

International Energy Agency's Ocean Energy Systems Technology Collaboration Programme (IEA-OES)

Contribution on the focal theme of 'Capacity Building and the Transfer of Marine Technology for the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea.'

April 2025

The **IEA Ocean Energy Systems Technology Collaboration Programme (IEA-OES)**, established in 2002, is an intergovernmental, multi-national platform operating under the framework of the International Energy Agency (IEA). It serves as an authoritative international body dedicated to advancing ocean energy technologies through research, development, demonstration, and deployment (RDD&D), with a strong focus on **capacity building and marine technology transfer**.

Comprising **21 member countries and the European Commission**, IEA-OES brings together governments, research institutions, and industry stakeholders to collaborate on the promotion and development of **waves, tidal streams, ocean currents, ocean thermal energy conversion (OTEC), and salinity gradients technologies**. One of its core missions is to foster **international cooperation** by sharing knowledge, building technical capacity, and supporting the creation of enabling environments for ocean energy worldwide.

Ocean Energy as an Enabler of Capacity Building and Technology Transfer

IEA-OES recognizes ocean energy technologies are essential in advancing a fair and inclusive energy transition, especially for coastal and island communities where energy access and sustainability are key priorities. These technologies can:

- Deliver **predictable, sustainable, and affordable electricity** in grid-connected and off-grid contexts;
- Enable **direct applications** such as seawater desalination, aquaculture, oceanographic research, and coastal protection;
- Support **energy systems integration**, including offshore hydrogen production and hybrid renewable systems;
- Reduce dependence on fossil fuels, especially in **Small Island Developing States (SIDS)** and remote regions, where energy access and affordability are pressing challenges.

Beyond technological innovation, ocean energy projects inherently promote **capacity building**, including:

- Skills development and training in marine engineering, operations, and environmental monitoring;

- Knowledge transfer between developers, regulators, and academia across countries and regions;
- Creation of new value chains and innovation ecosystems that support local job creation and infrastructure development.

Recent Contributions and Knowledge Sharing

IEA-OES has actively contributed to the dissemination of knowledge through a variety of open-access publications and collaborative initiatives. In 2024, it published the [OES-Environmental State of the Science Report](#), a landmark document summarizing global knowledge on the environmental effects of marine renewable energy. This report emphasizes the importance of science-based decision-making, international data sharing, and responsible project deployment.

In March 2025, IEA-OES also released its [Annual Report 2024](#), which includes detailed updates on international collaborative Tasks, technology developments, market insights, and policy frameworks. These resources are publicly available and designed to support knowledge exchange and engagement with emerging stakeholders worldwide.

Key takeaways from IEA-OES's participation in the [2024 International Conference on Ocean Energy \(ICOE\)](#) highlighted that a collaborative, unified approach—involving developers, policymakers, and researchers—is essential to unlocking the full potential of ocean energy and accelerating its deployment globally.

Ongoing Commitment to Global Collaboration

IEA-OES is committed to continuing its support for international dialogue and cooperation, including contributions to United Nations processes on oceans and the law of the sea. We believe that our work aligns closely with the objectives of the UN's capacity-building efforts and marine technology transfer agenda.

We welcome opportunities to engage with Member States and international organizations to share best practices, build partnerships, and contribute to sustainable and equitable ocean-based energy solutions.

For more information and access to our recent reports, please visit:

www.ocean-energy-systems.org

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