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[Tethys](#) is an online knowledge base that facilitates the exchange and dissemination of information on the environmental effects of wind and marine energy. The bi-weekly *Tethys Blast* highlights new publications in the [Tethys Knowledge Base](#); relevant announcements, opportunities, and upcoming events; and news articles of international interest. [ORJIP Ocean Energy](#) has partnered with OES-Environmental to provide additional content. If you have specific content you would like circulated to the greater wind and marine energy communities, please send it to tethys@pnnl.gov for consideration.

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Announcements

ETIPP Seeks Regional Partner

The US Department of Energy's (DOE's) [Energy Transitions Initiative Partnership Project](#) (ETIPP) is seeking a regional partner in the Pacific Northwest to engage and support remote and island communities as they plan for energy resilient solutions. With support from the Water Power Technologies Office and others, ETIPP expands on the work of the US DOE's Energy Transitions Initiative. [Regional partner proposals](#) are due August 31.

Calls for Abstracts

The Marine Alliance for Science and Technology for Scotland is accepting abstracts for the [11th Annual Science Meeting](#), which will take place virtually and in Glasgow, Scotland on 5-7 October 2021. Abstracts are due by 3:00pm UTC on 23 August 2021.

The Leibniz Institute for Zoo and Wildlife Research is accepting abstracts for the [1st International Bat Research Online Symposium](#), which will take place virtually on 2 November 2021. Abstracts are due by 1 September 2021.

The abstract deadline for the [Ocean Sciences Meeting 2022](#), which will take place online and in Honolulu, US from 27 February to 4 March 2021, has been extended to 29 September 2021. Please consider submitting an abstract to Scientific Session OT15: Measuring, Modeling, and Mitigating Environmental Effects of Ocean Renewable Energy.

Call for Papers

Animals is currently inviting submissions for a Special Issue entitled "[Bat Biology in Relation to Wind Energy Development](#)". This Special Issue focuses on advancements in the methodologies used to assess bat populations, technologies used to study bat activity and behavior, and physiological characteristics that relate to how bats respond to various stimuli (e.g., audio, visual, electromagnetic) that may serve as either attractors or deterrents to wind turbines. Manuscript submissions are due 30 September 2021.

Funding & Testing Opportunities

Innovate UK has launched another round of [Smart Grants](#) for eligible UK organizations to apply for a share of up to £25 million for game-changing and commercially viable research and development innovation. Applications are due by 10:00am UTC on 25 August 2021.

The US DOE recently announced a plan to provide \$37 million for small businesses pursuing climate and energy R&D projects through its Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. Letters of intent for the [SBIR/STTR Phase 1 Release 1 FOA](#) are due by 5:00pm EDT (9:00pm UTC) on 30 August 2021. This is the first of four SBIR/STTR FOAs for 2022, so stay tuned for additional opportunities.

The European Commission's Horizon Europe Framework Programme launched a [Call for Partnership on Innovative SMEs](#) (small and medium-sized enterprises) to improve knowledge transfer through increased collaboration, improve access to financing and value chains, and spur more innovative solutions. Applications are due 1 September 2021.

Interreg North-West Europe launched the [4th Ocean DEMO](#) (Demonstration Programme for Ocean Energy Pilot Farms and Supporting Technologies) [Call for Applications](#). Successful applicants will receive free access to test their ocean energy products in real sea environments at the project's network of test centers. Applications are due 10 September 2021.

The US Testing Expertise and Access for Marine Energy Research (TEAMER) program is now accepting applications for its 4th Request for Technical Support (RFTS) through 16 September 2021. Applications will now be reviewed on a quarterly basis and those submitted after the due date will be considered for the next RFTS. Visit the [TEAMER website](#) for more details.

The US National Offshore Wind Research and Development Consortium (NOWRDC) recently released a competitive solicitation entitled [Innovations in Offshore Wind Solicitation 2.0](#). Concept papers for Round 1: Supply And Logistics, Operations & Maintenance are due 16 September 2021. Concept papers for Round 2: Environmental Conflicting Use Mitigation, Power Systems & Interconnection are due 9 March 2022. Visit the [NOWRDC website](#) for more details.

The Oceanic Platform of the Canary Islands (PLOCAN) has opened its [Summer Access Call for 2021](#). Applicants interested in accessing PLOCAN facilities and services are encouraged to contact PLOCAN before submitting their proposal. Applications due 20 September 2021.

Student & Employment Opportunities

The University of Aberdeen is recruiting for a [Research Fellow](#) who will be responsible for predicting seasonal movements of marine top predators using fish migration routes and autonomous platforms, as part of the PREDICT project. Applications are due 23 August 2021.

