TETHYS BLAST

August 18, 2017

The bi-weekly Tethys Blast will update you with new information on Tethys, news article of international interest, and opportunities in wind and marine renewable energy. We hope you find this a valuable tool to keep you connected to colleagues, new research, opportunities, and industry milestones.

Conferences and Workshops

European Wave and Tidal Energy Conference: August 28 - September 1 2017, Cork Ireland, hosted by University College Cork

Two notable events:
OES-Annex IV and ORJIP will be hosting a workshop at EWTEC on August 31st on "Exploring the State of Understanding and Practice used to Assess Social and Economic Risks and Benefits of Marine Renewable Energy Development." The aim of this workshop is to bring together regulators, stakeholders, industry, and researchers to examine frameworks and practical aspect for collecting data that define social and economic risks and benefits of marine renewable energy. For those who register, the agenda and preparatory material will be sent ahead the workshop. Space is limited to please register right away, by sending an email to orjip@aquatera.co.uk.

The US Department of Energy is hosting a discussion on early adopter markets for marine renewables. We invite EWTEC conference attendees to participate in a 90 minute discussion on these markets, on the road to wide-spread development of utility scale MRE. Wave and tidal devices have the potential to provide power to a number of end markets that are characterized by high cost, high value energy needs. In particular, this discussion should interest device and project developers, as well as supply chain participants. Please register here.

Conference on Wind and Wildlife: September 5-8 2017, Estoril Portugal

The 11 WREN nations (Working Together to Resolve Environmental Effects of Wind Energy) are hosting a workshop on Strategies and Concepts for Managing Wind and Wildlife Challenges: Risk- Based Management, Cumulative Effects Analysis, and Green versus Green on September September 5th, 2017, 1:30-6:30pm. This workshop will engage participants in a discussion and information exchange about three white papers currently in development. Please register here.

Ocean Renewable Energy Conference XII: September 12-14 2017, Portland Oregon USA

OREC XII is the premier West Coast conference covering all things MHK related. Additionally, the Pacific Ocean Energy Trust (POET) is hosting the 2nd Annual Pacific Region Marine Renewables Environmental Regulatory Workshop on September 12th in conjunction with OREC. The workshop will revisit the status of individual interactions of stressors from marine renewable energy devices with marine animals, habitats, and ecosystem processes. They will examine two specific interactions, delving into the potential of applying data from other locations or from other industries to new developments, and also explore the opportunity to narrow down the issues and standardize environmental monitoring programs for marine renewable energy devices. Register to attend the conference and workshop here.

Also, the US Department of Energy will host a panel on early adopter markets for MHK (wave and tidal) devices on Thursday September 14th. This panel will explore some of these potential markets with direct examples and applicability to the Pacific Region. MHK devices have the potential to provide power to a number of end markets that are characterized by high cost, high value energy needs. These early adopter markets can help to further prove the technologies, lower LCOE, and act as a stepping stone to developing MHK power for the grid-scale market. Please register here.

Upcoming WREN Webinar

WREN is hosting a public webinar on September 20 about *Upscaling Wind and Wildlife Individual Interactions to Population-Level Impacts*. This webinar will feature a manuscript produced by the WREN collaborative on individual to population impacts and WEST's development of a quantitative assessment of the direct effects of wind energy on small passerines and diurnal raptors in North America. Login instructions are available on Tethys: https://tethys.pnnl.gov/wren-12.

Upcoming Annex IV Webinar

Annex IV is hosting a public webinar on September 21 about *Information Collection and Consenting Processes for Wave and Tidal Deployments - Lessons from the Field*. This webinar will feature research from Shell MacDougall of Acadia University and Jan Sundberg of Uppsala Univeristy. Login instructions will soon be available on Tethys: https://tethys.pnnl.gov/annex-iv-14.

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:

Understanding the Potential Risk to Marine Mammals from Collision with Tidal Turbines - Copping et al. 2017

> Many marine mammal populations worldwide are in decline due to stresses from climate change and interactions with anthropogenic activities such as fishing, coastal construction petroleum extraction, and commercial shipping. The advent of the marine renewable energy industry has raised questions, particularly for tidal turbines. However, it is technically very difficult to observe close interactions of marine mammals and underwater turbines, and the likelihood of viewing a rare event such as a collision, is very small.

Reintroduction of White-tailed Eagles *Haliaeetus albicilla* to Ireland - Mee et al. 2016

> White-tailed Eagles *Haliaeetus albicilla* were extirpated as a breeding species in Ireland in the early 20th century following decades of population decline due to human persecution. Preparatory studies including population modelling, site selection and identification of a donor population, resulted in the initiation of a reintroduction programme for the species in the Republic of Ireland. Between 2007 and 2011 one hundred young White-tailed Eagles (51 males and 49 females) were collected from nests in Norway under licence and transported to Ireland for release in Killarney National Park, Co. Kerry.

