TETHYS BLAST

7 June 2024

Tethys is a knowledge hub with information and resources on the environmental effects of wind and marine energy. The bi-weekly Tethys Blast highlights announcements and upcoming events; new documents in the Knowledge Base; and international energy news. ORJIP Ocean Energy has partnered with OES-Environmental to provide additional content. Email us to contribute!

Announcements

2024 State of the Science Report

Ocean Energy Systems (OES)-Environmental has released a draft of the OES-Environmental 2024 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World for public comment. If you would like to provide feedback on the draft report, please complete this review form by 28 June 2024. The draft report serves as an update to the 2020 State of the Science Report and features several new sections, including resources to advance marine renewable energy and moving beyond stressor-receptor interactions.

CWC Applications Open

Applications for the U.S. Department of Energy (DOE) Wind Energy Technologies Office's 2025 Collegiate Wind Competition (CWC) are open through 13 June 2024. CWC helps students prepare for jobs in the wind energy workforce through real-world experiences with wind energy technology, project development, finance, communications, and outreach.

BOEM Seeking Public Comments

The U.S. Bureau of Ocean Energy Management (BOEM) is seeking public comments on its:

- Draft Environmental Assessment on Oregon offshore wind leasing (due 14 June 2024)
- Proposal for a first offshore wind auction in the Gulf of Maine (due 1 July 2024)

ETIPP Applications Open

The U.S. DOE is accepting applications for the Energy Transitions Initiative Partnership Project (ETIPP), which provides technical assistance for remote and island communities to bolster their energy resilience through tailored solutions, through 10 July 2024.

Calls for Abstracts

The Call for Abstracts for the International Conference on Ocean Energy (ICOE 2024) remains open. ICOE 2024 will take place on 17-19 September 2024 in Melbourne, Australia.

The Renewable Energy Wildlife Institute has extended the Call for Abstracts deadline for 15th Wind Wildlife Research Meeting (WWRM 2024) through 10 June 2024. WWRM will take place on 12-15 November 2024 in Corpus Christi, Texas, U.S.

American Clean Power has extended the deadline to submit a poster application for Offshore WINDPOWER 2024 through 14 June 2024. The conference and exhibition will take place 28-30 October 2024 in Atlantic City, New Jersey, U.S.

The Call for Abstracts for the 3rd GloFouling Research & Development Forum and Exhibition on Biofouling Prevention and Management for Maritime Industries is now open through 15 June 2024. The event will take place 4-8 November 2024 in Busan, South Korea.

The Call for Abstracts for 7th Asian Offshore Wind, Wave and Tidal Energy Conference (AWTEC 2024) has been extended through 31 July 2024. AWTEC will take place 20-24 October 2024 in Busan, South Korea.

The Call for Abstracts for Floating Wind Solutions 2025 is now open through 1 August 2024. Floating Wind Solutions will take place 15-17 January 2025 in Houston, Texas, U.S.

The Call for Abstracts for the Offshore Technology Conference (OTC 2025) is open through 10 September 2024. OTC will take place 5-8 May 2025 in Houston, Texas, U.S.

Funding & Testing Opportunities

Energiaren Euskal Erakundea / Ente Vasco de la Energía has opened an investment support programme to support demonstration and validation activities of innovative technologies for wave and offshore wind energy, with the potential to contribute to greater adoption of renewable energies. Applications are due 19 June 2024.

The Championing Coastal Coordination (3Cs) initiative is seeking to enhance and progress coordination for coastal sustainability and resilience in England and is seeking Expressions of Interest for its 2024/2025 funding round. Expressions of Interest are due 20 June 2024.

The National Fish and Wildlife Foundation is soliciting proposals to promote the development and adoption of innovative technologies that can help reduce vessel strikes of the endangered North Atlantic right whale (right whale). The Vessel Strike Avoidance Fund 2024 will award up to $6 million in grants, pending availability of funding. Pre-proposals are due 25 June 2024.

