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The bi-weekly Tethys Blast will update you with new information on Tethys, news articles 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 on bird migration at sea and offshore wind power

Two conferences are planned from 4-5 February 2019 in the state representative office of Schleswig-Holstein in Berlin. The first is "Tracking bird migration over the seas: Fundamental patterns and their applications for offshore wind farms," the last conference for the BIRDMOVE project. The second is "Bird migration and offshore wind farm: Do multi-sensor systems help to answer important knowledge gaps?" as the last conference for the MultiBird project. [You may view the schedules and register here.](#)

International WaTERS (Wave and Tidal Energy Research Sites)

In September, EMEC hosted the 5th [International WaTERS](#) workshop with National Taiwan Ocean University in Keelung, Taiwan. 21 delegates spanning nine countries attended the workshop to share progress, learning and challenges with one another. There are a number of transnational research programmes now underway demonstrating collaboration between international test centres including FORESEA, MaRINET2, Marinerg-I, MET-CERTIFIED and the newly launched Blue-GIFT project. Plans are being developed for the next meeting due to take place later in 2019.

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 excerpts from new or popular documents are listed below, accessible by the accompanying Tethys links:

Empirical measures of harbor seal behavior and avoidance of an operational tidal turbine
– Joy et al. 2018

There is global interest in marine renewable energy from underwater tidal turbines. Due to overlap in animal habitat with locations for tidal turbines, the potential for collisions has led to concern around strike risk. Using data from tagged harbor seals collected before construction and after operation of the SeaGen tidal turbine in Northern Ireland, this study quantifies risks of an operational turbine to harbor seals by taking into account turbine characteristics, tidal state, and seal behavior.

Bat Flight Analysis around Wind Turbines - A Feasibility Study – Lagerveld et al. 2017

In recent years, research into the occurrence of bats at the Dutch North Sea has shown that there is regular seasonal migration over sea. However, so far, little is known about their migration ecology, the fatality risks at offshore wind turbines, and the number of individuals migrating over sea. This study investigates how bat behaviour can be studied near offshore wind turbines.

Effect of pile-driving sounds on harbor seal (*Phoca vitulina*) hearing – Kastelein et al. 2018

Seals exposed to intense sounds may suffer hearing loss. After exposure to playbacks of broadband pile-driving sounds, the temporary hearing threshold shift (TTS) of two harbor seals was quantified at 4 and 8 kHz (frequencies of the highest TTS) with a psychoacoustic technique. The pile-driving sounds had: a 127 ms pulse duration, 2760 strikes per h, a 1.3 s inter-pulse interval, a similar to 9.5% duty cycle, and an average received single-strike unweighted sound exposure level (SEL_{ss}) of 151dB re 1 μ Pa(2)s.

Pelagic effects of offshore wind farm foundations in the stratified North Sea – Floeter et al. 2017

A recent increase in the construction of Offshore Wind Farms (OWFs) has initiated numerous environmental impact assessments and monitoring programs. These focus on sea mammals, seabirds, benthos or demersal fish, but generally ignore any potential effects OWFs may have on the pelagic ecosystem. The only work on the latter has been through modelling analyses, which predict localised impacts like enhanced vertical mixing leading to a decrease in seasonal stratification, as well as shelf-wide changes of tidal amplitudes.

Energy and socio-economic benefits from the development of wave energy in Greece – Lavidas 2019

The study quantifies socio-economic benefits by the integration of wave energy in Greece, through resource examination, availability and deployment considerations. Greece has a large number of inhabited islands that mostly utilise conventional fuels for power generation, inclusion of wave energy will contribute both in terms of energy independence but also in job creation.

News and Current Events

Marine Renewable Energy

[Schottel Merges Tidal Units to Sustainable Marine Energy](#) – Marine Technology News

Schottel, the manufacturer of propulsion and steering systems for ships and offshore applications, has made a strategic decision to merge its tidal energy businesses into Sustainable Marine Energy (SME), including UK subsidiary TidalStream Ltd and Canadian subsidiary Black Rock Tidal Power Inc (BRTP).

[Seabased Closes Swedish Production Subsidiary, Seabased Industries AB](#) – Seabased

“It is with a heavy heart that we must close Seabased Industries AB, which has been a valuable part of the Seabased group for the last decade. As the world’s first and largest dedicated manufacturing facility for wave energy converters, the factory at Lysekil and the committed team of employees in Seabased Industries AB has made ocean energy history on multiple occasions,” explains Gunn Ovesen, Chair of the Board of Directors.

