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The bi-weekly *Tethys Blast* highlights 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.

Upcoming Workshop on Retiring Risks

OES-Environmental (formerly Annex IV) and ORJIP invite you to join a workshop on Thursday, 5 September 2019 from 14:30 to 17:30 CEST on retiring risks of effects on marine animals from electromagnetic fields and underwater noise from marine energy devices. The workshop will be held in Naples, Italy, at the Centro Congressi della Stazione Marittima di Napoli, following the European Wave and Tidal Energy Conference (EWTEC). You can register for the workshop by sending an email to ORJIP (ORJIP@aquatera.co.uk) by 19 July 2019. Once you are registered, you will receive materials at least two weeks prior to the workshop. For more information, visit the workshop's [event page](#) on *Tethys*.

Upcoming Webinar Showcasing *Tethys Engineering*

On Wednesday, 7 August 2019 from 9:00 to 10:00 PST, *Tethys* will be hosting a webinar to introduce *Tethys Engineering*, a new website that will cover the technical and engineering aspects of the marine renewable energy industry. The webinar will walk through the website, highlighting new content and features. For more information, visit the webinar's [page](#) on *Tethys*.

Upcoming Conferences

[HydroVision International](#) will be held in Portland, Oregon on 23-25 July 2019. In addition to the Marine Energy Symposium, HydroVision will feature industry workshops, technical tours, organization meetings, and other activities.

[Energy3 Canada](#) will be held in Halifax, Nova Scotia on 16-18 October 2019. Early bird registration is available until 17 July 2019. The abstract submission deadline is 22 July 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:

[Dual wave farms for energy production and coastal protection under sea level rise](#) – Rodriguez-Delgado et al. 2019

The objective of this work is to investigate how the coastal defense performance of a dual wave farm is affected by sea level rise through a case study (Playa Granada, southern Iberian Peninsula). To this end, a spectral wave propagation model, a longshore sediment transport formulation and a one-line model are combined to obtain the final subaerial beach areas for three sea level rise scenarios: the present situation, an optimistic and a pessimistic projection. We find that the dual wave farm reduces erosion and promotes accretion regardless of the sea level rise scenario considered.

[The Iowa Atmospheric Observatory: Revealing the Unique Boundary Layer Characteristics of a Wind Farm](#) – Takle et al. 2019

The Iowa Atmospheric Observatory was established to better understand the unique microclimate characteristics of a wind farm. The facility consists of a pair of 120-m towers identically instrumented to observe basic landscape–atmosphere interactions in a highly managed agricultural landscape. Tower measurements during the 2016 growing season demonstrate the ability to distinguish microclimate differences created by single or multiple turbines from natural conditions over homogeneous agricultural fields.

[Acoustic impact of a wave energy converter in Mediterranean shallow waters](#) – Buscaino et al. 2019

In this study, underwater noise from a full-scale wave energy converter system (ISWEC), installed on the coast of Pantelleria Island (central Mediterranean Sea), was characterized. The noise was measured using an autonomous acoustic recorder anchored to the sea bottom 40 m from the ISWEC hull. Considering the biophonies that make up the soundscape of the area, we examined the possible masking of fish choruses due to ISWEC noise and highlighted that at a distance of 1000 m, the 800 Hz peak frequency was 10 dB above the ISWEC signal.

[Development of cumulative impact assessment guidelines for offshore wind farms and evaluation of use in project making](#) – Durning & Broderick 2019

The Crown Estate, responsible for licensing development on the sea bed around the UK, has held three rounds of licensing since 2000 for wind developments. A number of key stakeholders identified a need for cumulative impact assessment (CIA) methodology to be developed that was definitive and endorsed by regulators and industry to aid unblocking barriers to delivery. This paper explores the background to the development

of the guidelines and how they were ‘co-created’ with industry and regulators. We evaluate to what extent they have been used to shape and develop practice.

Potential Benefits of Vessel Slowdowns on Endangered Southern Resident Killer Whales – Joy et al. 2019

A voluntary commercial vessel slowdown trial was conducted through 16 nm of shipping lanes overlapping critical habitat of at-risk southern resident killer whales (SRKW) in the Salish Sea. A temporally and spatially explicit simulation model evaluated the changes in traffic volume and speed on SRKW in their foraging habitat within this Slowdown region. Slower vessel speeds reduced underwater noise in the Slowdown area despite longer passage times and therefore suggest this is an effective way to benefit SRKW habitat function in the vicinity of shipping lanes.

Effect of anthropogenic light on bird movement, habitat selection, and distribution: A systematic map protocol – Adams et al. 2019

Global increases in anthropogenic light contribute to interest by wildlife managers and the public in managing light to reduce harm to birds, but there are no evidence syntheses of the multiple ways light affects birds to guide this effort. We outline a protocol for a systematic map that collects and organizes evidence from the many contexts in which anthropogenic light is reported to affect bird movement, habitat selection, or distribution. Our map will provide an objective synthesis of the evidence that identifies subtopics that may support systematic review and knowledge gaps.

