TETHYS BLAST

May 18, 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 and ORJIP invite 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.

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 market. 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 is June 26th.

Marine Energy Data

Do you use data and information associated with marine energy? Please help the US Department of Energy national laboratories develop the most useful system for storing and discovering data. Please take our survey at https://goo.gl/RkJ3n5.

New Tethys Story

A Radar Study to Relate the Number of Birds Crossing an Area to the Number of Fatal Bird Collisions at Wind Turbines by Janine Aschwanden, Stefan Werner, Felix Liechti
The number of fatal bird collisions at wind turbines is rarely studied in relation to the number of birds observed crossing an area. The reason might be that the acquisition of such data is time consuming, costly, and not trivial. The analysis and interpretation of radar data is especially difficult. Furthermore, there are a variety of radar systems and not all systems are technically suitable to answer all research questions (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 introductions to new or popular documents are listed below, accessible by the accompanying Tethys links:

Resolving Environmental Effects of Wind Energy – Sinclair et al. 2018

> Concerns for potential wildlife impacts resulting from land-based and offshore wind energy have created challenges for wind project development. Research is not always adequately supported, results are neither always readily accessible nor are they satisfactorily disseminated, and so decisions are often made based on the best available information, which may be missing key findings. The potential for high impacts to avian and bat species and marine mammals have been used by wind project opponents to stop, downsize, or severely delay project development.

Wave Energy in Europe: Views on Experiences and Progress to Date – O'Hagan et al. 2016

> Through the Intelligent Energy Europe-funded SOWFIA project, the experiences of developers, regulators and stakeholders in relation to consenting wave energy deployments to date was assessed and analysed. The work focussed on wave energy test centres in Europe and involved consultation with wave energy device and project developers, regulatory authorities, stakeholders, environmental consultants and others through dedicated workshops and questionnaire surveys.

Towards a Framework of Quantifying the Population-Level Consequences of Anthropogenic Pressures on the Environment: The Case of Seabirds and Windfarms – Cook and Robinson 2017

> Human activity is having a substantial impact on the natural environment and where this affects biodiversity it can have knock-on consequences for ecosystem stability. Whilst there is a tendency to focus on rare species, impacts on more common species can also have significant consequences at a population or ecosystem level. Consequently, there is a need to develop methods and approaches which can be used to quantify the impacts on

individuals in order to understand their consequences at a population-level, whilst accounting for any uncertainty in the available data.

Variation of Ocean Acoustic Environments Along the Western North Atlantic Coast: A Case Study in Context of the Right Whale Migration Route – Rice et al. 2014

Differing physical characteristics and levels of biological, environmental, and anthropogenic sounds contribute in varying levels of noise in different ocean environments. As a result, animals migrating over large ranges or widely distributed species are now exposed to a myriad of different acoustic environments, within which they must navigate, forage and reproduce.

Statistics Guidelines for Assessing Marine Avian Hotspots and Coldspots: A Case Study on Wind Energy Development in the U.S. Atlantic Ocean – Zipkin et al. 2015

Estimating patterns of habitat use is challenging for marine avian species because seabirds tend to aggregate in large groups and it can be difficult to locate both individuals and groups in vast marine environments. We developed an approach to estimate the statistical power of discrete survey events to identify species-specific hotspots and coldspots of long-term seabird abundance in marine environments.

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 role of ocean renewable energy as an alternative energy source for islands; Cité de la Mer, Cherbourg, France on June 11, 2018, in the same week of the International Conference on Ocean Energy (ICOE 2018). https://www.ocean-energy-systems.org/news/ocean-renewable-energy-in-insular-conditions-workshop-in-france/
- Scotland will host the Ocean Energy Europe 2018 Conference & Exhibition (OEE2018) in Edinburgh on 30-31 October https://www.oceanenergy-europe.eu/event/oee-2018/
- Online Lecture TU Delft: “Tidal Bridge builds largest Tidal power plant in Indonesia.” by Erik van den Eijnden - Managing Director at Tidal Bridge https://www.tudelft.nl/ocean-energy/news-agenda/former-lunch-lectures/

News and Current Events

Marine Renewable Energy

Oregon State University Wave Energy Test Site Reaches Licensing Milestone – Western World

> Culminating five years of work, Oregon State University has submitted a 1,000-page plan that outlines construction and operation details of a wave energy test site off the Oregon coast, along with measures to avoid, minimize and mitigate any potential environmental effects. The project is designed to allow commercial wave energy developers the opportunity to test different technologies for harnessing the untapped energy of ocean waves.

