TETHYS BLAST

January 20, 2017

Welcome to the latest bi-weekly Tethys Blast, which will update you with new information available on Tethys, new features of Tethys, and current news articles of international interest on wind and marine renewable energy. We hope that this becomes a valuable tool to help you stay connected to your colleagues and to introduce you to new research, new contacts, and ongoing milestones in wind and marine renewable energy development.

Tethys Peer Review Survey

We thank you for your interest in Tethys and for being a part of the international community with an interest in addressing the environmental impacts of wind and marine renewable energy. We ask that you fill out a brief, 5 minute survey to help us evaluate and guide further development of Tethys. Please fill out the survey before February 10th, available at https://www.surveymonkey.com/r/SYW5QZL

Conferences

The European Wave and Tidal Energy Conference (EWTEC) 2017 will be held in Cork, Ireland on August 27-September 2. The call for abstracts has been extended to January 27, 2017. Submit your abstract here.

The Conference on Wind energy and Wildlife impacts (CWW) 2017 will be held in Estoril, Portugal on September 6-8. The call for abstracts is now open and will close February 15, 2017. Submit your abstract here.

The ICES Annual Science Conference 2017 will be held in Fort Lauderdale, Florida, USA on September 18-21. Please note the theme session about Introducing man-made structures in marine systems: assessing ecological effects, knowledge gaps and management implications. A call for abstracts is expected later this month.

New Annex IV Expert Forum

Annex IV hosted an Expert Forum on January 12, 2017 about environmental monitoring around turbines. As the first tidal turbine arrays are coming online, the opportunity to monitor environmental interactions and reduce uncertainty around key impacts is of increasing significance. Experts who are currently involved in monitoring around operational turbines or have completed monitoring surveys were invited to participate in an open discussion. A recording is available on Tethys.

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:

Monitoring the Condition of Marine Renewable Energy Devices through Underwater Acoustic Emissions: Case study of a Wave Energy Converter in Falmouth Bay, UK - Walsh et al. 2017

> Maintaining the engineering health of Marine Renewable Energy Devices (MREDs) is one of the main limits to their economic viability, because of the requirement for costly marine interventions in challenging conditions. Acoustic Emission (AE) condition monitoring is routinely and successfully used for land-based devices, and this paper shows how it can be used underwater. We review the acoustic signatures expected from operation and likely failure modes of MREDs, providing a basis for a generic classification system.

A New Model for Environmental and Economic Evaluation of Renewable Energy Systems: The Case of Wind Turbines - Savino et al. 2017

> Both scientific community and political institutions frequently stress the crucial role of energy and renewable energy systems as a key asset for global sustainable future development. Wind energy is a relevant renewable source due to its high conversion performances, achieved particularly by large scale plants. Nevertheless, the production processes, rather than the installation one, may entail relevant energy consumption, as well as the release of CO2 and other pollutants.

Visualising the Aspect-Dependent Radar Cross Section of Seabirds over a Tidal Energy Test Site Using a Commercial Marine Radar System - McCann & Bell 2017

> The long-term monitoring of seabirds around proposed marine renewable energy (MRE) sites is vital to assess the large-scale and long-term environmental impacts of MRE installations. Marine radar could be a valuable tool to augment traditional seabird surveys but the problem of aspect dependency of the generic radar cross section (RCS) of live birds in flight must be understood before radar data is correctly interpreted.

Understanding the Evidence: Wind Turbine Noise - Council of Canadian Academies 2015

Demand for renewable energy, including wind power, is expected to continue to grow both in Canada and globally for the foreseeable future. The wind energy sector in Canada has grown at an ever-increasing pace since the 1990s, and Canada is now the fifth-largest market in the world for the installation of new wind turbines. As wind turbines become a more common feature of the Canadian landscape, this new source of environmental sound has raised concerns about potential health effects on nearby residents.