The Testing Expertise and Access for Marine Energy Research (TEAMER) program, sponsored by the U.S. DOE and directed by the Pacific Ocean Energy Trust (POET), is accepting Request for Technical Support (RFTS) 13 applications through 28 June 2024 to support marine energy testing and development projects. Open Water Support applications can be submitted any time.

The U.S. Advanced Research Projects Agency-Energy (ARPA-E) recently announced up to $150 million in funding through its Vision OPEN Call to develop ground-breaking systems that provide abundant primary energy, enable intermodal energy transport, and sustainably meet demand for polymer and other materials. Concept papers are due 16 July 2024.

Career Opportunities

The European Marine Energy Centre (EMEC) is looking for a Project Portfolio Manager to manage the delivery of decarbonisation projects underneath the Islands Centre for Net Zero (ICNZ) and a Business Development Coordinator to identify, develop, and secure opportunities for EMEC to grow its portfolio of projects. Applications are due 21 June 2024.

The University of Southampton is offering a PhD Studentship: Tackling the Geotechnical Challenges of Floating Offshore Wind to join the UK-funded Offshore Renewable Energy Supergen Hub project. Applications are due 31 August 2024.

Renewable Energy Wildlife Institute (REWI) is launching a search for a new Executive Director to lead REWI to its next level of financial, programmatic, and organizational success. Applications are due 31 July 2024.

Upcoming Events

Upcoming Webinars

Australia's Blue Economy Cooperative Research Centre is hosting a webinar, "Cultural Licence to Operate in the Blue Economy", on 19 June 2024 from 4:00-5:00pm AEST (6:00-7:00am UTC). The webinar will explore outcomes from a trans-Tasman scoping project funded to build a Cultural Licence to Operate framework that helps to create the ecosystem for an ethical, equitable, dynamic, and responsive system. Register here.

The AquaWind and FLORA (FLOating RAdar) projects are organizing a webinar, "Multi-use Ocean Platform Pilot Demonstrators", on 20 June 2024 from 10:30am-12:00pm CEST (8:30-10:00am UTC). The webinar will highlight multi-use ocean projects and market opportunities related to joint uses of the marine environment in the European Union. Register here.

Marine Renewables Canada is hosting an Ask an Expert webinar, "Lessons Learned and Best Practices for Coexistence with Other Ocean Users", on 22 June 2024 from 2:00-3:00pm ADT (5:00-6:00pm UTC). During the webinar, Dr. Alison Bates will highlight some of the lessons learned from her work in offshore wind and co-existence, providing valuable knowledge and perspective that can inform the responsible development of offshore wind. Register here.

Upcoming Workshops

Pacific Northwest National Laboratory is hosting a three-part virtual workshop on understanding Pacific Northwest community, tribal, and other public information needs around marine carbon dioxide removal (MCR) and marine renewable energy (MRE). The workshop will take place in three two-hour sessions. Please save these dates and register for the workshop to participate:

- 17 June 2024, 1:00-3:00pm PDT: Kickoff Meeting and mCDR-focused discussion
- 18 June 2024, 1:00-3:00pm PDT: MRE-focused discussion
- 21 June 2024, 10:00am-12:00pm PDT: Bridging mCDR and MRE needs

The Oceanic Platform of the Canary Islands (PLOCAN) is hosting its 2024 Glider School, which is a leading hands-on ocean-glider technology training forum, from 21-25 October 2024 in Telde, Gran Canaria, Canary Islands, Spain. Applications to attend are due 30 June 2024.

Upcoming Conferences

The 11th Partnership for Research in Marine Renewable Energy (PRIMaRE) Conference will take place on 27-28 June 2024 in Southampton, England.

The New York State Energy Research and Development Authority (NYSERDA) is hosting the 2024 State of the Science Workshop on Offshore Wind Energy, Wildlife, and Fisheries on 16-19 July 2024 in Long Island, New York, U.S. Register here.

The University Marine Energy Research Community (UMERC) + Marine Energy Technology Series (METS) Conference 2024 will take place on 7-9 August 2024 in Duluth, Minnesota, U.S.

