TETHYS BLAST

July 21, 2017

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.

Organizations working in MRE/Wind and Environment

Tethys hosts a variety of tools aimed at increasing the international connectedness of environmental research around wind and marine renewable energy. One such tool is the organizations page. As documents are added to Tethys, author affiliations and sponsoring organizations are tagged, creating a list of over 1200 organizations ranging from academic to non-profit to government who are actively involved in environmental research. Each organization page includes basic information and a list of publications by the organization. https://tethys.pnnl.gov/organizations-involved

New Documents on Tethys

New documents are regularly added to Tethys, hand-selected for their relevance to the environmental effects of wind and marine renewable energy. Short introductions to new or popular documents are listed below, accessible by the accompanying Tethys links:

Biodiversity Characterisation and Hydrodynamic Consequences of Marine Fouling Communities on Marine Renewable Energy Infrastructure in the Orkney Islands Archipelago, Scotland, UK - Want et al. 2017

> A major concern to marine industries is biofouling on submerged structures, including energy converters and measurement instrumentation. In this study, the marine energy infrastructure and instrumentation were surveyed to characterise the biofouling. Fouling communities varied between deployment habitats; key species were identified allowing recommendations for scheduling device maintenance and preventing spread of invasive organisms. A method to measure the impact of biofouling on hydrodynamic response is

described and applied to data from a wave-monitoring buoy deployed at a test site in Orkney.

Possible Behavioural, Energetic and Demographic Effects of Displacement of Red-throated Divers - Dierschke et al. 2017

Red-throated divers (*Gavia stellata*) use marine areas in the North Sea, Irish Sea and Baltic Sea during the non-breeding season. They are known to be displaced by various marine industry activities, including construction and operation of offshore wind farms. However, the consequences of displacement for individuals and consequently on the population as a whole are unknown. On 2nd May 2017, seven scientists with particular expertise in red-throated diver ecology and/or the energetic and demographic consequences of displacement for marine birds were invited to a workshop.

SuperGen Phase Three Monograph - SuperGen 2016

The Engineering and Physical Sciences Research Council (EPSRC) Sustainable Power Generation and Supply (SuperGen) programme is the flagship research initiative established in 2003 to establish a platform for the development of new and improved devices, processes, facilities and know-how for sustainable power generation and supply and with the aim of increasing coherence and collaboration across the energy research landscape. This report covers the objectives and progress of SuperGen Phase 3, from 2011-2016.

Evaluating the Visual Impact of an Offshore Wind Farm - Maslov et al. 2017

The objective of this paper is to present a method that qualifies the degree of visibility of an offshore wind farm from an observer located along the coast. In many cases, the deployment of an offshore wind farm leads to public opposition. This entails the need for the development of appropriate methods that might present in the most intelligible way the impacts of an offshore wind farm. Amongst many factors to take into account, the visual impact of such farms is surely a factor to take into account. We introduce a visual operator that integrates several parameters that mainly depend on the distance of the wind farm to the coast.

Sensitivity of the Mussel Mytilus edulis to Substrate-Borne Vibration in Relation to Anthropogenically Generated Noise - Roberts et al. 2015

Many anthropogenic activities in the oceans involve direct contact with the seabed (for example pile driving), creating radiating particle motion waves. However, the consequences of these waveforms to marine organisms are largely unknown and there is little information on the ability of invertebrates to detect vibration, or indeed the acoustic component of the signal. We quantified sensitivity of the marine bivalve *Mytilus edulis* to substrate-borne vibration by exposure to vibration under controlled conditions. Sinusoidal excitation by tonal signals at frequencies within the range 5 to 410 Hz was applied during the tests, using the 'staircase' method of threshold determination.

ORJIP Ocean Energy is a UK-wide collaborative programme of environmental research with the aim of reducing consenting risks for wave, tidal stream and tidal range projects. Partnering with Annex IV, ORJIP provides content input to Tethys Blasts. ORJIP wishes to make you aware of the following opportunities:

- Ente Vasco de la Energia (Basque energy funding agency) has launched a €500m fund for investment in the demonstration and validation of emerging renewable technologies. The deadline for applications is 31 October 2017.
- FORESEA (Funding Ocean Renewable Energy through Strategic European Action) programme recently opened their third call for support package applications, giving free access to a network of test sites. The call runs until 29 September 2017.
- The deadline for the Innovate UK Open Programme Round 3 competition is 9th August 2017.