Challenging Best Knowledge to Real Conditions on the SEMREV Marine Test Site - Perignon & Le Crom 2015

This paper presents a review of the last six years of sea states measurements at the SEMREV test site, compared to latest capabilities in term of wave modelling in a macro-tidal coastal environment. The paper provides a brief overview of the properties of the site inferred from the measurement and model capabilities, including the scores of both hindcast chains, the influence of the tidal forcing over the modelling and measurements or the spatial variability on site.

working to accelerate offshore consenting

Events:

ORJIP Ocean Energy (http://www.orjip.org.uk/) 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 also wishes to make you aware of the following opportunities:

- The Joint UK-China Offshore Renewable Energy announced the second of three calls, providing up to £4M to support UK researchers developing the next generation of technologies for safe, secure, cheap and efficient provision of clean energy.
- Several Horizon 2020 calls have deadlines in February 2017.
- The FORESEA (Funding Ocean Renewable Energy through Strategic European Action) Programme's second Call for support package applications is open until 28 February 2017.

News and Current Events

Marine Renewable Energy

European Marine Energy Centre exporting world-leading marine energy knowledge to China

UK wave and tidal energy experts are building innovation links with China based on the world-leading experience at the European Marine Energy Centre (EMEC) in Orkney. As Chinese academics turn their attention towards the global potential for marine renewable energy, they invited EMEC and other UK industry experts to visit their developing 'blue silicon valley' in Qingdao, discussing the creation of a Chinese version of EMEC: CMEC.

Philippine's first tidal energy project up soon

The renewable energy subsidiary of Philippine National Oil Co. has entered into a deal with Filipino and French partner firms to build the country's first tidal energy power plant— a project meant to harness the powerful flow of water along the Philippines' coastlines. In a statement, PNOC-Renewables Corp. said the move was part of its commitment to contribute to energy self-sufficiency in line with the Department of Energy's policy of creating a balanced energy mix.

Open Source Design Tool to Optimize Wave & Tidal Arrays Launched

Pioneering wave & tidal energy design tool - DTOcean - was officially launched today as an open source software package. The tool was funded by the European Union to assist project developers to design wave and tidal energy arrays by identifying optimal layouts, components and procedures. An active but growing user community is emerging around DTOcean, which industry and research communities are encouraged to join.

National Wind Technology Center tests wave energy converter for US

The National Wind Technology Center (NWTC) at the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) began validation work recently on Columbia Power Technologies' StingRAY wave energy converter. The converter is the first water power technology ever tested in an NREL dynamometer facility and, at two stories tall, the largest generator ever tested in an NWTC dynamometer.

Wind Energy

Carbon Trust launches tenders for floating wind studies

UK's Carbon Trust has launched a series of tenders to assess technology challenges associated with floating offshore wind. The studies are part of a joint industry project supported by the Scottish Government, DONG Energy, E.ON, Eolfi, innogy and Statoil, to better understand the anticipated risks and opportunities of developing floating wind farms at commercial scale.

Kenyan wind energy project nears completion

The launch of the Kenyan wind energy scheme, the Lake Turkana Wind Power project, is drawing close to producing power this year. On Wednesday, the founder of the project, Carlo Van Wageningen, told Reuters in a telephone interview that the wind energy project should be fully connected to the national electricity grid and producing power by the end of June this year.

US to lease Atlantic Ocean for offshore wind farm off Kitty Hawk

The U.S. Bureau of Ocean Energy Management said Tuesday it is offering 191 square miles in the Atlantic Ocean for a commercial lease to develop an offshore wind farm off Kitty Hawk. The announcement marks more than six years of research and analysis for developing an industrial-scale wind farm off North Carolina's coastline. Much of the ocean area initially identified by U.S. officials was scratched off the list because it conflicted with shipping routes, military zones, environmental ecosystems as well as tourism and recreation, which are significant contributors to the economies of coastal communities.

Siemens receives certification for 8-MW offshore wind turbine prototype

Siemens Wind Power (Munich, Germany) with the prototype certificate for its 8-megawatt (MW) offshore wind turbine SWT-8.0-154. The prototype certification confirms all relevant safety features on the turbine according to the Danish Executive Order BEK 73:2013 and IEC 61400-22 and allows Siemens to install a prototype of the 8-MW turbine at the test center for wind turbines in Østerild, Denmark.

Hallim to get 500MW offshore wind farm by 2020: Five new offshore wind farms are planned as part of Jeju's carbon-free 2030 bid

Jeju province in South Korea has announced that a 2.6 trillion won, 500 MW offshore wind farm will be constructed in west Jeju's Hallim within three years. The project is a part of an agreement with three other local governments: Gwangju City and North and South Jeolla provinces.