Tethys Blast

July 10, 2015

Welcome to the latest edition of the bi-weekly Tethys Blast!

Tethys Blasts will update you with new information available on Tethys, new features of Tethys, and current news articles of international interest on offshore 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 renewable ocean energy development.

We need your help to ensure that Tethys functions at peak performance! Please notify us of any errors or broken links you come across within Tethys. The Tethys team is continuously on the lookout for these, but a short message with the name of the page or URL is extremely helpful! You can provide comments in the comment box on the bottom of each page. Thanks in advance!

Please note the recent changes made to Tethys. You will now see a calendar on the home page that lists upcoming webinars, conferences, workshops, and more.

New Tethys Story

Tethys Stories are an opportunity to learn more about organizations, events, ideas, and news from the perspective of someone closely involved with the topic. If you are interested in submitting a Tethys Story, reply to tethys@pnnl.gov. Check out our most recent story:

Researchers address Challenges to Marine Energy Development: the 2015 Marine Energy Technology Symposium (METS)

> The third annual Marine Energy Technology Symposium (METS) was held in Washington D.C., US April 27-29, 2015, in conjunction with the International Marine Renewable Energy Conference (IMREC) and the National Hydropower Association. IMREC and METS brought together scientific and engineering experts, technology developers, policy makers, and regulators from the US and beyond to focus on marine renewable energy technologies, environmental effects, and facilitating advancement of the industry worldwide.

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 offshore renewable energy. The listings below are short introductions to several popular documents that can be accessed through the accompanying Tethys links:

Underwater Noise from a Wave Energy Converter Is Unlikely to Affect Marine Mammals - Tougaard 2015

> Underwater noise was recorded from the Wavestar wave energy converter; a full-scale hydraulic point absorber, placed on a jack-up rig on the Danish North Sea coast. Noise was recorded 25 m from the converter with an autonomous recording unit (10 Hz to 20 kHz bandwidth). Median sound pressure levels (L_{eq}) in third-octave bands during operation of the converter were 106–109 dB re.

Rapid Macrobenthic Recovery after Dredging Activities in an Offshore Wind Farm in the Belgian Part of the North Sea - Coates et al. 2015

> The development of offshore wind farms (OWFs) in the North Sea has increased considerably to create alternatives for fossil fuel energy. Activities related to the construction of OWFs, in particular gravity-based foundations (GBFs), are mainly associated to dredging, causing direct effects to the macrofauna in the seabed. The sediment characteristics and macrofauna were studied before and after construction (2005–2010) of six GBFs in an OWF in the Belgian part of the North Sea.

Hearing Thresholds of a Harbor Porpoise (*Phocoena phocoena*) for Playbacks of Seal Scarer Signals, and Effects of the Signals on Behavior - Kastelein et al. 2015

> Acoustic Mitigation Devices (AMDs) are used to deter marine mammals from construction sites, in order to prevent hearing injury by offshore pile driving noise. To estimate the distance at which two AMDs designed as 'seal scarers' (Ace Aquatec and Lofitech) are detected by harbor porpoises, the 50% hearing detection thresholds for playbacks of recordings of the AMD sounds were assessed. Both became audible at a received broadband sound pressure level (SPL) of 55 dB re 1 μPa.

Proceedings of the 4th Oxford Tidal Energy Workshop - University of Oxford 2015

> The 4th Oxford Tidal Energy Workshop, OTE2015, was held on March 23rd and 24th. This workshop builds upon three successful workshops to provide opportunities for scientists, engineers, and researchers to discuss technical issues in tidal stream power generation. Topics included turbulence, basin modelling, device arrays, and device control.

Comparison of Manual and Semi-Automatic Underwater Imagery Analyses for Monitoring of Benthic Hard-Bottom Organisms at Offshore Renewable Energy Installations - Saskov et al. 2015

> The construction of new offshore wind farms is one of the strategies to fulfill growing demands for “green” renewable energy. Underwater imagery is an important tool in the environmental monitoring of offshore renewable energy installations, especially in rocky benthic environment where traditional techniques are not applicable. Underwater video from the high energy Norwegian Sea coast was used for this study. Traditional manual point-based benthic cover estimations from selected frames were tested against a semi-automatic approach which involved making mosaic images from underwater videos.

Current News

Current news articles of international interest on offshore renewable energy include:

Azura wave energy system deployed in Hawaii

> Although wave energy-harvesting systems are often just presented as concepts that may someday see actual use, one was recently deployed in Hawaii to provide power to the municipal grid. Built by Northwest Energy Innovations, the Azura device will remain in operation for a 12-month assessment period, with an eye toward eventual commercialization.

First foundations in place at 600-MW Gemini offshore wind farm

> The first seven monopiles have been installed at the 600-MW Gemini wind farm off the Dutch coast, Canadian firm Northland Power Inc said Wednesday. The first steel foundation was put in place on July 1 and several others followed suit.

Schottel Hydro Equipment for Tidal Energy Project

> SCHOTTEL HYDRO will manufacture and deliver the variable pitch hub for the AR1500 turbine for Phase 1a of the MeyGen tidal energy project under contract to Lockheed Martin. The MeyGen Phase 1a AR1500, a 1.5 MW seabed mounted turbine, is being designed and delivered by Atlantis Resources and Lockheed Martin.

Alstom to supply turbines for 400MW Merkur offshore wind farm in Germany

> Merkur Offshore has awarded a contract to Alstom to supply 66 Alstom Haliade 150-6MW turbines for the 400MW Merkur offshore wind farm in the German North Sea. The contract also includes long-term service and maintenance works.