France Énergies Marines is seeking candidates for a [PhD position](#) to work on the numerical simulation of scour around wind turbine foundations. Applications are due 31 August 2021.

The Environmental Research Institute at the University of the Highlands and Islands is recruiting for a [Research Fellow - Offshore Renewable Energy and the Environment](#) to work with Ørsted to design novel environmental and ecological monitoring techniques and next-generation measurement platforms. Applications are due 20 September 2021.

Upcoming Events

Upcoming Symposium

The Royal Academy of Engineers' Frontiers program is hosting a virtual symposium, "[From seeds to needs: Regenerating ecosystems services to halt the biodiversity crisis](#)", from 27 September to 8 October 2021. The event will bring together early- and mid-career researchers, innovators, and practitioners to scope out the challenges that would most benefit from engineering solutions, with a focus on marine, freshwater, and terrestrial themes. Register [here](#).

Upcoming Webinars

OES-Environmental is hosting a public webinar, "[Guidance Documents for Risk Retirement](#)", from 8:00-9:00am PDT (3:00-4:00pm UTC) on 31 August 2021. This webinar will provide an overview of the [risk retirement](#) process, including [data transferability](#), and an update on the new [guidance documents](#), which aim to bridge between scientific evidence and application for consenting/permitting processes. Register [here](#).

The New York State Energy Research and Development Authority's Offshore Wind Team is hosting a webinar from 1:00-2:00pm EDT (5:00-6:00pm UTC) on 1 September 2021 as part of its [Learning from the Experts webinar series](#). During the webinar, Drew Carey with INSPIRE Environmental will discuss the relative impacts of fixed offshore wind foundation types in the ocean environment. Register [here](#).

Upcoming Conferences

The University of Plymouth is hosting the [14th European Wave and Tidal Energy Conference](#) on 8-9 September 2021 online and in Plymouth, UK. Register [here](#).

The University of Maine is hosting the [American Floating Offshore Wind Technical Summit](#) on 8-9 September 2021 online. Register for free [here](#).

The Pacific Ocean Energy Trust is now hosting the [Ocean Renewable Energy Conference](#) on 22-23 September 2021 online. Early bird registration ends 21 August 2021.

New Documents on *Tethys*

Marine Energy

[A new framework and tool for ecological risk assessment of wave energy converter projects](#) – Galparsoro et al. 2021

While the technological development of wave energy converters is progressing rapidly, their environmental impacts are still largely unknown, which is a barrier that could hinder their deployment. This research contributes to the state-of-the-art by introducing a framework for quantifying and analysing the ecological risks of three technologies (oscillating water columns, oscillating wave surge converters, and wave turbines). Based on a literature review, expert consultation process, and the development of a web tool, the potential pressures and the ecosystem elements that might be affected during the life cycle of a generic wave farm (an array of wave energy converters) are investigated. The ecological risk assessment framework is operationalized into a free-access web tool for the interactive assessment and visualisation of the pressures and ecological risks.

[Marine Energy Environmental Permitting and Compliance Costs](#) – Peplinski et al. 2021

Costs to permit Marine Energy projects are poorly understood. In this paper we examine environmental compliance and permitting costs for 19 projects in the U.S., covering the last 2 decades. Guided discussions were conducted with developers over a 3-year period to obtain historical and ongoing project cost data relative to environmental studies (e.g., baseline or pre-project site characterization as well as post-installation effects monitoring), stakeholder outreach, and mitigation, as well as qualitative experience of the permitting process. Data are organized in categories of technology type, permitted capacity, pre- and post-installation, geographic location, and funding types. We also compare our findings with earlier logic models created for the Department of Energy.

[Relative Performance of Surface vs. Bottom-Mounted Hydrophones in a Tidal Channel](#) – Hasselman et al. 2021

Passive Acoustic Monitoring (PAM) technologies are commonly used to monitor echolocating marine mammals around tidal energy devices. However, the detection efficiency of PAM instruments can be hindered by a variety of factors (e.g., signal attenuation, flow noise, ambient noise) inherent to high flow environments that can vary with deployment depth, and can impede monitoring efforts. While previous work indicated that conventional hydrophones that record raw pressure time series data may be preferable for monitoring harbour porpoise in tidal channels, where these technologies should be deployed for effective monitoring (i.e., at the sea surface or on the sea floor) remains an unresolved issue.