Upcoming Symposium

The International Network on Offshore Renewable Energy (INORE) is accepting applications from graduate students, early-stage researchers, and young professionals in offshore renewable energy to attend its 2024 European Symposium through 9 June 2024. The symposium will take place from 26 August to 1 September 2024 in Aberdeen, Scotland and is free to attendees.

New Documents on Tethys

Tethys hosts thousands of documents on the environmental effects of marine and wind (land-based and offshore) energy, including journal articles, conference papers, and reports.

Marine Energy

Local and regional interactions between tidal stream turbines and coastal environment – Li et al. 2024

> An extended three-dimensional unstructured ocean model for simulating impacts of tidal stream turbines on tidal current, turbulence and surface waves has been applied to study the interactions between a tidal turbine farm and its surrounding environment. The present study aims to reveal three-dimensional local and regional changes due to the operation of a proposed turbine farm in natural coastal environment. Fine mesh size is assigned at the turbine farm location to capture the details of local wake dynamics, hydrodynamics and suspended sediment transport. Large geographic coverage of the model provides details of changes in regional features.

Country-Specific Guidance Document: Ireland – OES-Environmental 2024

> The guidance documents are intended to be available for regulators and advisors as they carry out their decision-making and for developers and consultants as they prepare consenting and licensing applications. This country-specific document presents an overview of regulations relevant for marine renewable energy development in Ireland from pre-application, through to application and post-consent and is intended mainly for developers and consultants. It is not intended to replace any formal guidance or prescribe action, but rather provide a starting point for understanding the key requirements of the regulatory framework. This document is intended to be read in conjunction with the background document.

Site investigation and Risk Evaluation Using the Spatial Environmental Assessment Toolkit – Langton et al. 2024

> Presently, marine energy (ME) deployments are absorbing unsustainable costs and timelines associated with planning and permitting to get projects in the water (up to 25% of total project cost, which is more than double comparable offshore energy projects at approximately 10% of total project costs; Kramer et al. 2020; Peplinski et al. 2021). To overcome this challenge, the Spatial Environmental Assessment Toolkit (SEAT) is in development to provide the highest-quality site characterization and a priori understanding of the potential environmental impacts using numerical modeling tools and available site data to reduce uncertainty. Reduced uncertainty equates to a reduction in resources required for planning and environmental permitting and a more streamlined path to realized commercial-scale projects.

Wind Energy

Beneath the blades: Marine wind farms support parts of local biodiversity - a systematic review – Knorrn et al. 2024

> Offshore wind energy developments in European waters are rapidly expanding to meet the increasing global demand for renewable energy. These developments provide new substrates for species colonisation, but also introduce changes in electromagnetic fields,

noise levels, and hydrological conditions. Understanding how these man-made structures affect marine biodiversity across various species groups is crucial, yet our knowledge in this field remains incomplete. In this synthesis paper, based on 14 case studies conducted in northeastern Atlantic (North, Irish and Baltic seas), we aggregated species-level data on abundance, biomass, and other quantity proxies spanning the entire food chain from invertebrates to mammals, and compared these variables between wind farms and nearby control sites.

Wind farms increase land surface temperature and reduce vegetation productivity in the Inner Mongolia Plateau – Liu et al. 2024

Wind power has been developing rapidly as a key measure to mitigate human-driven global warming. The understanding of the development and impacts of wind farms on local climate and vegetation is of great importance for their rational use but is still limited. In this study, we combined remote sensing and on-site investigations to identify wind farm locations in Inner Mongolia and performed landscape pattern analyses using Fragstats. We explored the impacts of wind farms on land surface temperature (LST) and vegetation net primary productivity (NPP) between 1990 and 2020 by contrasting these metrics in wind farms with those in non-wind farm areas. The results showed that the area of wind farms increased rapidly since 1990 to 10,755 km^2 by 2020.

