TETHYS BLAST

August 24, 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.

INORE Workshop at OREC

The International Network on Offshore Renewable Energy (INORE), an organization for students and early-stage researchers involved in offshore renewable energy, will be holding a workshop in parallel with the Ocean Renewable Energy Conference (OREC) on Tuesday, September 18. The focus of the workshop will be on exploring data sets in the US Department of Energy's (DOE) MHK-Data Repository and developing questions to be used for future collaborations.

The DOE is generously providing travel support for students to participate in the INORE workshop and attend the second day of OREC. If you know of students who would like to participate, please have them contact Caitlyn Clark or Aisha McKee.

Upcoming Webinar

Annex IV is hosting a public webinar on September 25 that will discuss Optimizing Permitting for MRE through Data Transferability. More information and login instructions are available on Tethys.

Upcoming Conferences

- The 4th Asian Wave and Tidal Energy Conference (AWTEC) will be held in Taipei, Taiwan on September 9-13.
- The 13th Ocean Renewable Energy Conference (OREC) will be held in Portland, Oregon, USA on September 18-19.
- The 1st Scottish Marine Energy Research (ScotMER) Symposium will be held in Edinburgh, UK on October 2.
- The American Wind Energy Association (AWEA) Offshore WindPower 2018 will be held in Washington DC, USA on October 16-17.

Upcoming NYSERDA Workshop

The New York State Energy Research and Development Authority (NYSERDA) is hosting a State of the Science workshop on wildlife and offshore wind energy development. More information will be available on the workshop site.

Research Fellow Position with University of Aberdeen

The University of Aberdeen is seeking a 3-year Research Fellow in Ecologically Sustainable Very Large Offshore Renewables. The research fellow will be part of the new Offshore Renewable Energy SuperGen Hub. Find more about the position 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:

A review of potential impacts of submarine power cables on the marine environment: Knowledge gaps, recommendations and future directions – Taormina et al. 2018

> Submarine power cables (SPC) have been in use since the mid-19th century, but environmental concerns about them are much more recent. With the development of marine renewable energy technologies, it is vital to understand their potential impacts. The commissioning of SPC may temporarily or permanently impact the marine environment through habitat damage or loss, noise, chemical pollution, heat and electromagnetic field emissions, risk of entanglement, introduction of artificial substrates, and the creation of reserve effects.

Assessing space use by pre-breeding white-tailed eagles in the context of wind-energy development in Finland – Balotari-Chiebao et al. 2018

> The expansion of wind energy over large areas may be accompanied by major conflicts with birds, including birds of prey. Hence, it is desirable that the space use of species known to be vulnerable to wind energy be assessed in light of current and future developments. Here, we report on the large-scale dispersal movements of pre-breeding white-tailed eagles (*Haliaeetus albicilla*) in Finland, where a currently modest wind-energy capacity is expected to increase in the near future.

Comparative Effects of Climate Change and Tidal Stream Energy Extraction in a Shelf Sea – De Dominics et al. 2018

> The environmental implications of tidal stream energy extraction need to be evaluated against the potential climate change impacts on the marine environment. Here we study how hypothetical very large tidal stream arrays and a business as usual future climate

scenario can change the hydrodynamics of a seasonally stratified shelf sea. The Scottish Shelf Model, an unstructured grid three-dimensional ocean model, has been used to reproduce the present and the future state of the NW European continental shelf.

Wind farms affect the occurrence, abundance and population trends of small passerine birds: The case of the Dupont's lark – Gomez-Catasus et al. 2018

The assessment of the effects of wind farms on bird populations is commonly based on collision fatality records. This could undervalue the effect of wind farms on small-sized birds. We evaluate the effect of wind turbines on occurrence, abundance and population trends of a threatened small passerine species, the Dupont's lark *Chersophilus duponti*. To our knowledge, this is one of the first studies addressing the effect of wind farms on population trends using time-series data from multiple wind farms.

Monitoring the environmental interactions of tidal devices - how do we achieve what is required in a practical and cost effective manner whilst retaining focus on the key issues to assist the consenting of future projects? – Foubister 2018

The tidal industry is still in its infancy; numerous designs of devices are being tested at sea to prove the technology, and there has been some deployment of early small scale arrays. The consents issued for these early deployments have included conditions that require the monitoring of environmental effects. It is fair to say some developers have considered these to be onerous and they have certainly generated a number of challenges for the Project developers. The presentation will draw on developer specific experience to provide an overview of the scope of the environmental monitoring that has taken place to date.