Wind Energy

[Land-Based Wind Energy Siting: A Foundational and Technical Resource](#) – Christol et al. 2021

This land-based wind energy siting resource was created by the U.S. Department of Energy Wind Energy Technologies Office's WINDEXchange initiative and presents foundational information about land-based utility-scale wind energy that local decision makers can use when making community decisions about wind energy development. Consolidated, accessible, and easy to understand, this information resource focuses on land-based wind energy from the community perspective and examines siting-related impacts and mitigation strategies. The intended audience for this guide is county-level decision officials, as they are often responsible for approving both wind energy ordinances and applicable permits needed for wind energy development.

[Integration of sustainability, stakeholder and process approaches for sustainable offshore wind farm decommissioning](#) – Spielmann et al. 2021

Up to date only few offshore wind farms were decommissioned, so there is a lack of experience and knowledge and decommissioning processes are largely unknown. This paper outlines a practical concept of integrating the three approaches for a sustainable decommissioning of offshore wind farms. It comprises a stakeholder approach, where relevant stakeholders are identified and analysed, a sustainability approach, in which objectives for sustainable offshore wind farm decommissioning are defined, and a process approach, including the selection, documentation and parametrization of decommissioning processes. The theoretical concept of the integration of the three approaches is outlined first. Thereafter the concept is applied on a case study of offshore wind farm decommissioning.

[Capercaillie and Wind Energy: An international research project](#) – Taubmann et al. 2021

Do wind turbines influence forest grouse and specifically capercaillie (*Tetrao urogallus*)? To-date this question is much discussed and difficult to answer, as few studies are available and standards for post-constructional or Before-After-Control-Impact (BACI) designs are not always followed. The international research project "Capercaillie and wind energy" investigated six study areas in Germany, Austria, and Sweden whether

effects of wind turbines on capercaillie can be measured using five approaches in an BACI or post-constructional design. We addressed potential impacts of wind energy on the species' individual and population level, by studying resource and habitat selection, movement ecology, reproduction success, risk of predation and stress physiology.

News & Press Releases

Marine Energy

[WPTO-NOAA Ocean Observing Prize Competitors to Make a SPLASH in the Olympic Peninsula](#) – US DOE WPTO

The U.S. Department of Energy's Water Power Technologies Office (WPTO) and the National Oceanic and Atmospheric Administration (NOAA) have officially announced that the 2022 Powering the Blue Economy: Ocean Observing Prize competitors will test their ocean observing prototypes in the SPLASH Contest next fall on the Olympic Peninsula, Washington. The testing will take place at two sites, one located in Sequim Bay and one in Clallam Bay. Competitors will have access to helpful data that details the area's conditions as well as support from experts and engineering facilities at Pacific Northwest National Laboratory's Marine and Coastal Research Laboratory. The SPLASH Contest is designed to assess the endurance and performance of finalists' wave energy harvesting, self-charging autonomous vehicles in real-world sea conditions.

[FORCE to start collecting real-time subsea data](#) – FORCE

As part of continuing efforts to improve environmental data from the Bay of Fundy, the Fundy Ocean Research Centre for Energy (FORCE) is deploying a large cabled platform in the Minas Passage and sharing that data online with the Canadian Integrated Ocean Observing System. "We're putting down a platform on the sea floor and connecting it to a cable to that will give us real time data," says Chuck Taylor, a field researcher at FORCE. "This takes our acoustic monitoring to the next level." FORCE's subsea environmental observatory is a cabled platform that allows for power and two-way communication between the sea and FORCE's onshore facility, using hydrophones, ADCP, an optical camera, and subsea lights to bring real-time data ashore for a range of environmental monitoring purposes.

[Eco Wave Power Secures 1MW Installation and Grid Connection Permit \(Small-Production Unit Registration Approval\) for Its Planned Pilot Project in Portugal](#) – Eco Wave Power

In a significant regulatory milestone, Eco Wave Power Global is pleased to announce that its Portuguese subsidiary, EW Portugal has received an installation and grid connection permit of 1MW in the form of a Small-Production Unit registration approval from the Portuguese Directorate-General for Energy and Geology. This registration approval is required for the installation and grid connection of a 1MW pilot project at the Barra do

Douro breakwater in Porto, Portugal. The 1MW project is planned to be the first stage of the 20MW Concession Agreement entered into with APDL (Administração dos Portos do Douro, Leixões e Viana do Castelo, S.A.) in April 2020, for the potential usage of four locations owned and operated by APDL.

ORPC Secures \$25 Million in Growth Capital Led by Canadian Shield Capital and Hatch **– ORPC**

Ocean Renewable Power Company (ORPC), a developer of clean, renewable power systems that harness energy from free-flowing rivers and tidal currents, recently announced that it has secured a \$20 million investment commitment, with an additional \$5 million second closing this fall, from a consortium led by Canadian Shield Capital in alliance with Hatch. Hatch is a global engineering, project management, and professional services firm, with specific expertise in waterpower and microgrids. Existing investors of ORPC also participated fully in this round of funding. Proceeds of the raise will be used to finance ORPC's growth including the installation of multiple devices in its targeted markets as well as boosting the company's sales and marketing capability, supply chain and engineering expertise, and front office services.