[12.8M€ awarded to demonstrate ocean energy farms](#) – EMEC

A new Interreg NWE project, Ocean DEMO, has been officially launched. Ocean DEMO will provide funding to developers of marine renewable technologies to test their products or services in real sea environments, specifically targeting multi-machine ocean energy installations. This will allow developers to move closer to market by demonstrating their technologies at full commercial scale.

[Leask Marine start the first tidal platform build in Orkney](#) – Leask Marine

Leask Marine’s fabrication workshop took delivery of two of the largest tubular sections that they have ever received for the construction of the very first tidal platform ever to be built in Orkney. Leask Marine were awarded the contract for the manufacturing and supply contract of a Surface Floating Platform by Instream Energy Systems / Corp of Canada.

[Hawaii Natural Energy Institute Gets \\$1.3M for Wave Energy](#) – Marine Energy Biz

The University of Hawai‘i at Mānoa School of Ocean and Earth Science and Technology (SOEST) was awarded \$1.3 million from the U.S. Department of Energy (DOE) to support a project that focuses on advancing marine energy devices. During the three-year innovative project, the team of researchers and engineers led by the Hawai‘i Natural Energy Institute (HNEI) will develop a wave-energy converter concept culminating in a set of tests in a sophisticated mainland wave tank.

Wind Energy

[ESB signs partnership to develop offshore wind farms in Irish Sea](#) – Irish Times

The ESB and Belgian offshore wind developer Parkwind have reached an agreement “to kick-start the offshore wind-generation industry in the Republic” by developing two large offshore wind farms in the Irish Sea.

[Danish firm Orsted signs agreement to work on offshore wind projects in Japan](#) - CNBC

Tokyo Electric Power Company Holdings (TEPCO) has signed a memorandum of understanding with Danish energy business Orsted to work together on offshore wind projects. In an announcement Friday, TEPCO said that it had been “exploring offshore wind business opportunities” in both Japan and overseas. Orsted is a world leader in wind energy and built the world’s first offshore wind facility in 1991.

[Siemens Gamesa launches SG 10.0-193 DD offshore wind turbine](#) – Composites World

Siemens Gamesa Renewable Energy has launched the SG 10.0-193 DD, the company’s first 10+ MW offshore wind turbine. Based on its experience since establishing the world’s first offshore wind park in 1991, the newest wind turbine in the SGRE offshore portfolio builds on five generations of proven technology for maximum energy yield at all wind speeds.

[Global Wind Turbine Manufacturers Score Big Orders in India](#) – Clean Technica

The Indian spree of wind energy auctions seen over the last two years has resulted in an upsurge in orders for some of the leading wind turbine manufacturers. This recent jump in orders comes as developers look to meet the deadlines to commission their respective projects.

[Budweiser achieves 100% wind energy, celebrates with a Super Bowl ad](#) – Treehugger

Not too long ago, Anheuser-Busch InBev declared that they would be running on 100% renewable energy by 2025 at the latest. Well, it seems that one of their flagship products has already reached that milestone—at least if their just released Super Bowl ad is anything to go by.



[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 and wishes to make you aware of the following opportunities:

- Ocean Energy ERA-NET Cofund has launched a [second joint call for ocean energy research and development projects](#) with a focus on pushing technologies from Technology Readiness Level (TRL) 3-6 through to TRL 4-8. Deadline to apply is 1 March.
- The Marine Energy Alliance (MEA) project has launched its [first call for applications](#) from marine energy technology companies, which will receive access to leading expertise in marine energy development via project partners. Deadline to apply is 4 February.
- The ProtoAtlantic project, which aims to develop and validate a model for the prototyping and exploitation of innovative ideas in the maritime sector, has launched a [call for entrepreneurs to apply for a fast-tracked acceleration programme](#). Deadline to apply is 4 February.
- Industry bodies Subsea UK and National Subsea Research Initiative (NSRI) in partnership with Scottish Enterprise have launched a [second call for R&D partnerships between Scotland and Japan](#) to drive forward innovative subsea technologies. Initial expressions of interest are open until 15 February 2019.