Fisheries independent surveys in a new era of offshore wind energy development – Lipsky et al. 2024

Fisheries independent surveys require rethinking because of increasing spatial restrictions and interactions with offshore wind energy development (OWD). Fisheries, protected species, and environmental data collections have been conducted by scientific institutions to meet societal demands for food security, conservation, and other marine uses. These data collections provide information on key resource measures, essential for fisheries, protected species, and ecosystem management. With the increase in pace and magnitude of OWD's industrialization of marine waters, disruptions in these long-term time series can be expected. These disruptions will impact the ability to support current and future management goals and objectives.

News & Press Releases

Marine Energy

MoorPower demonstrator achieves initial goals, signaling ability for commercialization – Offshore Energy

Carnegie Clean Energy’s MoorPower demonstration project has reached its goals during the initial operational phase, showing the ability to meet commercialization targets, the Australian company said. MoorPower is a wave converter system designed for offshore energy demand applications. The MoorPower Module works on the same principle as the

CETO Power Take Off (PTO), but on the surface and at a smaller scale, so learnings are transferable to Carnegie's projects in Europe. In January 2024, the device was deployed in North Fremantle, Western Australia, and brought back to port for inspection and maintenance in April 2024. The company said that the MoorPower modules have been engineered for simple detachment and reattachment as is required for commercial operating barges, ensuring that the barge can be maintained with ease.

Water Power Technologies Office Selects Teams for 2025 Hydropower and Marine Energy Collegiate Competitions – U.S. DOE

The U.S. DOE's WPTO recently announced the 36 teams selected to participate in the 2025 Hydropower Collegiate Competition (HCC) and Marine Energy Collegiate Competition (MECC), the largest cohort of teams to date. These annual competitions engage and educate students about real-world challenges facing these sectors and the many career opportunities in water power with the goal of encouraging the next generation to join the hydropower and marine energy workforces. The 2025 MECC asks teams to integrate marine energy with blue economy applications such as ocean exploration, aquaculture, and desalination. After identifying a promising blue economy market, teams will design a marine energy-powered device to serve that market. Each team will be assigned a marine energy mentor and compete in four challenges.

Symphony Wave Power's dry testing to pave the way for sea trials – Offshore Energy

Netherlands-based Symphony Wave Power has approached dry testing, which is the next stage of its wave power technology validation program. In the forthcoming months, Symphony Wave Power will set up and conduct the dry test at the Harsveld Apparatenbouw BV facilities in Gemeente Velsen. This step will allow the company to test the functionality and efficiencies before heading to sea trials. The company's technology complements energy transition by harnessing wave power alongside solar and wind energy. Testing the company's rubber membrane pump mechanism signifies a step towards sustainable and cost-effective energy generation from coastal sources. The dry test aims to mitigate risks for sea trials slated for early 2025.

BiMEP wins 2024 Innovation Award – Biscay Marine Energy Platform (BiMEP)

This year the Basque Association of Civil Engineers has given its innovation award to the marine energy test facility, BiMEP, for its crucial role in promoting research and development into new marine sources of renewable energy — specifically wave power and floating wind power. The award, presented at the association's annual meeting in Bilbao, recognises the innovative thinking of BiMEP's founders a decade ago. In awarding the prize, the association referred to their foresightedness in identifying that tech companies would need fully equipped and pre-authorised offshore test infrastructures for trialling floating renewable power generation devices. By commissioning the BiMEP, they provided the market with a critical permanently-available infrastructure for sea trials.

Buoy comes back for maintenance after one year of gauging tidal energy device effects on wildlife – Offshore Energy

> Menter Mon-managed wildlife monitoring buoy, in charge of collecting marine wildlife information off the coast of Holyhead, Wales, has been brought back to Holyhead Port for maintenance, after a year at sea. The mission of the buoy equipment, which records wildlife behavior in the Morlais zone, is to understand the impact of the Morlais tidal energy devices on local wildlife, if any are present. This wildlife monitoring buoy was deployed in the sea off the coast of Holyhead on June 15, 2023, scoring a notable milestone for tidal energy in Wales, as the data gathered is anticipated to be used to make decisions on future turbine installations at the Morlais tidal energy site as well as similar projects worldwide. Operating on solar and wind energy, the buoy features data collection technology, including surface and underwater infrared and red-green-blue cameras.

