



Tethys Blast

May 1, 2015

Welcome to the first May edition of the bi-weekly Tethys Blast!

Tethys Blasts will keep you updated with new information available on Tethys, new features on 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.

New Articles on Tethys

A total of 12 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 prominent documents that can be accessed through the accompanying Tethys links:

[Benthic Habitat Characterization Offshore the Pacific Northwest Volume 1: Evaluation of Continental Shelf Geology - Goldfinger et al. 2014](#)

The wave and wind climates along the west coast of North America provide some of the best prospects for offshore renewable energy development, yet initial assessments of the seafloor have been patchy. The Bureau of Ocean Energy Management (BOEM) requires knowledge of the seafloor environment and of seafloor-associated (benthic) organisms that may be affected by renewable energy activities. This program was designed to provide baseline knowledge of seafloor geology and marine invertebrate distributions at a regional scale by undertaking new mapping, synthesizing existing mapping data, conducting biological assessments and developing new predictive models.

Offshore Wind Park Monitoring Programmes, Lessons Learned and Recommendations for the Future - Lindeboom et al. 2015

Over a decade of monitoring offshore wind park environmental impact triggered a reflection on the overall objectives and how to best continue with the monitoring programmes. Essentially, basic monitoring has to be rationalised at the level of the likelihood of impact detection, the meaningfulness of impact size and representativeness of the findings. Targeted monitoring is crucial and should continue to be applied to disentangle processes behind observed impacts, for instance the overarching artificial reef effect caused by wind parks. The major challenge, however, remains to achieve a reliable assessment of the cumulative impacts.

Assessment of Entanglement Risk to Marine Megafauna due to Offshore Renewable Energy Mooring Systems - Harnois et al. 2015

This paper defines a methodology to compare different offshore renewable energy (ORE) mooring configurations in terms of the risk of entanglement they present to marine megafauna. Currently, the entanglement of large marine animals is not explicitly considered in environmental impact studies. Recommendations need to be developed, assessing the risk of entanglement of ORE mooring configurations at the beginning of their design process. Physical parameters of the mooring system affecting the relative risk of entanglement have been identified as tension characteristics, swept volume ratio and mooring line curvature.

Consolidating the State of Knowledge: A Synoptical Review of Wind Energy's Wildlife Effects - Schuster et al. 2015

At this stage, it is important to identify what we have learnt so far, as well as which predominant uncertainties and gaps remain. This review article aims to consolidate the state of knowledge, providing a qualitative analysis of the main effects of wind energy development on- and offshore, focusing on frequently studied species groups (bats, breeding and resting birds, raptors, migratory birds, marine mammals). We reviewed over 220 publications from which we identified predominant hypotheses that were summarized and displayed in tables.

Flocculation and Sediment Deposition in a Hypertidal Creek - O'Laughlin et al. 2014

In the hypertidal Bay of Fundy, environmental impacts in response to commercial-scale tidal power development remain to be fully understood. The extraction of tidal energy may impact sediment dynamics in far-field environments, such as the intertidal zone, through potential alterations to tidal amplitude in the Minas Basin. Tidal conditions (e.g. current velocity, turbulence, suspended sediment concentration) were monitored in a sheltered salt marsh creek over 18 tidal cycles in various stages of the spring-neap cycle.

Current News

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

[Registration Open for US DOE's Wave Energy Prize](#)

The US Department of Energy (DOE) has announced that its Wave Energy Prize competition is now underway, with a prize purse totaling more than \$2 million available for top ranking teams. Details of the competition were announced by Dr. Dave Danielson, DOE Office of Energy Efficiency and Renewable Energy Assistant, during the joint opening session of the annual National Hydropower Association and International Marine Renewable Energy Conferences. The prize has been introduced to encourage the development of game-changing wave energy conversion (WEC) devices that double the energy captured from ocean waves, which in turn will reduce the cost of wave energy, making it more competitive with traditional energy solutions.

[Offshore Wind Farm Risk to Seabirds Varies Between Years](#)

Offshore wind farms are now operating or being constructed all around the UK as the government invests in renewable energy, but what are the consequences of such developments for our wildlife? New research by the British Trust for Ornithology (BTO) has used state-of-the-art GPS tags to show how Lesser Black-backed Gulls breeding at a protected site in Suffolk use areas of sea where offshore wind farms already exist, and where future developments are earmarked.

[Siemens Sells its Leading SeaGen Tidal Energy Venture to Atlantis](#)

Engineering firm Siemens has sold its Bristol-based Marine Current Turbines (MCT) business and its SeaGen technology to Atlantis, a global leader in the marine energy sector. As well as transferring the tidal turbine business, the sale also includes MCT's extensive seabed rights, an existing pipeline of projects, staff and intellectual property. The landmark deal consolidates the world's two leading marine energy companies and creates one of the largest portfolios of tidal current power projects in the UK.

[Westermost Rough Offshore Wind Farm - Photographs](#)

Final installation of the final wind turbine at the Westermost Rough offshore wind farm and exclusive look at the finished site.