Bridging the Gap Between Energy and the Environment - Holland et al. 2016

> Meeting the world's energy demand is a major challenge for society over the coming century. To identify the most sustainable energy pathways to meet this demand, analysis of energy systems on which policy is based must move beyond the current primary focus on carbon to include a broad range of ecosystem services on which human well-being depends. Incorporation of a broad set of ecosystem services into the design of energy policy will differentiates between energy technology options to identify policy options that reconcile national and international obligations to address climate change and the loss of biodiversity and ecosystem services.

Seabird Ecology in High-Energy Environments: Approaches to Assessing Impacts of Marine Renewables - Robbins 2017

> It has been widely acknowledged that a global change in energy production, from fossil fuels to renewable sources, is required in order to reduce carbon dioxide outputs and help mitigate anthropogenic climate change. The UK is recognised as having one of the largest practical marine energy resources in Europe, including 'wet renewables' energy sources; tidal-stream and wave energy. Scotland, as well as having some of the best marine energy resources, also holds internationally important numbers of breeding seabirds. Both wave energy and tidal stream devices have the potential to place a new anthropogenic pressure on already declining seabird populations.

Wildlife Impacts of and Public Attitudes Towards Small Wind Turbines - Tatchley 2015

Global wind power generation has grown rapidly in response to targets to reduce greenhouse gas emissions as part of efforts to mitigate climate change, and to increase energy security. While much of the focus in wind energy technology to date has been on wind farms, a relatively recent development is the expansion of the micro-wind sector (turbines generating < 100 kW), and there are now over 870,000 small wind turbines (SWTs) installed globally. However, official planning guidance for SWTs in the UK and elsewhere is lacking. This may be a barrier to SWT installations if there is confusion over the requirements to gain planning permission.

Ocean Energy
ORJIP
working to accelerate offshore consenting

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:

- The European Commission has launched the Participant Portal for finding collaboration partners for funding proposals.
- FORESEA (Funding Ocean Renewable Energy through Strategic European Action) programme has opened its third call for support package applications, giving free access to a network of test sites. The call runs until 29 September 2017.

News and Current Events

Marine Renewable Energy

NYSERDA Announces Completion of First Year of Aerial Surveys of Wildlife in Offshore Wind Area - NYSERDA

The New York State Energy Research and Development Authority (NYSERDA) has completed the first of three years of data collection via aerial surveys of birds and marine mammals as the state pursues its goal of achieving 50 percent of its electricity from renewable resources by 2030.

EU awards €9M for wave and tidal research in UK and Ireland - Tidal Energy Today

Queen's University Belfast has secured over €9.3 million from the EU's Interreg VA Programme to create a 'virtual center of competence' that will support cross-border research into wave and tidal energy in UK and Ireland. The research will focus on the use of tidal power at Strangford Lough and the North Antrim Coast in Northern Ireland, ocean energy sites in Western Scotland, as well as the potential for wave and tidal power generation in Donegal in Ireland.

SINN Power gets grant to continue wave energy device research - Hydro World

Wave energy developer SINN Power has received a US$1.2 million grant from the German Federal Ministry for Economic Affairs and Energy to expand its research activities on the Greek island of Crete. The German company said it will use the funding to install give wave energy converter modules on a breakwater in the Port of Heraklion. The new units will be placed near another unit that was installed in December 2015, with the goal of testing the interconnection between multiple modules.

Australia continues tidal energy research with $2.49 million in funding - Hydro World

The Australian Renewable Energy Agency (ARENA) announced it will provide $2.49 million in funding to attract future investment via a 3-year project that will explore the tidal energy potential in Australia.

Wind Energy

GE to help develop the biggest wind farm in Australia, will supply 123 wind turbines - CNBC

GE has announced that it has entered into an agreement with the Powering Australian Renewables Fund (PARF) to both supply and install 123 wind turbines for what is set to be Australia's largest wind farm. PARF is a partnership between AGL Energy Limited and the Queensland Investment Corporation. The Coopers Gap Wind Farm is due to be completed in 2019 and will be located 250 kilometers north west of Brisbane, Queensland.

World's first commercial-scale floating offshore wind farm nears completion - Gulf News

The fifth and final wind turbine for the Hywind Scotland commercial-scale floating offshore wind farm, a joint project between Masdar and Statoil, has arrived at its final destination, Buchan Deep, 25km east of Peterhead in Scotland. Earlier this summer, all five turbines were successfully assembled outside Stord, Norway and they have now completed their journey to Scottish waters.

Germany awards licences to increase onshore wind capacity by 1 GW - Reuters

Germany will increase its onshore wind energy capacity by more than 1 gigawatt, equal to that of a nuclear plant, under new licences awarded on Tuesday, its network regulator said. The regulator introduced an auction system this year to award licences, aiming to intensify competition among project developers in order to lower costs and wean renewable energy away from subsidies.

Forewind completes Dogger split - Renews

SSE and Statoil have teamed up to co-develop three 1.2GW projects at the 4.8GW Dogger Bank offshore wind zone off the UK's east coast, with Innogy taking a sole role on the remaining site. Project consortium Forewind said today that the 1.2GW trio of Creyke Beck A, Creyke Beck B and Teesside A will be developed by SSE and Statoil. Innogy will develop the Teesside B site.