Wind Energy

BOEM Finalizes Environmental Review of Potential Offshore Wind Lease Activities in the Central Atlantic – U.S. BOEM

> The BOEM recently announced the availability of its final Environmental Assessment (EA), which considers possible impacts from issuing leases for potential offshore wind development off the Delaware, Maryland, and Virginia coasts, including site assessment and site characterization activities such as geophysical, geological, and archaeological surveys. The EA concluded that there would be no significant impacts from lease issuance. BOEM plans to hold a sale in the Central Atlantic later this year. A final sale notice (FSN) will be published at least 30 days prior to the sale, detailing the time and date of the lease sale and qualified participants.

New research programme set to develop knowledge on noise mitigation for floating offshore wind – Offshore Renewable Energy Catapult

> Work has begun on a collaborative marine research project aimed at identifying design innovations and best practice in monitoring and mitigating underwater noise associated with floating offshore wind developments. Experts from the Offshore Renewable Energy (ORE) Catapult's Floating Offshore Wind Centre of Excellence (FOW CoE) will work alongside project partners Equinor, JASCO Applied Sciences, Scottish Association for Marine Science (SAMS), and Xi Engineering, with ORE Catapult serving as project lead. The project has been jointly funded by The Crown Estate and the Floating Offshore Wind Centre of Excellence. The FLOWN-MIT programme has been developed to enhance understanding of environmental impacts while promoting a consistent, evidence-based approach to monitoring and mitigating potential risks.

Governor Hochul Announces the Finalization of New Contracts for Empire Wind 1 and Sunrise Wind – New York State

Governor Kathy Hochul recently announced the finalization of new contracts for Empire Wind 1, a planned 810-megawatt project (developed by Equinor), and Sunrise Wind, a planned 924-megawatt project (developed by Ørsted and Eversource) as the result of New York's fourth offshore wind solicitation. The two offshore wind projects, totaling over 1,700 megawatts, will produce enough clean energy to power over one million New York homes and will be the largest power generation projects in New York State in over 35 years once they enter operation in 2026. The announcement is part of New York's 10-Point Action Plan to support the growing large-scale renewable energy industry, and represents progress toward the achievement of the State's Climate Leadership and Community Protection Act (Climate Act) goal to develop 9,000 megawatts of offshore wind energy by 2035.

Italy to Award Contracts for Difference for Offshore and Floating Wind Projects, EU Greenlights EUR 35.5 Billion Renewables Subsidy Scheme – Offshore Wind

Italy will award Contracts for Difference (CfD) for fixed-bottom and floating offshore wind projects through a scheme for which the Italian government just received the EU's go-ahead. The EUR 35.5 billion scheme is comprised in a draft decree, dubbed Decree FER2, which the Italian Ministry of the Environment and Energy Security (MASE) delivered to the EU Commission earlier this year and which promotes the construction of renewable energy projects using technologies that are not fully mature or have high operating costs. The objective of Decree FER2 is to incentivise the buildout of 4.6 GW of new projects by 31 December 2028, including fixed-bottom and floating offshore wind farms, floating solar, tidal, wave and other marine energies, as well as geothermal energy, and thermodynamic solar projects.

RWE to build wind farms with capacity of 1.6 GW off German North Sea coast – RWE

RWE has made the investment decision for its Nordseecluster, involving offshore wind projects with a total capacity of 1.6 gigawatts (GW). The wind farms will be built in the North Sea, about 50 kilometres north of the island of Juist. Suppliers of the main components have already been selected for the cluster as a whole. The Nordseecluster is being implemented in two phases – Nordseecluster A and B. Nordseecluster A has a total capacity of 660 MW. Manufacturing of some key components has already started. Construction at sea is scheduled to begin next year. By the beginning of 2027, all 44 wind turbines shall be connected to the grid. Nordseecluster B will add a further 900 MW of capacity. The 60 turbines are scheduled to start commercial operation from the beginning of 2029.