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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.

New Tethys Story

Block Island Wind Farm, a 30MW farm with 5 turbines situated off the coast of Rhode Island, is the first offshore wind farm in the United States. This construction and initial operation brings the opportunity to understand the environmental effects of offshore wind development through environmental monitoring. This particular study focuses on the environmental impacts of acoustics on marine animals during construction and operation, as a component of a host of studies led by the Bureau of Ocean Energy Management (BOEM) to better understand offshore wind development. [Read more by James Miller.](#)

EIMR 2018

The conference on Environmental Interactions of Marine Renewables (EIMR) will be held in Orkney, Scotland on April 24th – 27th 2018. The conference focuses on environmental effects of marine renewable energy. [Abstracts are due December 20th 2017.](#) The full announcement for [EIMR can be found here.](#)

METS/IMREC 2018

The Marine Energy Technology Symposium (METS) and the International Marine Renewable Energy Conference (IMREC) will be held as part of Waterpower Week April 30 - May 2, 2018 in Washington DC, USA. METS oral abstracts are due January 10, 2018 and poster abstracts are due February 15, 2018. [More details are available here.](#)

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:

[A Tool for Simulating Collision Probabilities of Animals with Marine Renewable Energy Devices](#) - Schmitt et al. 2017

The mathematical problem of establishing a collision probability distribution is often not trivial. The shape and motion of the animal as well as of the device must be evaluated in a four-dimensional space (3D motion over time). Earlier work on wind and tidal turbines was limited to a simplified two-dimensional representation, which cannot be applied to many new structures. We present a numerical algorithm to obtain such probability distributions using transient, three-dimensional numerical simulations.

[Evaluating Benefits of Offshore Wind Energy Projects in NEPA](#) - AECOM 2017

AECOM has been contracted by the US Bureau of Ocean Energy Management (BOEM) to prepare this white paper to identify resources and describe technical approaches that can be used by authors of EAs and EISs to capture the beneficial effects that can accrue from the development of renewable energy sources on the OCS. This white paper is also prepared for interested members of the general public who seek a better understanding of how benefits can be captured, described, and evaluated during the NEPA process.

[Multi-Scale Ocean Response to a Large Tidal Stream Turbine Array](#) - De Dominicis et al. 2017

The tidal stream energy sector is now at the stage of deploying the world's first pre-commercial arrays of multiple turbines. It is time to study the environmental effects of much larger full-size arrays, to scale and site them appropriately. A theoretical array of tidal stream turbines was designed for the Pentland Firth (UK), a strait between Scotland and the Orkney Islands, which has very fast tidal currents. The practical power resource of a large array spanning the Pentland Firth was estimated to be 1.64 GW on average.

[Observing Cable Laying and Particle Settlement During the Construction of the Block Island Wind Farm](#) - James et al. 2017

Key observations, data, findings, and results from two different types of environmental monitoring surveys conducted in and around the Block Island Wind Farm (BIWF) Project Area during its second construction phase are presented in this report. The monitoring was conducted to gather real-time data during the installation of a submarine cable from the mainland at Scarborough State Beach to Block Island's Fred Benson Town Beach. The cable was installed using a customized jet plowing mechanism.

[Modeling whale entanglement injuries: An experimental study of tissue compliance, line tension, and draw-length](#) - Winn et al. 2008

Two test systems were developed to evaluate the influence of draw-length and tissue compliance on entanglement-induced epidermal abrasion in humpback (*Megaptera novaeangliae*) and right whale (*Eubalaena glacialis*) tissue samples. Under straight pull abrasion tests, an adult right whale fluke required 3.7 times the load and 15 times the draw-length of a right whale calf flipper to induce epidermal failure whereas a humpback fluke was intermediate between these extremes.



[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 EU's Executive Agency for Small and Medium-sized Enterprises (SMEs) and the European Maritime Fund launched a [call for proposals](#) around environmental monitoring of wave and tidal devices, due by 19 January 2018.
- Funding Ocean Renewable Energy through Strategic European Action (FORSEA) launched their [4th call for support packages](#), due by 29 June 2018.
- Innovate UK has up to [£19 million to invest](#) in the best ideas for new inventions in a wide range of technology and business areas. The competition deadline is 28 February 2018.

News and Current Events

Wind Energy

[Subsidy-Free Wind Power Possible in \\$2.7 Billion Dutch Auction](#) - Bloomberg

Subsidy-free renewables could appear in a second country after an auction this week in the Netherlands, which is seeking about \$2.7 billion to develop a giant offshore wind farm. The government on Friday will receive bids to install 700 megawatts of turbines on the seabed off its southwest coast near The Hague, enough to supply about 1 million homes. Once the most costly of the mainstream clean-energy technologies, offshore wind costs have plunged sharply in the past two years as manufacturers brought out bigger turbines.

