TETHYS BLAST

September 2, 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.

Webinar Recordings Available

As a reminder, Annex IV and WREN webinars are recorded and posted on Tethys following the live broadcast. Recordings are now available for the following webinars:

- Annex IV webinar on the Role of Biofouling in Marine Renewable Energy Development, held on July 12
- WREN webinar on Assessing Marine and Avian Wildlife off the New York Coast, held on July 21

New Documents on Tethys

New documents are added to Tethys every week. These documents are 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:

A Coordinated Action Plan for Addressing Collision Risk for Marine Mammals and Tidal Turbines - Hutchinson & Copping 2016

> This report outlines a coordinated action plan aimed at reducing the scientific uncertainty associated with collision risk of marine animals and tidal turbines. This plan includes steps to take toward resolving the challenging issue of decreasing scientific uncertainty. The content of this report was derived from the involvement of experts during a workshop held in Edinburgh, Scotland in February 2016.

Preliminary Assessment of Offshore Wind Development Impacts on Marine Ecosystems - Huang & Hall 2015

> California seeks to increase renewable energy production in the near future, and utilizing large-scale offshore wind farms provides an alternative to sacrificing scarce land to meet this end. However, the impacts of offshore wind farms on the marine atmospheric environment should be understood before any decisions about wind farm placement are made. Using a high-resolution regional climate model supplemented by a wind farm parameterization, the authors investigated the atmospheric effects of a hypothetical offshore wind farm located in a region with sufficient wind resources near Northern California's major metropolitan areas.

Do Changes in Current Flow as a Result of Arrays of Tidal Turbines Have an Effect on Benthic Communities? - Kregting et al. 2016

> Arrays of tidal energy converters have the potential to provide clean renewable energy for future generations. Benthic communities may, however, be affected by changes in current speeds resulting from arrays of tidal converters located in areas characterised by strong currents. Current speed, together with bottom type and depth, strongly influence benthic community distributions; however the interaction of these factors in controlling benthic dynamics in high energy environments is poorly understood.

Comprehensive Guide to Studying Wind Energy Wildlife Interactions - Strickland et al. 2011

> A desire to maximize the knowledge gained from the emerging study of wind energy/wildlife interactions prompted the National Wind Coordinating Collaborative to publish Studying Wind Energy/Bird Interactions: A Guidance Document (Anderson et al. 1999). As concern over potential impacts to bats emerged as a significant issue for renewable energy, the NWCC supported the publication of Assessing Impacts of Wind Energy Development on Nocturnally Active Birds and Bats: A Guidance Document (Kunz et al. 2007a).

Temporal Patterns in Habitat Use by Small Cetaceans at an Oceanographically Dynamic Marine Renewable Energy Test Site in the Celtic Sea - Cox et al. 2016

> Shelf-seas are highly dynamic and oceanographically complex environments, which likely influences the spatio-temporal distributions of marine megafauna such as marine mammals. As such, understanding natural patterns in habitat use by these animals is essential when attempting to ascertain and assess the impacts of anthropogenically induced disturbances, such as those associated with marine renewable energy installations (MREIs). This study uses a five year (2009–2013) passive acoustics (C-POD) dataset to examine the use of an oceanographically dynamic marine renewable energy test site by small cetaceans, dolphins (unspecified delphinids) and harbour porpoises *Phocoena phocoena*, in the southern Celtic Sea.

Current News

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

The largest wind farm in US history just got the green light

> The largest wind energy project in US history just won approval in Iowa. Called Wind XI, the $3.6 billion project will include 1,000 turbines and is expected to be completed in 2019. Once it's up and running, the wind farm will have the capacity to generate up to 2,000 megawatts of electricity — enough to power roughly 800,000 homes in the state.

Tidal energy array makes first exports to grid

> A tidal array consisting of a set of turbines has been connected to the national electricity grid in Scotland. Marine engineers from Edinburgh-based firm Nova Innovation have been busy installing the second of the two underwater turbines this month at a site in Shetland Isles. The two underwater turbines are linked, making them the world's first operational tidal array.

South Africa Could Achieve 5.6 GW Wind Energy Capacity By 2020

> According to a new report released by GlobalData, South Africa has immense potential for wind installations over the next four years. The research and consulting firm GlobalData report states that more than 3 GW of wind energy is expected to be installed by 2020 which will bring the country's cumulative wind capacity to 5.6 GW.

The US's first offshore wind farm is ready to go, despite critics' blowback

> The turbines stand like sentinels off the coast of this tiny island, each rising twice as high as the Statue of Liberty. Workers attached the final 240-foot-long blades just days ago, turning the nation's first offshore wind farm into a reality. When residents look out at the altered horizon from their gray-shingled houses, some see progress, the birth of a promising industry, a way to ditch the 1 million gallons of diesel fuel that Block Island burns each year for power.

Nova Scotia ranked fourth in tidal energy, behind South Korea, France and the U.K.

> The National Energy Board of Canada has ranked leaders in tidal energy capacity by country, citing Ocean Energy Systems' 2015 Annual Report, placing South Korea far in the lead at 511MW, followed by France at 246MW and the U.K. at 139MW. Canada's 40MW capacity ranks it fourth, ahead of Belgium at 20MW, China at 12MW, and Sweden at nearly 11MW.