TETHYS BLAST

April 28, 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.

Annex IV Webinar Recording Available

Annex IV held a webinar on April 25 about the effects of artificial reefs and marine renewable energy devices on benthic communities, specifically focusing on marine fish and crustaceans. A recording is now available on Tethys.

Resources on Tethys: Webinar Archive

Did you know, in addition to the above webinar, that Annex IV and WREN have been hosting webinars since 2014? These webinars have covered a variety of topics related to the environmental effects of wind and marine renewable energy. Recordings of all past webinars are available on Tethys.

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:

Golden Eagle Fatalities and the Continental-Scale Consequences of Local Wind-Energy Generation - Katzner et al. 2017

> Renewable energy production is expanding rapidly despite mostly unknown environmental effects on wildlife and habitats. We used genetic and stable isotope data collected from Golden Eagles (*Aquila chrysaetos*) killed at the Altamont Pass Wind Resource Area (APWRA) in California in demographic models to test hypotheses about the geographic extent and demographic consequences of fatalities caused by renewable energy facilities.

Introducing Ocean Energy Industries to a Busy Marine Environment - Hammar et al. 2017

> The immense energy potential of the oceans is being increasingly recognized the world over, at the same time the integrity of marine ecosystems is challenged by pressure from multiple human activities. For good reasons environmental licensing procedures are precautionary and new industries must declare their detrimental impacts and provide mitigation measures. In this review we compare ocean energy industries with a wide range of conventional, better understood, human activities and outline environmental risks and research priorities.

Impacts of Wind Energy Development on Bats: A Global Perspective - Arnett et al. 2016

> Wind energy continues to be one of the fastest growing renewable energy sources under development, and while representing a clean energy source, it is not environmentally neutral. Large numbers of bats are being killed at utility-scale wind energy facilities worldwide, raising concern about cumulative impacts of wind energy development on bat populations. We discuss our current state of knowledge on patterns of bat fatalities at wind facilities, estimates of fatalities, mitigation efforts, and policy and conservation implications.

Learning from Early Commercial Tidal Energy Projects in the Puget Sound, Washington and the Pentland Firth, Scotland - McMillan 2016

> Using a textual analysis to interview data approach, this study explores two of the first multiple-device tidal energy projects to identify the key learning outcomes gained by stakeholders. The cases chosen are the Snohomish County Public Utility District's Admiralty Inlet pilot project in Puget Sound, Washington, United States, and MeyGen Ltd.'s Phase 1A project in Pentland Firth, Scotland, United Kingdom. With a focus on stakeholder learning, the research draws upon scholarly literature on innovation systems and technical innovations systems.

Examining the Social Acceptance of Wind Energy: Practical Guidelines for Onshore Wind Project Development in France - Enevoldsen and Sovacool 2016

> This study investigates methods for increasing the local social acceptance of onshore wind projects in France. It is based on input from semi-structured research interviews and insight from a French wind energy company. That company had noted that a lack of local social acceptance of wind projects increased the risk of failures, cost escalation, and project delays. In this study, we first summarize recent scholarship concerning local social opposition and acceptance of wind energy through a selected literature review and case studies of wind projects throughout Europe.

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:

- EU-funded Marine Renewables Infrastructure Network (MaRINET2) project has a funding call open until May 20. The call is open to offshore energy technology developers, including wind, wave and tidal energy at system and component level.
- Wave Energy Scotland (WES) has issued its fourth funding call for complete control systems suitable for use with a variety of wave energy converters. Applications must be submitted by June 12 mid-day.

News and Current Events

Marine Renewable Energy

Minesto receives consent for Holyhead Deep tidal energy installation

Tidal energy developer Minesto has received a marine license from Natural Resources Wales, paving the way for installation of a 500 kW "Deep Green" generating unit in Holyhead Deep. The consent is mandatory for all offshore construction and equipment placement in United Kingdom waters and follows findings of an environmental impact assessment that showed effects on fisheries, marine mammals, archaeology, cultural heritage and navigation would not be significant.

Wave energy firms net $3.66 million funding

Four wave energy technology developers are to be awarded a total of US$3.66 million (£2.84 million) by Wave Energy Scotland (WES) after successfully competing to join stage two of an innovative technology development program. The funding will support further design, modelling and testing of technologies being developed through WES's Novel Wave Energy Converter (NWEC) program, one of a series of programs designed to help commercialize the wave energy sector in Scotland.

Five co-located events will showcase MHK innovation during Waterpower Week in Washington

The U.S. Department of Energy Water Power Technologies Office and national laboratories involved with marine energy research will host five co-located events from May 1–3 during Waterpower Week in Washington. The co-located events will showcase the important work driving marine and hydrokinetic (MHK) energy innovation forward. Water power professionals and the general public can attend these particular sessions to network and discuss the future sustainability of the hydropower and marine energy industries.

Experts hail Scotland having most powerful tidal energy device in world

Energy industry experts celebrated news that Scotland has the most powerful tidal energy device in the world after the 500 tonne floating tidal turbine in Orkney exported a full 2 Megawatts (MW) of power into the local grid at the weekend. They state that device developed in Scotland in a European energy research facility funded by the EU hit peak power and as a result has secured Scotland's position as a global leader in renewable energy.

Wind Energy

France's biggest offshore wind farm gets the go-ahead

French authorities have authorised plans for France's largest offshore wind farm. The company behind the project, Ailes Marines, will build off the coast of Brittany and has set the construction date for 2020. Producing 493 megawatts when at full capacity, it will provide enough energy for 850,000 people, more than the populations of the three largest nearby communes.

Maryland Could Host the Nation's Largest Offshore Wind Farm

The Maryland Public Service Commission is considering two proposals for offshore turbines off the coast of Ocean City, giving Maryland the potential to host the nation's largest offshore wind farm. The companies — US Wind and Deepwater Wind — plan to build turbines off the coast, using wind to generate clean energy. The turbines are connected to transmission lines that travel underground, carrying the energy to substations to be stored, distributed and used.

Rampion offshore wind farm installs substation

The offshore substation has been installed at the 400-MW Rampion wind farm in UK waters, German renewables-focused utility E.on SE said today. E.on is building the wind park off the Sussex coast in partnership with the UK Green Investment Bank plc and Canadian energy company Enbridge.

China continues to lead global wind energy market, says new report

Over 54 gigawatts (GW) of wind power were installed in 2016 and cumulative capacity grew by more than 12 percent to hit 486.8 GW, according to a new report from global trade association, the Global Wind Energy Council (GWEC). Released on Tuesday, the GWEC's Global Wind Report: Annual Market Update forecasts nearly 60 GW of wind installations this year, with cumulative installed capacity seen reaching more than 800 GW by the end of 2021.