[Khobab and Loeriesfontein wind farms to start supplying power to 240,000 South African homes](#) - African Business

Two wind farms located in the Northern Cape of South Africa have commenced operations to supply power to 240,000 homes, with a combined capacity of 280MW. The Loeriesfontien Wind Farm and the Kobab Wind Farm have been completed on schedule and on budget. The farms are planned to run for 20 years, and together make the highest volume of renewable energy utility power plants in the country.

[US Secretary of Energy Rick Perry Announces \\$18.5 Million for Offshore Wind Research - Energy.gov](#)

U.S. Secretary of Energy Rick Perry announced \$18.5 million in new Department of Energy (DOE) funding for an offshore wind research and development (R&D) consortium that will conduct U.S.-specific research aimed at reducing the cost of offshore wind in the U.S. This consortium will be a cooperative private-public innovation hub addressing topics, including wind plant technology advancement, resource and physical site characterization, installation, operations and maintenance, and supply chain technology solutions.

[Massive crane arrives for Aberdeen offshore wind farm work - BBC News](#)

A massive floating crane has arrived in Peterhead ahead of work on the construction of wind turbines off Aberdeen. The 11 turbines will make up the European Offshore Wind Deployment Centre (EOWDC) off Aberdeen. Energy firm Vattenfall is behind the project. The 25,000-tonne Asian Hercules III arrived ahead of work involving suction bucket foundations involved in the construction.

[Vestas seals 250MW win in India - ReNews](#)

Vestas has won a contract for turbines totalling 250MW from Ostro Kutch Power for a wind farm in Gujarat, India. The order comprises delivery, installation and commissioning of 125 V110-2.0MW turbines, as well as carrying out the project's civil and electrical works. Commissioning of the project, which is located in the Kutch district, is expected by the third quarter of 2018.

[Wind farm seeks incidental take permit - West Hawaii Today](#)

The operator of Lalamilo Wind Farm has applied for a federal permit that would allow for the incidental taking of two endangered Hawaiian species during the project's operation. Lalamilo Wind Co. is applying for an incidental take permit (ITP) that would authorize take of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) and the endangered Hawaiian petrel (*Pterodroma sandwichensis*) as a result of the operation of the Wind Farm Repowering Project in Waimea.

Marine Renewable Energy

[Bombora expands to Europe with plans to deploy off Wales - Tidal Energy Today](#)

Australian wave energy developer Bombora Wave Power has unveiled plans to expand its operations in Europe with new headquarters to be based in Wales, United Kingdom. Bombora is basing its operations in the south of Wales at Pembroke Dock to take advantage of the region's supply chain capabilities, marine operations expertise and experience as the company looks to ramp up operations to commercialize its mWave technology.

[Marine website plays cupid](#) - ReNews

Wave Energy Scotland (WES) and National Subsea Research Initiative (NSRI) have launched a website to help subsea supply companies to work together in bidding for marine energy contracts. The online resource is a new section of NSRI's Matchmaker database designed to help companies find other organisations with the expertise they are looking for to bid on projects.

[SIMEC to acquire significant stake in Atlantis via complex transaction](#) - Renewables Now

One of the investors in the 320-MW Swansea Bay Tidal Lagoon in Wales has agreed a share purchase transaction with Atlantis Resources (LON:ARL) that would give the latter access to a pipeline of diverse renewable energy assets. International energy, infrastructure and natural resources business SIMEC Group Ltd, part of GFG Alliance, has signed a conditional deal with Atlantis under which SIMEC UK Energy Holdings Ltd will acquire a 49.99% stake in the Singapore-based tidal energy company.

[Offshore white noise 'shields' whales](#) - ReNews

A study by the Offshore Renewables Joint Industry Programme (ORJIP) has found that acoustic deterrent devices (ADDs) are effective tools in protecting minke whales from the impact of increased noise during offshore wind farm construction. The study, which was backed by Innogy, Orsted and Statoil, was managed by the Carbon Trust and found that minke whales clearly responded to the ADDs by increasing their swim speed away from the devices.

[Sustainable Marine Energy's Inshore Platform PLAT-I Powers Up](#) - Marine Technology News

On November 25th Edinburgh-based tidal energy technology developer Sustainable Marine Energy (SME) completed the installation of its game changing PLAT-I tidal energy system at Connel, near Oban in western Scotland. The operation, including tow-out, was completed in under 5 hours using Green Marine's multicat vessel Green Isle. PLAT-I is a multiple turbine floating tidal energy platform hosting Schottel Hydro's (SHY) turbine system rated at 280kW.