TETHYS BLAST

August 19, 2016

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.

Annex IV Expert Forums

To address the continued high level of uncertainty surrounding many interactions of marine renewable energy devices and the environment, Annex IV will occasionally host Expert Forums, where a small group of invited experts discuss a challenging topic being pursued by several research groups around the world. These discussions are recorded and made available to the public. Two Expert Forums were held in early August, about:

- **Potential Risks to Larvae and Plankton from Tidal Turbines** (August 11)
- **Risk of Collision Between Marine Mammals and Tidal Turbines - Assessing at the Population Level** (August 16)

The presentations and discussions were recorded and are available to the public. If you have any interest in partnering with Annex IV and host an Expert Forum, please let us know.

New Documents on Tethys

New documents have been added to Tethys in the last two weeks. These documents have been hand-selected for their relevance to the environmental effects of wind and marine renewable energy. The listings below are short introductions to several new or popular documents that can be accessed through the accompanying Tethys links:

Mitigation Measures for Wildlife in Wind Energy Development, Consolidating the State of Knowledge - Gartman et al. 2016

> During this rapid development of wind energy aiming to combat climate change worldwide, there is greater need to avoid, reduce, and compensate for impacts on wildlife: Through the effective use of mitigation, wind energy can continue to expand while reducing impacts. This is a first broad step into discussing and understanding mitigation strategies collectively, identifying the current state of knowledge and be a beneficial resource for practitioners and conservationists.

Laboratory Experiments on the Effects of Blade Strike from Hydrokinetic Energy Technologies on Larval and Juvenile Freshwater Fishes - Schweizer et al. 2012

> Although numerous HK designs are under development (see DOE 2009 for a description of the technologies and their potential environmental effects), the most commonly proposed current-based projects entail arrays of rotating devices, much like submerged wind turbines, that are positioned in the high-velocity (high energy) river channels. The many diverse HK designs imply a diversity of environmental impacts, but a potential impact common to most is the risk for blade strike to aquatic organisms.

Effects of Offshore Pile Driving on Harbour Porpoise Abundance in the German Bight: Assessment of Noise Effects - Brandt et al. 2016

> This study analyses the effects of the construction of eight offshore wind farms within the German North Sea between 2009 and 2013 on harbour porpoises (*Phocoena phocoena*). It combines porpoise monitoring data from passive acoustic monitoring using Porpoise Detectors (POD data 2010-2013) and aerial surveys (2009-2013) with data on noise levels and other piling characteristics. These data were analysed in detail in connection to pile driving activities, most of which occurred with application of noise mitigation techniques in order to reduce disturbance effects.

Environmental Scoping Report: Brims Tidal Array - OpenHydro & SSE Renewables 2013

> This Scoping Report is designed to support the application for both phases of the 200MW Project with the applications submitted in two phases. Phase I consists of up to 60MW with construction expected to begin in 2019. Phase II will be subject to a separate application process, with planned delivery of the fully commissioned 200MW Project in 2023. This phasing will allow BTAL to gain experience of deploying devices in an array of reasonable scale and then evaluating its performance, both technically and environmentally before completing the full build-out.

Current News

Current news articles of international interest on win and marine renewable energy include:

Energy Department Announces Up to $40 Million for an Open-water Wave Energy Test Site

> The Energy Department today announced up to $40 million in available funding, subject to congressional appropriations, to support the site selection, design, permitting, and construction of a national open-water, wave energy testing facility within U.S. federal or state waters. The Department anticipates the facility will contain at least three test berths to simultaneously and independently test wave energy devices. The testing facility will gather critical performance data to address technical risks, lower costs, and inform future designs to accelerate the commercialization and deployment of wave energy technologies in the United States.

Interior Announces Milestone for Wind Energy Development Offshore North Carolina

> U.S. Secretary of the Interior Sally Jewell and Bureau of Ocean Energy Management (BOEM) Director Abigail Ross Hopper have announced a proposed lease sale for 122,405 acres offshore North Carolina for commercial wind energy leasing. The proposed lease is for the Kitty Hawk Wind Energy Area, which BOEM identified in consultation with members of its North Carolina Intergovernmental Renewable Energy Task Force. The task force includes membership from federal, state, tribal, and local government partners. In addition, BOEM considered information gathered through outreach with stakeholders.

Tidal energy company tests prototype in Canadian archipelago, Haida Gwaii

> British Columbia-based tidal developer, Yourbrook Energy Systems Ltd., is testing what it calls a prototype of a shallow water tidal-powered generator pump that could one day be used as part of a pumped storage hydroelectric project. The testing began last week in the Juskatla Narrows, which leads to the Juskatala Inlet at Haida Gwaii, an archipelago on the north coast of British Columbia, Canada. The testing is expected to last about three months, and the project is geared toward ultimately reducing part of Haida Gwaii's dependence on diesel generated power.

Germany's $1.8 Billion Offshore Wind Farm Draws Swiss Partners

> The 1.6 billion-euro ($1.8 billion) Merkur offshore wind project in the German North Sea reached financial close with funding from European and U.S. investors. Switzerland-based Partners Group Holding AG invested 250 million euros for 50 percent of the project, according to a statement on Friday. InfraRed Capital Partners Ltd.'s Infrastructure Fund III committed took a 25 percent stake for 125 million euros. Belgium's Dredging Environmental & Marine Engineering NV, General Electric Co. and the French Environment and Energy Management Agency also took stakes.