Tethys Blast

September 18, 2015

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 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.

State of the Science Report - Feedback

Annex IV is writing a State of the Science report about the environmental impacts of marine renewable energy. The report is being authored by experts from several member nations, drawing on different experiences to write a comprehensive report. However, we want to hear your input on the report structure and topic coverage to ensure that this report accurately encompasses the full state of the science. Please complete this **brief survey**.

Postdoctoral Position in Coastal Ocean Modeling

The Pacific Northwest National Laboratory (PNNL) is hiring a graduated PhD position to work with a well-established modeling team in Seattle, WA, USA to conduct wave, biogeochemical, and storm-surge modeling using advanced wave and coastal ocean models. Applicants should demonstrate solid experience with wave models such as WAVEWATCHIII, FVCOM-SWAVE, and SWAN. Contact zhoaqing.yang@pnnl.gov with questions, and **apply here**.

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 new or popular documents that can be accessed through the accompanying Tethys links:

Hydrokinetic Turbine Models in Complex Channel Topography: Local Scour, Sediment Transport and Device Performance - Hill et al. 2015

> Accelerating marine energy development requires investigating the interactions between the engineered environment and its surrounding physical and biological environment. The complex and energetic physical environments desired for such energy conversion installations provide difficulties for efficient and sustainable device designs. One area of investigation focuses on the interactions between the channel topography and substrate material and its impacts on the structural integrity of hydrokinetic devices, as well as device impacts on local scour and far-field sediment transport.

Avian Collision Risk Models for Wind Energy Impact Assessments - Masden and Cook 2016

> With the increasing global development of wind energy, collision risk models (CRMs) are routinely used to assess the potential impacts of wind turbines on birds. We reviewed and compared the avian collision risk models currently available in the scientific literature, exploring aspects such as the calculation of a collision probability, inclusion of stationary components e.g. the tower, angle of approach and uncertainty.

Challenges to Integrating Active Acoustic Sensors - Cotter et al. 2015

> Before large-scale implementation of marine renewable energy can move forward, it is necessary to understand the environmental impacts of these devices to ensure that the benefits of marine energy outweigh the environmental costs. Environmental monitoring around pilot scale installations can help to close the knowledge gaps surrounding the environmental effects of marine energy devices.

Attitudes towards Marine Energy: Understanding the Values - de Groot 2015

> Marine Renewable Energy (MRE) in the form of wave, tidal and offshore wind has emerged as a potentially major component of strategies to reduce carbon dioxide emissions and combat climate change. One factor influencing the implementation of MRE technologies is acceptance by people living near developments.

Approaching Population Thresholds in Presence of Uncertainty: Assessing Displacement of Seabirds from Offshore Wind Farms - Busch and Garthe 2016

> Assessment of the displacement impacts of offshore wind farms on seabirds is impeded by a lack of evidence regarding species-specific reactions to developed sites and the potential ecological consequences faced by displaced individuals. In this study, we present a method that makes best use of the currently limited understanding of displacement impacts.

Current News

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

Feds Approve Offshore Wind Farm Areas for NC

> A federal bureau identified a 480-square mile area off North Carolina's coast in the Atlantic Ocean for constructing offshore wind farms, a decision that sets the stage for leasing the areas to developers. Thursday's announced decision by the U.S. Bureau of Ocean Energy Management keeps intact the same ocean lots identified in August, when the bureau stunned wind farm advocates by shrinking the wind farm zone to 480 square miles from 1,900 square miles.

Wave Energy Project Closer with EU Funding Deal

> RENEWABLE energy firm Aquamarine Power believes its Oyster wave-energy converter has moved closer to becoming a commercial product after receiving an €800,000 cash injection from the EU to improve the technology's performance. The EU Horizon 2020 grant, equivalent to £580,000, was awarded to the firm and the National University of Ireland, Maynooth (NUIM), and the new three-year Innowave programme will investigate ways to optimise Oyster's energy capture and economic performance.

U.K. Rejects Offshore Wind Farm Proposal

> The U.K. Department of Energy & Climate Change (DECC) has rejected a proposal to construct a 970 MW offshore wind farm in Navitus Bay amid concerns regarding the project's seascape, landscape and visual impacts. The proposed $8.3 billion farm would have powered about 700,000 southern London households and created about 1,700 jobs.

Scientists Recreate Scotland's' Seas to Test Wave Energy Technology

> A ground-breaking wave pool at the University of Edinburgh claims to be the first ever testing-facility to recreate both the wave and tidal movement of Scotland's seas. Researchers behind the FloWave project say it will enable developers to test their technology without having to pay for expensive offshore trials.