News and Current Events

Marine Renewable Energy

ScotRenewables Tidal Clocks Record Level of Power Generation - ScotRenewables

Scotrenewables Tidal Power has set another record with its first 2MW floating tidal stream turbine with the unit clocking up over 3GWh of renewable electricity in its first year of testing at the European Marine Energy Centre (EMEC) in Orkney, Scotland. In 12 months of continuous operation, including during the worst winter storms in recent years, the pioneering SR2000 – the world's most powerful operating tidal stream turbine - has supplied the equivalent annual electricity demand of around 830 UK households and at times has been supplying over 25% of the electricity demand of the Orkney Islands.

Minesto completes initial commissioning trials of its DG500 marine energy kite - Minesto

Marine energy developer Minesto has completed the initial commissioning sea trials of its unique subsea kite technology called Deep Green off the coast of Holyhead, North West Wales. Through the initial trials, a range of functionalities such as the kite control system, launch and recovery systems, connections and communications have been tested and verified in various sea states.

American wave-powered buoy reaches the Adriatic – Marine Energy Biz

US-based Ocean Power Technologies (OPT) has shipped its PB3 PowerBuoy to Italy for the upcoming deployment for oil and gas operations in the Adriatic Sea. The shipment marks OPT's first deployment into the oil & gas sector as the PB3 buoy will be used for Eni's subsea operations.

Emera pulls out from troubled Cape Sharp Tidal project - CBC

Nova Scotia energy company Emera Inc. is ending its involvement with the tidal turbine in the Minas Passage weeks after partner OpenHydro Group Ltd. filed for liquidation. In a statement from Emera released Monday afternoon, the company said it was left with "no practical choice" but to withdraw from Cape Sharp Tidal Venture.

DesignPro Renewables withdraws pending foreshore licence application in Clare – DesignPro Renewables

DesignPro Renewables have formally announced this week that we will not be demonstrating our 60kW hydrokinetic turbine in County Clare as part of our current EU Horizon 2020 project. We lodged a foreshore application in April this year hoping to deploy our 60kW device on the Fergus Estuary near Cahiracon. The proposed demonstration was for a duration of 12 months to carry out testing on the technology.

Wind Energy

Can Offshore Wind Turbines Succeed in the Great Lakes? – Scientific American

Aside from a small pilot program along the coast of Finland, offshore wind turbines have not been placed in waters that freeze during winter. Moving ice can act like a battering ram, pushed by storms and unpredictable currents, knocking into masts that hold up spinning blades. A major test could be coming soon in Lake Erie near Cleveland. If the six turbines in the Icebreaker Windpower project are built, they could usher in a new era of offshore power in freshwater lakes, rather than salty coastal seas, which has never been done.

Navantia floating turbine progress – Maritime Journal

Major Spanish shipyard group Navantia has started the construction of the floating foundation for the first full scale floating wind turbine that will be installed at the Portuguese WindFloat Atlantic project.

Inch Cape seeks OK for new look - reNews

Developer Red Rock Power has filed a new consent application with Marine Scotland for the 600MW-plus Inch Cape wind farm 15km off the Angus coast. The planning bid is to take account of "advances in technology" and "new learnings" since the initial project was given the green light in 2013, the company said.

Statoil/Equinor plans US $12 billion in renewable energy projects – American Journal of Transportation

Norway's oil and gas giant, Statoil, which has been renamed Equinor, has made major investments in renewable energy technologies and plans for $12 billion more in the next twelve years. Elin A. Isaksen, press spokesperson, Statoil ASA told *AJOT*,"Our ambition is to invest around NOK 100 billion (US 12 billion) in new renewable energy towards 2030.

Vestas Orders totalling 398MW secured in Bolivia, Dominican Republic, France and US - ReNews

Vestas has secured turbine orders totalling 398MW in Bolivia, Dominican Republic, France and the US as the second quarter of the year drew to a close. PacifiCorp, a subsidiary of Berkshire Hathaway Energy, booked V100-2.0MW hardware totalling 216MW to repower the Marengo and Marengo 2 wind farms.

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 and wishes to make you aware of the following opportunities:

- The International Network on Offshore Renewable Energy (INORE) has announced a call for Blue Energy Collaborative Scholarship (BECS) proposals to support collaborative projects between INORE members. Deadline is 31 August.
- The government of Turkey and European Bank for Reconstruction and Development (EBRD) have issued a tender for consulting services to identify and map Turkey's offshore wind and wave energy potential. Deadline is 3 September.
- Horizon2020 funding call on "developing the next generation of renewable energy technologies." Deadline is 16 October 2018.