News and Current Events

Marine Renewable Energy

EMEC to Streamline Consenting Process at Billia Croo with Site-Wide Section 36 – EMEC

The European Marine Energy Centre (EMEC) is applying for site-wide Section 36 consent at its grid connected Billia Croo wave test site off the west coast of Orkney, Scotland. The Section 36 consent will further streamline the consenting process for EMEC’s clients, reducing the time and cost associated with offshore demonstration. EMEC’s Section 36 consent application is currently out for consultation, and feedback is invited from stakeholders.

Allseas targets renewables with acquisition of OTEC specialist Bluerise – Allseas

Allseas has acquired Bluerise, a specialist developer of Ocean Thermal Energy Conversion (OTEC) technology. Based in Delft, the Netherlands, Bluerise has been researching and developing OTEC technology for 9 years, designing systems that utilize the natural temperature difference in the ocean between cold deep water (5°C) and warm surface water (25°C) to generate clean electricity. Allseas will use its offshore expertise and record of deep-water technologies to advance Bluerise concepts.

UAE Ministry of Education and IRENA Inspire Next Generation on Renewable Energy – IRENA

The United Arab Emirates (UAE) Ministry of Education and the International Renewable Energy Agency (IRENA) signed an agreement to cooperate on the integration of renewable energy and sustainable development into the national education system. The cooperation aims to promote and support the achievement of the relevant Sustainable Development Goals (SDGs) in the UAE and around the world, namely SDG 7 (affordable and clean energy for all) and SDG 13 (climate action).

CorPower Ocean and Simply Blue Energy enter strategic collaboration agreement on wave farms – CorPower

CorPower Ocean and Simply Blue Energy have signed a Strategic Collaboration Agreement to develop a number of significant wave energy projects off the coasts of the UK and Ireland. Simply Blue Energy has identified a number of development areas suitable for commercial wave energy project deployment. Under this Agreement, they have exclusive rights to use CorPower's technology in the designated zones and aim to start producing and exporting electricity as early as 2024.

French Trio Scraps Tidal Pilot – Marine Energy

Developers behind the in-river tidal energy pilot on the river Rhône in the eastern France have decided not to move forward with the project. Team involved in the project comprised the French electricity generation company, Compagnie Nationale du Rhône, hydrokinetic technology developer, HydroQuest, shipbuilder Constructions Mécaniques de Normandie. The project included the installation of a farm of 30 turbines with a total installed capacity of 2 MW and an average annual production 6,700 MWh.

Wind Energy

FloatGen passes first stretch at sea with flying colours – Recharge

France's first floating wind turbine, the FloatGen prototype brought online last autumn off the west coast of the country, has "exceeded expectations" in its first half-year of full operation, producing 2.2GWh of power for the European grid. Data collected at the SEM-REV test site where the prototype is part-way through two-year trials show uptime on the unit, a 2MW Vestas turbine atop a concrete 'damping pool' platform, rising from 68% in the first quarter to over 90% in the second with a "better than onshore" power curve.

New European Wind Atlas Unveiled – Offshore Wind

European researchers have launched the New European Wind Atlas (NEWA) which is expected to support the identification of optimal sites for new wind farm projects. Thirty partners from academia and industry from eight European countries worked on developing and validating new methods for the assessment of wind conditions as part of

the NEWA R&D project. The main aim of the atlas, which was launched on 27 June in Brussels, was the development of standardized online maps for site assessment.

Stanford study boosts wind production – reNews

Researchers at Stanford University, in California, have shown that angling turbines slightly away from the wind can boost energy produced overall. Pointing turbines slightly away from oncoming wind – called ‘wake-steering’ – can reduce that interference and improve both the quantity and quality of power from wind farms, and probably lower operating costs, according to the new research. The study tested its modelling on a wind farm in Alberta, Canada, in collaboration with operator TransAlta Renewables.

New joint project between wind and chemical industry to advance wind turbine recycling – WindEurope

WindEurope, Cefic (the European Chemical Industry Council) and EUCIA (the European Composites Industry Association) have created a cross-sector platform to advance novel approaches to the recycling of wind turbine blades. Today, 2.5 million tons of composite material are in use in the wind energy sector. In the next five years 12,000 wind turbines are expected to be decommissioned. Broadening the range of recycling options is critical for the industry’s development.

ORE Catapult and Tus Extend China Collaboration – ORE Catapult

The UK’s Offshore Renewable Energy (ORE) Catapult and China’s Tus Holdings have extended their international collaboration through the signature of a Memorandum of Understanding with the People’s Government of Qingdao and the Pilot National Laboratory for Marine Science and Technology (Qingdao). The parties will cooperate in the Qingdao Marine Science and Technology Revitalization Plan, jointly developing marine renewable energy technology and cooperation between China and Britain.



[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:

- The [Katapult Ocean Accelerator Programme](#) has launched its 2nd call for applications from start-ups looking to provide solutions to ocean challenges. The 3-month programme will focus on growth, investor readiness, leadership development, exponential tech and introductions to the Norwegian and global ocean tech ecosystem. Applications close 31 August 2019.