TETHYS BLAST

April 20, 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.

Annex IV Workshop at ICOE

OES-Annex IV invites you to a workshop in Cherbourg, France on June 12th from 9am-12:30pm (CEST) in conjunction with the International Conference on Ocean Energy (ICOE). The workshop focuses on ways to "transfer" data, information, and learning on environmental effects from early MRE projects to extend learning from these early projects and to reduce the high costs of environmental monitoring and accelerate consenting for future projects. The workshop will focus on developing best management practices for data transfer and collection consistency. Space is limited; if you wish to register for the workshop, email mikaela.freeman@pnnl.gov. More information on the workshop can be found here.

Annual Tethys Peer Review

Each year we send out a quick 5-minute survey requesting feedback on the Tethys website. Please consider filling out the survey to provide our team with valuable feedback that makes Tethys a better resource to you and the wind and marine renewable energy communities.

Recent Tethys Story

Changing the Game: New Renewable Energy Support Website Launched by Jim Strittholt

In order to effectively combat climate change, rapid transition to renewable energy is essential and new economic opportunities are rapidly emerging. The recent progress towards renewable energy is encouraging, but care must be taken to avoid unintended negative consequences on wildlife and existing human uses whether these new developments are on land or at sea. Successful development requires up-front community engagement and careful planning backed by the best scientific and social data, and the means to advance participation by all stakeholders (read more).

Register for METS and IMREC

Don't forget to register for the Marine Energy Technology Symposium (METS) and the International Marine Renewable Energy Conference (IMREC), which will be from April 30 – May 2 in Washington D.C.

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:

ORJIP Bird Collision and Avoidance Study – Skov et al. 2018

> The ORJIP BCA study has been designed to improve the evidence base for seabird avoidance behaviour and collisions around offshore wind farms, with the aim of informing impact assessment and supporting consenting applications for the offshore wind industry. Driven by ambitious renewable energy targets and reduced costs, the offshore wind industry has experienced a significant growth over the last 20 years, particularly in Europe, where the majority of installed capacity can be found.

Development and the Environmental Impact Analysis of Tidal Current Energy Turbines in China – Liu et al. 2018

> Chinese government pays more attentions to renewable energies (RE) in the context of increasing energy demand and climate change problems. As a promising RE, the utilization of marine renewable energy (MRE) is engaging in the world, including the wave energy and tidal current energy mainly. At the same time, the tidal current energy resources in China are abundant. Thus, the utilization of tidal current energy becomes an inevitable choice for China to meet the challenge of global climate change.

Bird Collisions at Wind Turbines in a Mountainous Area Related to Bird Movement Intensities Measured by Radar – Aschwanden et al. 2018

> Bird collisions at wind turbines are perceived to be an important conservation issue. To determine mitigation actions such as temporary shutdown of wind turbines when bird movement intensities are high, knowledge of the relationship between the number of birds crossing an area and the number of collisions is essential. Our aim was to combine radar data on bird movement intensities with collision data from a systematic carcass search.

The Role of Wave Energy Converter Farms on Coastal Protection in Eroding Deltas, Guadalfeo, Southern Spain – Bergillos et al. 2018

> Many worldwide coasts are under erosion with climate projections indicating that damages will rise in future decades. Specifically, deltaic coasts are highly vulnerable systems due to their low-lying characteristics. This paper investigates the role of wave energy converter (WEC) farms on the protection of an eroding gravel-dominated deltaic coast (Guadalfeo, southern Spain). Eight scenarios with different alongshore locations of the wave farm were defined and results were compared with the present (no farm) configuration of the coast.

Male Greater Prairie-Chickens Adjust their Vocalizations in the Presence of Wind Turbine Noise – Whalen et al. 2018

> The potential for wind energy facilities to affect species of grouse in the grasslands of the Great Plains of North America is a conservation concern. Communication by male Greater Prairie-Chickens (*Tympanuchus cupido pinnatus*) is essential for lek mating displays and includes low-frequency vocalizations that could be disrupted by wind turbine noise. We studied the effects of wind turbine noise on the boom, cackle, whine, and whoop vocalizations of male Greater Prairie-Chickens recorded at 14 leks located 703 m to 23 km away from a wind energy facility near Ainsworth, Brown County, Nebraska, USA, in 2013 and 2014.

