



January 8, 2016

Welcome to the first Tethys Blast of the New Year! This will provide an update on 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.

## METS - Call for Abstracts

METS (Marine Energy Technology Symposium) will be held in Washington DC from 25-27 April 2016 and will feature tracks on the environmental effects of marine energy development. This is a great opportunity to meet with, share, and hear from your colleagues on recent progress. Please consider submitting an abstract by **January 22nd**; instructions for submitting an abstract are available on Tethys: <http://tethys.pnnl.gov/events/mets-2016-abstracts-due>.

## New Documents on Tethys

A total of 373 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 marine and wind renewable energy. The listings below are short introductions to several new or popular documents that can be accessed through the accompanying Tethys links:

**[Estimates of Collision Risk of Harbour Porpoises and Marine Renewable Energy Devices at Sites of High Tidal-Stream Energy](#) - Wilson et al. 2014**

Extracting renewable energy from the sea is an attractive alternative to burning fossil fuels. Like any marine industry, obtaining energy from wind, waves or tidal-streams could have impacts on the marine environment (positive or otherwise). One frequently cited area of uncertainty for extracting energy from fast flowing tidal currents is the possibility of large marine vertebrates (including whales, dolphins, porpoises

[collectively cetaceans], seals, sharks, turtles, and diving birds) colliding with submerged tidal-turbines - a scenario with parallels to the issues surrounding bird strikes by wind turbines.

### **Developing an Avian Collision Risk Model to Incorporate Variability and Uncertainty - Masden 2015**

As wind energy developments increase globally the potential associated environmental impacts are receiving considerable attention, particularly avian impacts. These potential impacts on bird populations can be grouped into three main types: direct mortality due to collision with turbines/infrastructure; physical habitat modification and/or loss; and behavioural responses of birds to turbines (Fox *et al.* 2006; Langston 2013). Focussing on avian collision, a variety of methods have been developed to aid the assessment of the risk of collision, including collision risk models.

### **2015 Massachusetts Ocean Management Plan: Volume 2 - Baseline Assessment and Science Framework - Commonwealth of Massachusetts**

The Oceans Act mandated a Baseline Assessment as part of the ocean plan and required a review and update of this Baseline Assessment at least every five years. The 2009 Baseline Assessment constituted an extensive cataloguing of the current state of knowledge regarding human uses, natural resources, and other ecosystem components of Massachusetts ocean waters. The 2015 update to the Baseline Assessment is presented here in Volume 2. It reports on the current condition and status, as well as trends since 2009, in Massachusetts marine waters.

### **Investigating the Potential Effects of Marine Renewable Energy Developments on Seabirds - Wade 2015**

Marine renewable energy developments (MREDs) are becoming an increasing feature of the marine environment. MREDs are just one of several human activities in the marine environment that have the potential to impact marine species. Scotland has considerable potential for generating energy from the marine environment in the form of extensive wind, wave and tidal-stream resources. Scotland also hosts numerous internationally important breeding populations of seabirds and Scottish territorial waters represent a key overwintering area for many species.

### **Assessment of Wind-Farm and Other Bird Casualties from Carcasses found on a Northumbrian Beach over an 11-Year Period - Newton and Little 2009**

Weekly searches were made for bird carcasses to ascertain causes of death. Experiments tested the efficiency of searches, longevity of carcasses, and effects of wind direction on deposition rates. Allowing for bodies not found, the local wind-farm probably killed 148.5-193.5 birds per year, or 16.5-21.5 birds per turbine per year (mainly large gulls).

# Current News

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

## **[US\\$10.5 million to support MHK system design and operation innovation](#)**

The U.S. Department of Energy's (DOE) Office of Energy Efficiency & Renewable Energy announced six organizations will each receive up to US\$10.5 million to support the design and operation of innovative marine and hydrokinetic (MHK) systems through survivability and reliability-related improvements.

## **[FoundOcean completes installation of Gemini Offshore Wind Farm](#)**

FoundOcean has successfully completed the grouting of foundations at Gemini Wind Farm on behalf of the main contractor, Van Oord. The 600-MW offshore wind farm, situated 85 km north of the Dutch province of Groningen, is made up of 150 wind turbines and spans across two sites.

## **[Sweden deploys 120-ton subsea generator switchgear at MHK project](#)**

A significant step to develop the first megawatt from the marine hydrokinetic (MHK) Sotenas Wave Energy Plant off of Sweden's west coast took place earlier this month when a 120-ton subsea generator switchgear was deployed and connected to the Swedish national power grid via a 10-km-long subsea cable.

## **[Global Installed Capacity of Offshore Wind Energy to reach 52,120 MW by 2022 Driven by Rising Investments in Europe](#)**

The increasing advantages of offshore wind energy over its onshore counterpart is a major factor boosting the global offshore wind energy market, states Transparency Market Research in its latest report. The report, titled "Offshore Wind Energy Market - Global Industry Analysis, Size, Share, Growth, Trends, and Forecast 2014 - 2022", is available for sale on the company website. According to the report, the global installed capacity in the offshore wind energy market is poised to grow from 7,045.4 MW in 2013 to 52,120.9 MW in 2022, developing at a 25.0% CAGR during the forecast period.