Tethys Blast

April 17, 2015

Welcome to the second April 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 27 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:

Social and Ecological Impacts of Marine Energy Development - Bonar et al. 2015

> For marine energy to be truly sustainable, its social and ecological impacts must be identified and measures by which to mitigate adverse effects established before devices are deployed in large arrays. To inform future research and encourage environmentally-sensitive developments, this review aims to identify the most significant social and ecological issues associated with wave and tidal current energy generation. Modifications to wave climates, flow patterns, and marine habitats, particularly through increased underwater noise and collision risk, are identified as key ecological issues. Social acceptance of renewable energy is found to be closely linked to the level of stakeholder involvement and the public perception of renewable energy.

Repeated Mapping of Reefs Constructed by *Sabellaria spinulosa* Leuckart 1849 at an Offshore Wind Farm Site - Pearce et al. 2014

> *Sabellaria spinulosa* reefs are considered to be sensitive and of high conservation status. This article evaluates the feasibility of using remote sensing technology to delineate *S. spinulosa* reefs. *S. spinulosa* reef habitats associated with the Thanet Offshore Windfarm site were mapped using high resolution sidescan sonar (410 kHz) and multibeam echo sounder (< 1 m(2)) data in 2005 (baseline), 2007 (pre-construction baseline) and 2012 (post-construction).

TROPOS Project Final Report - Brito 2015

> The global population is growing and space and resources along the coast are limited. Therefore, the development of novel offshore technologies allowing for the exploitation of oceanic resources becomes more and more important. The TROPOS project aimed at developing a floating modular multi-use platform system for use in deep waters, with an initial geographic focus on the Mediterranean, Tropical and Sub-Tropical regions, but designed to be flexible enough so as not to be limited in geographic scope. The floating design facilitates access to deep sea areas and resources where deployment of conventional platform types is not possible.

Ocean Thermal Energy Conversion: Assessing Potential Physical, Chemical and Biological Impacts and Risks - Coastal Response Research Center 2010

> Ocean Thermal Energy Conversion (OTEC), a process by which energy from natural temperature differentials in the ocean are converted to mechanical and electrical energy, is a renewable energy source that has experienced a resurgence in interest in recent years. As the lead licensing agency for OTEC facilities under the Ocean Thermal Energy Conversion Act (OTECA), NOAA's Office of Ocean and Coastal Resource Management (OCRM) is responsible for evaluating the potential impacts and risks that the construction, installation, and operation of an OTEC facility poses to the environment. To understand these risks, a thorough understanding of the magnitude and extent of likely physical, chemical and biological impacts is required.

Offshore Wind Submarine Cable Spacing Guidance - TÜV SÜD PMSS 2014

> Until recently, developments in offshore electricity generation and the need for long distance power transmission, planned spacing between power cables has largely been a function of economic requirements and grid connection constraints (both key factors in routing decisions). Historically, subsea power transmission links were limited to a few miles in length linking islands to the mainland grid or between points on the mainland where a submarine route across a bay or estuary was economically and technically viable. Such short links are typically concentrated at the most convenient point for connection to the transmission grid and, where strong enough or reinforced, additional cables could be concentrated into that area to meet growing demand.

Current News

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

Virginia gets Country's First Wind Energy Research lease in Federal Waters

> Virginia is the first state in the United States to secure a wind energy research lease to build and operate turbines in federal waters, Gov. Terry McAuliffe announced Tuesday. The agreement with the federal Bureau of Ocean Energy Management (BOEM) will enable Dominion Virginia Power to move forward with its plans to erect a pair of 6-megawatt test turbines on the Outer Continental Shelf, about 24 nautical miles east of the Virginia Beach shoreline.

Integrated Hydrogen System for Tidal Energy Storage

> EMEC has procured an electrolyser to convert power generated at its tidal test site in Orkney to hydrogen fuel. The ground-breaking new project will pilot the storage of electricity from different forms of renewables, overcoming island grid constraints. ITM Power, the energy storage and clean fuel company, has won a competitive tender to supply an integrated hydrogen system for use at EMEC's tidal test site at the Fall of Warness, off Eday.

State Aid: Commission Approves Support to 20 Offshore Wind Farms in Germany

> The European Commission has found that German plans to support the building of 20 offshore wind farms are in line with EU state aid rules. Seventeen wind farms will be located in the North Sea and three in the Baltic Sea. The Commission concluded that the project would further EU energy and environmental objectives without unduly distorting competition in the Single Market.

Carnegie Eyes Wave energy Deals on Easter, Robinson Crusoe Islands

> Australian wave power developer, Carnegie Wave Energy, has signed a deal to develop wave energy projects in Chile and Peru, using its world-leading CETO technology to help supply renewable energy and water to some of the region's most remote island outposts.