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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.

New Documents on Tethys

New documents are added to Tethys every week, hand-selected for their relevance to the environmental effects of wind and marine renewable energy. The listings below are short introductions to several new or popular documents that can be accessed through the accompanying Tethys links:

[Potential Impacts of Offshore Wind Farms on North Sea Stratification](#) - Carpenter et al. 2016

Advances in offshore wind farm (OWF) technology have recently led to their construction in coastal waters that are deep enough to be seasonally stratified. As tidal currents move past the OWF foundation structures they generate a turbulent wake that will contribute to a mixing of the stratified water column. In this study we show that the mixing generated in this way may have a significant impact on the large-scale stratification of the German Bight region of the North Sea.

[Consenting Processes for Ocean Energy Updated on Barriers and Recommendations](#) - O'Hagan 2016

This report features information garnered from OES members. Specifically, this refers to the countries of Canada, China, Denmark, France, Germany, Ireland, Korea, Mexico, Monaco, Nigeria, Norway, Portugal, South Africa, Spain, Sweden, the United Kingdom and the United States of America giving the following report a wide geographic dimension. The progress of ocean energy projects in all the OES member countries continues to face challenges in relation to consenting processes.

[Achieving Blue Growth through Maritime Spatial Planning: Offshore Wind Energy Optimization and Biodiversity Conservation in Spain](#) - Rodríguez-Rodríguez et al. 2016

Spain has a high potential for renewable energy production, being the world's third country by installed on-shore wind power. However, it has not yet fully developed its renewable energy production capacity, with no commercial offshore wind production to date, and remains highly dependent on fossil fuel imports. The country is also one of Europe's most biodiverse, on land and at sea. This study spatially assesses the country's offshore wind energy potential by incorporating the newly designated marine protected areas (MPAs) to the official Spanish strategic environmental assessment for the installation of offshore windfarms (SEA).

[Biofouling Community Composition across a Range of Environmental Conditions and Geographical Locations Suitable for Floating Marine Renewable Energy Generation](#) - Macleod et al. 2016

Knowledge of biofouling typical of marine structures is essential for engineers to define appropriate loading criteria in addition to informing other stakeholders about the ecological implications of creating novel artificial environments. There is a lack of information regarding biofouling community composition (including weight and density characteristics) on floating structures associated with future marine renewable energy generation technologies. A network of navigation buoys were identified across a range of geographical areas, environmental conditions (tidal flow speed, temperature and salinity), and deployment durations suitable for future developments.

[Input-Output Life Cycle Environmental Assessment of Greenhouse Gas Emissions from Utility Scale Wind Energy in the United States](#) - Kumar et al. 2016

Wind energy is an emerging source for renewable energy. This article presents an application of the economic input–output life cycle assessment (EIO-LCA) to estimate the greenhouse gas (GHG) emissions through the life cycle of wind energy farms in a state. The EIO-LCA incorporates manufacturing, installation, operation and maintenance, and decommissioning of the wind turbine over its life cycle period. In doing so, the study demonstrates that O&M and decommissioning of infrastructure with a longer life period can be considered to assess the total environmental impacts.

Current News

Current news articles of international interest on win and marine renewable energy include:

[World's first large-scale tidal energy farm launches in Scotland](#)

The launch of the world's first large-scale tidal energy farm in Scotland has been hailed as a significant moment for the renewable energy sector. A turbine for the MeyGen tidal

stream project in the Pentland Firth was unveiled outside Inverness in the Scottish Highlands. After the ceremony, attended by Nicola Sturgeon, the turbine, measuring about 15 metres tall (49ft), with blades 16 metres in diameter, and weighing in at almost 200 tonnes, will begin its journey to the project's site in the waters off the north coast of Scotland between Caithness and Orkney.

[New record for cheapest offshore wind farm](#)

The cost of building offshore wind farms has fallen to a new low, with Sweden's Vattenfall winning contracts to build two projects in Danish waters for just over €60 (£51) per megawatt-hour (MWh). That undercuts a previous record set by Denmark's Dong Energy, which in July won a contract for a project in the Netherlands at €72.70/MWh.

[US Energy Department Awards More Than \\$20 Million for Wave and Tidal Energy Projects](#)

The Energy Department today announced 10 organizations selected to receive more than \$20 million in funding for new research, development, and demonstration projects that advance and monitor marine and hydrokinetic (MHK) energy systems, which generate electricity from ocean waves and tidal currents. These projects will aim to improve the performance of MHK systems and advance environmental monitoring technologies that will help protect wildlife and reduce uncertainty regarding potential environmental impacts.

[Amazon Teases Massive Wind Farm in Texas](#)

Amazon has made its largest renewable energy project to date: a massive wind farm in Texas. When it opens, the 253-megawatt (MW) wind farm in Scurry County, Texas, is expected to generate 1,000,000 megawatt hours (MWh) of wind energy annually, or enough to power nearly 90,000 US homes. It will boast more than 100 turbines, each with a rotor diameter twice as long as the wingspan of a Boeing 747, Amazon says

[Siemens plans turbine splash](#)

Siemens will launch a series of new onshore wind turbines and an innovative approach to manage blade integrity in the field at the WindEnergy 2016 trade show in Hamburg later this month. The German giant said the various innovations are designed to address the challenges of the energy transition from wind energy generation under different conditions to grid access and storage.