News and Current Events

Marine Renewable Energy

Nova Innovation explores tidal energy potential off north Wales coast

Tidal energy company Nova Innovation has announced it is working with renewable energy organization YnNi Llŷn to explore the development of a tidal energy project in Wales. The project is located at Bardsey Sound, off the Llyn Peninsula in north Wales. Nova Innovation said that the Crown Estate had awarded it an Agreement for Lease (AfL), which would allow them to undertake site surveys and studies and fully explore the potential of the project.

Unlocking the potential of Australia's tidal energy

Australia's tidal energy resource will be mapped in unprecedented detail in a new study funded by the Commonwealth Government through the Australian Renewable Energy Agency (ARENA). ARENA has provided $2.49 million in funding support for the three year project which will explore the future potential of tidal energy in Australia to attract future investment.

MaRINET2 awards €1.3m to develop the next-generation of offshore renewables

The MaRINET2 project has awarded €1.3m to 34 technology development teams through a competitive call for proposals. This support will accelerate the next generation of offshore renewable energy technologies towards the marketplace by providing technology testing at MaRINET2's network of world-leading testing facilities.

Isle of Wight tidal energy scheme 'put on hold'

Perpetuus Tidal Energy Centre (PTEC) had previously said it would begin "full operations" south of the island from 2020. It has not bid for a government contract to supply energy by the year 2023, the authority revealed. Isle of Wight Council said all work was "in abeyance" because PTEC was unable to compete on price with offshore wind.

TLP submits final Swansea lagoon fish impact assessment

Tidal Lagoon Power (TLP) has filed the final assessment of the impact on fish for Swansea Bay tidal lagoon project to Natural Resources Wales as part of marine license procurement process. Following discussions with Natural Resources Wales (NRW) and its external fisheries advisers, the impacts on fish have now been modeled using an Alternative Draw Zone (ADZ) methodology, TLP informed.

Wind Energy

New York State launches public hearings on site of offshore wind farm

The New York State Energy Research and Development Authority launched a series of public meetings on July 11 as part of an outreach effort as the state moves forward with a plan to build wind farms off the South Shore. The meeting engaged the public, as well as stakeholder groups such as fishermen and the maritime industry in order to generate feedback as early as possible in the planning process for wind farms that would be located 14 miles off the coast of Long Beach, according to state officials.

World’s first commercial-scale floating offshore wind farm on its way to Scotland

The first of five turbines for the Hywind Scotland commercial-scale floating offshore wind farm has now sailed away from Stord in Norway to its final destination, Buchan Deep, 25 km east of Peterhead in Scotland. Masdar, Abu Dhabi’s renewable energy company, announced that it had acquired a 25% stake in the Hywind Scotland project during Abu Dhabi Sustainability Week in January.

Scottish court approves construction of 450MW Neart na Gaoithe offshore wind farm

The Inner House of the Court of Session in Scotland has approved Mainstream Renewable Power’s 450MW Neart na Gaoithe offshore wind farm, ending a long-running judicial review brought by the Royal Society for Protection of Birds (RSPB). Mainstream Renewable Power received the permission to construct the offshore wind farm in 2014. But it has been delayed due to the lawsuit filed against the company by the RSPB over a planning decision for the wind farm by Scottish Ministers.

French power giant EDF buys 11 wind farm projects in Britain

French power giant EDF said Thursday that it has acquired 11 wind farm projects in Britain as part of its drive to double renewable energy capacity by 2030. "EDF Energy Renewables, the UK subsidiary of EDF Energies Nouvelles and EDF Energy, has bought 11 wind farm projects" in Scotland with a potential capacity of 600 megawatt, EDF said in a statement. Financial details were not disclosed.

Saudis open 400MW wind call

Saudi Arabia has issued a request for qualification (RFQ) to build a 400MW wind farm at Dumat Al Jandal in the Al Jouf region of the country. The request was issued by the renewable energy project development office of Saudi Arabia’s Ministry of Energy, Industry and Mineral Resources. Local, regional and international developers, as well as consortiums are invited to bid for the project.