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 Offshore Energy Research Association of Nova Scotia (OERA) has launched a webinar series to highlight recent and ongoing research in the offshore energy sector.
- Innovate UK is providing £15 million to invest in great ideas for new innovations in a range of technology and business areas. The deadline for application is May 9.
- The FORESEA (Funding Ocean Energy through Strategic European Action) programme has launched its 4th call for proposals, due June 29.

News and Current Events

Marine Renewable Energy

Tidal Permits Issued to Big Moon Power – Nova Scotia Canada

> The Department of Energy has issued two marine renewable energy permits to Big Moon Power for a tidal electricity project in the Bay of Fundy. "Nova Scotia is becoming well known for being at the forefront of tidal energy technology development," said Energy Minister Geoff MacLellan. "Demonstration projects like this will help drive innovation, competition and ultimately lower renewable energy prices."

MeyGen Phase 1A completes construction phase and officially enters 25 year operations phase – Atlantis Resources

> Atlantis, a global leader in the marine power generation sector, is proud to announce that Phase 1A of the MeyGen project has now completed the construction phase and has formally entered the 25 year operations phase. At 6MW rated capacity, MeyGen is the world's largest tidal stream array. This achievement follows on from an extended period of array operation since the turbines were reinstalled in 2017.

Magallanes Renovables gears up for OCEAN_2G deployment to EMEC – EMEC

> Spanish tidal energy developer Magallanes Renovables have entered into a berth agreement with EMEC, where their tidal energy prototype is due to be demonstrated in the next phase of the OCEAN_2G project. Funded by the Fast Track to Innovation pilot scheme, part of the EU's Horizon 2020 research and innovation programme, OCEAN_2G aims to test, validate and pre-certify Magallanes' second generation (2G) 2MW tidal platform – 'ATIR'.

Wave energy tech developer SINN Power receives Swiss backing – HydroWorld

> Germany's SINN Power has received a US$5.82 million investment from the Schweizer Kapital Global Impact Fund of Switzerland for use in developing its wave energy generating technology. SINN Power's wave energy converters are modular, with each module including a float the bobs up and down in the water, thus providing the kinetic motion required for energy production. Modules can be deployed by themselves, or in arrays.

Wind Energy

First offshore export cable section laid at Hornsea Project One – Hornsea One

> The wind farm will be located 120km off the Yorkshire Coast, and three high voltage subsea power cables will carry electricity from three offshore substations to shore. Tideway BV is carrying out the cable lay of this first section using Ocean Yield's cable lay vessel Connector. The Connector has two large turntables with capacity to hold up to 6,000 and 3,000 tonne cables, and has laid subsea cables since 2012 in a range of different water depths.

Design for 50MW Offshore Wind Turbine Inspired by Hurricane-Resilient Palm Trees – Green Tech Media

> A team of researchers is working to complete the design for a novel 50-megawatt offshore wind turbine, nearly six times more powerful than a record-setting 8.8-megawatt turbine recently deployed off the coast of Scotland. Testing will begin on prototype blades this summer in Colorado. The massive turbine marks an about-face from conventional wind turbine design.

E.ON says all turbines linked to grid at UK offshore wind farm Rampion – Reuters

> All 116 turbines at top German utility E.ON's Rampion offshore wind farm in Britain are now able to generate electricity and are delivering power to the grid, the company said on Tuesday. The 400-megawatt project is being built off the coast of Sussex in southeast England by E.ON, UK Green Investment Rampion Ltd and Canadian energy infrastructure company Enbridge.

Element Power to develop NISA offshore wind farm site in Irish Sea – Wind Energy Business

> Element Power said that it has taken over development of the North Irish Sea Array (NISA) offshore wind site in the Irish Sea from Gaelectric. This marks Element Power's first investment in offshore wind development, after a decade of success in onshore wind, solar and, more recently, interconnection, energy storage and flexible grid services.