NREL's Thermoplastic Blade Research Dives Deep With Verdant Power's Tidal Energy Turbines – NREL

National Renewable Energy Laboratory (NREL) researchers have been exploring the use of thermoplastic composite materials for wind turbines for several years, but they have only just begun to scrape the surface of how these materials perform underwater. For the first time in history, thermoplastic composite blades, which have the potential to revolutionize the marine energy industry, are being tested on a large-scale tidal power turbine. Thanks to funding from the U.S. Department of Energy's Water Power Technologies Office and a collaboration with Verdant Power, NREL researchers have constructed turbine blades using thermoplastic composite materials and are now testing them on one of Verdant Power's tidal turbines, which are currently deployed in New York City's East River.

Wind Energy

South Korea Awards First Offshore Wind Farm License – The Maritime Executive

South Korea awarded the first license for a floating offshore wind farm to be developed in a partnership between Macquarie's Green Investment Group and TotalEnergies. With a maximum installed capacity of 1.5 GW developed across three phases, the project is projected to be one of the largest floating offshore wind developments in the world. The Ministry of Trade, Industry and Energy's Electricity Regulatory Commission granted the partners an Electricity Business License (EBL) for their offshore wind project to be located near Ulsan, Korea. The EBL grants the partners exclusive development rights to progress the project's first phase, which will consist of 504 MW. Detailed environmental impact assessments will now commence, and construction is expected to start in 2024.

BOEM Completes Environmental Review for Wind Project Proposed for Offshore Rhode Island and New York – BOEM

In a significant step towards achieving the Biden-Harris administration's goal of accelerating responsible development of renewable energy on public lands and in offshore waters as a way of tackling the climate crisis and creating union jobs, the Bureau of Ocean Energy Management (BOEM) has completed its environmental review of the proposed South Fork Wind project offshore New York and Rhode Island, which could create up to 1,700 jobs. South Fork Wind, LLC is proposing to build an offshore wind energy project approximately 19 miles southeast of Block Island, Rhode Island, and 35 miles east of Montauk Point, New York. The project will deliver approximately 130 megawatts (MW) of power to the South Fork of Long Island, New York. If approved, it would be the second commercial-scale offshore wind project in the United States.

Locals to help shape studies for Australia's first offshore wind project – Star of the South

Gippsland locals and visitors are invited to share their input, including on favourite sightseeing locations and special places, as planning for Australia's first offshore wind project ramps up. Star of the South is entering the next phase of its detailed environmental assessments with 25 technical reports to be prepared over the next two years. The reports will cover topics including environment, visual, social, business, transport, agriculture and fisheries. Star of the South is seeking local knowledge and feedback to help shape its technical reports. People are invited to share information and photos of their favourite sightseeing spots for the project's visual assessment, which will consider different viewpoints looking out towards the wind farm at sea.

Interior Department Announces Next Steps for Idaho Onshore Wind Energy Project – US Department of the Interior

The Department of the Interior recently announced that the Bureau of Land Management (BLM) is seeking public input on a commercial-scale wind energy facility that is proposed to be constructed on BLM-managed public land in southern Idaho, approximately 25 miles northeast of Twin Falls. The Lava Ridge Wind Energy Project has the potential to generate 1,000 megawatts of wind energy. The Biden-Harris administration has committed to increase renewable energy production on public lands and waters, including a target goal of permitting at least 25 gigawatts of onshore renewable energy by 2025. The BLM is seeking public comments on issues, planning criteria, concerns, potential impacts, alternatives, and mitigation measures that the agency should consider in analyzing the proposed Lava Ridge Wind Project.

Spanish offshore wind reaches key milestone – WindEurope

Spain is a European leader in wind energy. But it is yet to enter into commercial offshore wind development. The Spanish Government now closed the consultation for Spain's first Offshore Wind Roadmap, a key milestone on the way towards Spain's first

commercial offshore wind farms. With the consultation for its Offshore Wind Roadmap, the Spanish Ministry for the Ecological Transition and the Demographic Challenge is doubling down on its offshore wind ambitions. The draft Roadmap proposes a target of up to 3 GW of offshore wind in Spain by 2030. To make this a reality, it earmarks at least €200 m for research and development in offshore wind technologies. Offshore wind activities in Spain have so far been limited to pilot projects. The Canary Islands currently host the only Spanish offshore wind turbine.