Tethys Blast

July 24, 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.

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:

Bats and Wind Energy Development

> Bat fatalities at wind energy facilities are a growing concern, particularly since bats have low reproductive rates and populations are slow to recover from long-term, large-scale impacts. Although bat carcasses have been reported underneath wind turbines since the early 1970's, it was nearly 30 years before turbine-related bat fatalities received much attention. Over the past decade, our understanding of how and why bats interact with wind turbines has increased, with most data coming from the United States, Canada, and Europe. Yet, many questions remain unanswered even in these well-studied regions, and almost no data are available from the rest of the world.
>
> Please visit this page, *log in to Tethys*, and comment at the bottom of the page. We are hoping to hear more on your thoughts regarding bats and wind energy development!

New Documents on Tethys

A total of 39 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:

Modelling the Propagation of Underwater Acoustic Signals of a Marine Energy Device Using Finite Element Method - Ikpekha et al. 2014

> Today a large number of marine based energy devices are been deployed rapidly across coastal areas of the world's oceans to harness the huge natural energy and power potential provided by nature. These devices produce sound signals at high sound pressure levels across a wide range of frequencies that could be detrimental to the health and livelihood of marine animals.

Ecological Research at the Offshore Windfarm Alpha Ventus: Challenges, Results and Perspectives - Beiersdorf and Radecke 2014

> At present and over the next few years, large-scale windfarms are being installed far off the coast of Germany in the North and Baltic Sea, making a major contribution to electricity generation from renewable energy sources. One of the German government's aims is to ensure the environmentally sound and sustainable development of offshore wind energy. Germany's first offshore test site, alpha ventus, was therefore accompanied from the construction phase to the first years of operation by an intensive environmental research programme, the StUKplus project.

Environmental Impact Assessment for an OTEC Plant in Martinique Island - Auvray et al. 2015

> The Ocean Thermal Energy Conversion (OTEC) is a marine renewable energy system that uses the temperature difference between the cold deep waters and warm surface waters to produce electricity. Due to innovation of such a project, a specific methodology has been done for that.

Effects on Harbour Porpoises from Rødsand 2 Offshore Wind Farm - Teilmann et al. 2012

> E.ON Vind Sverige has been commissioned the construction of Rødsand 2 Offshore Wind Farm comprising 90 wind turbines, south of Lolland-Falster, Denmark. The location of the wind farm is 3 km west of the existing Nysted Offshore Wind Farm with 72 turbines. In combination the two wind farms represents the largest wind farm area in the world. Porpoises were monitored by automatic acoustic dataloggers (T-PODs) according to a statistical BACI design and deployed during baseline (Sep 2008-Feb 2009) and during operation (Sep 2011-Mar 2012).

The Effects of Noise on Aquatic Life - Popper and Hawkins 2012

> These proceedings are the extended abstracts of the papers presented at the 2010 Second International Meeting on the Effects of Noise on Aquatic Life that took place in August in Cork, Ireland. The meeting brought together 248 scientists, regulators, and representatives from industry and environmental groups, representing 21 countries from all continents, to hear papers and discuss a broad range of topics focused on underwater sound and its effects on organisms living in the aquatic environment.

Current News

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

First Grid-Connected Wave Energy Facility

> An electrical generating plant powered by wave energy has commenced operations near Perth, Australia. Built by Carnegie Wave Earth, the Perth Wave Energy Project is the first and only operational wave power plant anywhere in the world that uses multiple wave units. The facility has a peak generating capacity of 240 kilowatts - enough to power up to 2,000 homes.

Offshore Wind Farm Raises Hopes of U.S. Clean Energy Backers

> A few miles off the coast of Block Island, part of Rhode Island, a small flotilla has been gathering: crane vessels, tugboats and barges that began this week installing the 1,500-ton foundations of the nation's first commercial-scale offshore wind farm.

British Firms Sign up to Anglo-Canadian Tidal Energy Research Push

> Five British companies are hoping to make waves in the tidal energy market, after securing funding from a research programme backed by Innovate UK and the Canadian province of Nova Scotia. Up to £700,000 has been provided to investigate the impact the marine environment and tidal technologies have on each other, with a view to improving tidal device designs so they can better withstand tides and currents.

Offshore Wind Energy Project Outside Fukushima Coming Along

> The experimental offshore wind energy project to be located outside of Fukushima that was started all the way back in early 2012 has been coming along, according to recent reports. Most recently, the assembly work on a 7 megawatt (MW) oil pressure drive-type wind turbine (on a 3-column semi-sub floater) was completed at Onahama port.