind farm is due online in 2019.

India wind power generation to touch 9,500 MW in current fiscal - The Hindu Business Line

A cumulative capacity addition of 467 MW of wind power generation capacity has taken place till November end during the current financial year, according to RK Singh, Minister of State (Independent Charge). In a written reply to a question on total wind capacity addition this year in the Lok Sabha, Singh said that Solar Energy Corporation of India had finalised the bids for 1,000 MW of Inter-State Transmission System (ISTS) connected wind power projects in February and bids for another 1,000 MW ISTS connected wind power projects were finalised in October.

Bay State Wind, Vineyard Wind and Deepwater Wind in for 800MW call - reNews

Three developers have submitted bids to authorities in Massachusetts to develop up to 800MW of offshore wind capacity off the coast of the US state. The Bay State Wind partnership between Orsted and Eversource has submitted a bid including a 55MW battery storage project. The other bids have been received from Deepwater Wind and from the Vineyard Wind joint venture between Avangrid Renewables and Copenhagen Infrastructure Partners.

TRIG acquires stake in 317MW Sheringham Shoal offshore wind farm - Energy Business Review

The Renewables Infrastructure Group (TRIG), a London-listed renewable energy infrastructure investment company has acquired a stake of 14.7% in the 316.8MW Sheringham Shoal offshore wind farm in the UK for around £80m. For TRIG, the investment will represent an indirect equity interest in a new joint venture company in partnership with funds managed by Equitix. Last week, Equitix completed its acquisition of Norwegian state-owned hydropower company Statkraft's stake of 40% in the offshore wind farm for £558m.

Marine Renewable Energy

Experts identify alternate markets for marine renewables - Tidal Energy Today

US Department of Energy's Water Power Technologies Office hosted a forum of experts who discussed and evaluated high-potential alternate markets for the emerging marine energy technologies. The Marine Energy Technologies Distributed and Alternate Applications Forum, held earlier in December, served to discuss new applications for tidal and wave energy technologies, and the ways such technologies can help meet the energy needs of a range of coastal and marine industries.

Finnish Clean Energy Company Wello Now Seeking €1 Million Through Invesdor - Crowdfund Insider

> Wello, a Finnish clean energy company that provides a wave energy based solution called the Wello Penguin, is now looking to raise a minimum of €1 million (max of €2 million) through its equity crowdfunding round on Invesdor. Founded by Heikki Paakkinen, Wello revealed that with commitment and passion, it has developed the Wello Penguin into a product that is now ready to be commercialized. The solution is also based on a new and unique concept for capturing energy from waves and turning it into renewable electricity.

Israeli wave energy developer signs US$180 million MOU for 150 MW project in Ghana - Hydro World

> Yam Pro Energy has signed a US$180 million memorandum of understanding with Shapoorji Pallonji (SP) Group to build the first phase of a 150 MW marine energy facility on the coastline of Accra, Ghana, on West Africa's Gulf of Guinea. Yam Pro Energy is a wave energy development company based in Israel. SP Group is an Indian business conglomerate that has annual revenue estimated at about $4.2 billion. SP is also the largest individual shareholder in Tata Sons, the holding company of Tata Group.

EMEC looks back at tidal & wave testing endeavors - Tidal Energy Today

> The European Marine Energy Centre (EMEC) has summarized tidal and wave energy activities undertaken at the Orkney-based testing center throughout the year behind us. Throughout 2017, EMEC said it welcomed six developers for testing – reaching a total of 19 wave and tidal energy clients, with 30 marine energy devices to have trialed their technologies at the center since its establishment in 2003.