Seabased to Bring Wave Energy to the Caribbean – Cision PRWeb

> Bermuda General Agency Ltd. (BGA Ltd.) of Hamilton, Bermuda, has signed an agreement with Seabased AB of Lysekil, Sweden, to purchase two 20 MW wave energy parks in the Caribbean. Seabased designs and installs offshore parks that convert ocean waves to electricity for the grid. Feasibility studies of the Caribbean project will begin on several islands this summer, and phase one is expected to be operational by the fall of 2019.

Centrale Nantes Welcomes 'Acoustic of the SEA' – the First Project Selected by the FORESEA Programme – to its Offshore Test Sites – SEM REV

> On Thursday 12 April, Centrale Nantes installed a demonstrator, which aims to characterize underwater ambient noise, on its offshore test site, SEM-REV. This is part of the Acoustics of the SEA (SEAc) project developed by Nereis Environment. This project to monitor the environment of a Marine Renewable Energy (MRE) production site required that an autonomous tool for recording underwater sounds and storing data at sea be installed.

Ecotricity Presents Two Tidal Lagoon Proposals as Alternatives to Swansea Bay – Renewable Energy Magazine

> Renewable energy company Ecotricity has presented the UK government with two alternative tidal lagoon proposals, ahead of a joint select committee review of the Swansea Bay tidal lagoon project. MPs on the business and Welsh affairs committee has begun taking evidence from a range of participants, including ministers, Charles Hendry (author of the Hendry report) and Mark Shorrock, chief executive of Tidal Lagoon Power, the company behind the Swansea project. There is a suspicion that the government feels it is unable to support the Swansea project due to excessive cost, enabling Ecotricity to step in with two rival plans.

Minesto completes first Holyhead Deep installation phase – Minesto

Minesto has completed the first offshore installation phase of the project aimed at demonstrating Minesto's marine energy technology Deep Green in utility scale. The gravity-based structure, including the bottom joint system that moors Minesto's DG500 power plant to the foundation, has been installed at the seabed in the Holyhead Deep off North West Wales.

Wind Energy

Vestas Partners with Vattenfall on Large Wind Energy Project in Sweden – CNBC

Wind turbine specialist Vestas has entered into a partnership with Swedish utility Vattenfall and Danish pension fund PKA to build a new 353 megawatt (MW) wind energy project in Sweden. Vestas will provide the development with 84 of its V136-4.2 MW turbines, the business said in an announcement Wednesday.

India Soon to have Guidelines to Save Birds from Wind Energy Farms – Mongabay

Alarmed by the threats from wind energy farms to birds, including migratory birds and raptors, a panel of forest experts of India's environment ministry has now suggested a series of measures to be adopted by all the wind power companies in India for ensuring the protection of birds. For instance, it has suggested painting the vane tips of wind turbines orange, to prevent birds from flying into the turbines.

The East Coast Gears Up For Massive Offshore Wind Investments – Forbes

The East Coast of the United States is poised to witness the emergence of an entirely new industry to its shores. Or more literally, just off its shores. After years of preparing, and watching the progress being made in European and Asian waters, a number of East Coast states are doing much more than dipping a toe in the water (the pioneering 30 MW Block Island project by DeepWater Wind represented that initial toe). They are committing to develop as much as 13,000 megawatts (MW) – or 13 gigawatts (GW) of offshore wind capacity.

Mitsui Buys into Taiwan Wind Farm – The Japan News

Mitsui & Co. Ltd. is buying a 50 percent stake in wind farm developer Yushan Energy Co., giving the Japanese trading house a stake in an offshore power project in Taiwan. Yushan is a unit of Enterprize Energy, which owns a 40 percent net interest in the Hai Long Offshore Wind development in the Taiwan Strait, according to an emailed statement from Enterprize. The 300-megawatt project still in the planning stages and may require $1.8 billion to develop, according to Bloomberg New Energy Finance.