International Renewable Energy Agency (IRENA)

Input to 2019 SG report on Oceans and the Law of the Sea (RES 74/19)

As the world's lead intergovernmental organisation for energy transformation, the International Renewable Energy Agency (IRENA) is working closely with its 161 Members and 22 States in accession to promote the **widespread adoption and sustainable use of all forms of renewable energy, including offshore renewable energy.**

Oceans are a source of abundant renewable energy potential, capable of driving a global blue economy. **Energy harnessed from oceans**, **also known as offshore renewable energy**, including tidal, wave, ocean thermal energy conversion (OTEC), offshore wind and floating PV, can contribute to the decarbonisation of the energy sector in line with the objectives of the Paris Agreement, strengthen resilience efforts as well as provide economic opportunities and create jobs in coastal areas, which are among the most populated areas on the planet.

Renewable energy in general, including offshores renewables, play a key role in the **immediate response to COVID-19** by powering essential services such as health and water, as well as in the **medium and long term response** by providing range of socio-economic benefits from economic growth to new jobs. It is thus essential to ensure renewables are included in stimulus measures and economic recovery packages.

In theory, the **resource potential of offshore renewable energy** is more than enough to meet present and projected global electricity demand well into the future. Estimates for this potential range from **45 000 TWh to 130 000 TWh** of electricity per year, representing **2 to 6 times the current global electricity demand.**

Renewables can also serve as a clean power source for desalination, cooling and aquaculture, contributing to the achievement of numerous SDGs and foster the blue economy. **Shipping fueled by renewables** (biofuels, green hydrogen, synthetic fuels) can significantly contribute to decarbonization of the transport sector, as international shipping emits 2-3 percent of global greenhouse gas emissions.

IRENA supports **international cooperation, capacity building and knowledge exchange** to accelerate the deployment of offshore renewables in a way that also **protects and preserves the marine environment**. Developing countries are key beneficiaries of its assistance and capacity building activities in this area.

IRENA's activities mentioned below are relevant to paragraphs §§ 13, 54, 192, 295 and 331 of Resolution 74/19.

Offshore renewables are of great interest to Small Island Developing States (SIDS). **The SIDS Lighthouses Initiative (LHI),** coordinated by IRENA, supports SIDS in scaling up renewable energy through partnerships between public institutions, the private sector, inter-governmental and non-governmental organizations.[1] The priority action areas identified for the second phase of the LHI, launched in 2018, include promoting all renewable energy sources - placing a particular emphasis on offshore energy - as well as reinforcing links to integrate variable renewable energy, such as solar PV and wind, and non-energy sectors - including freshwater supply.

[1] https://islands.irena.org/

IRENA has formally joined the **Getting to Zero Coalition**, an alliance of more than 90 companies within the maritime, energy, infrastructure and finance sectors, supported by key governments and IGOs which was launched at the Climate Action Summit in September 2019. The Alliance is committed to getting commercially viable deep sea zero emission vessels powered by zero emission fuels into operation by 2030.

In October 2019, IRENA participated in the Global Maritime Forum Annual Summit in Singapore where the agency launched its report - **Navigating the way to a renewable future: Solutions to decarbonise shipping**.[2] This report explores the impact of maritime shipping on CO2 emissions, characterises the shipping sector and identifies various clean energy solutions with the potential to reduce the sector's carbon footprint. IRENA has held a number of meetings to raise awareness about the potential of offshore renewables, the challenges facing their deployment and the solutions needed to scale-them up:

in October 2019, IRENA organized a workshop on **'Unlocking the potential of ocean energy around the globe'** in Dublin, Ireland.[3] The event held back-to-back with the annual Ocean Energy Europe conference, gathered ocean energy experts from the private and public sector to discuss innovative designs, new business models and the technical challenges of ocean energy projects around the world, with a special emphasis on SIDS.

IRENA also organised the workshop: **'Coupling ocean energy with other sectors: Innovative business models and complementarities with renewable offshore technologies'** at the Energy3: Canada's Energy Conference in Halifax, Canada, in partnership with Marine Renewables Canada in October 2019.[4] The workshop focused on potential pathways to improve the business case for offshore renewable energy facilities through additional revenue streams from coupling those technologies with other energy sectors.

In January 2020 IRENA convened a thematic meeting **'Ocean Technologies in the Energy Transition Sectoral Update and Actions to Reach Commercialisation'** at its annual Assembly. The event provided an overview of the sector's market status, country experiences and action areas that can enable a faster commercialisation of wave, tidal OTEC and salinity gradient technologies. The event also explored innovative business models to enhance the ocean energy economic case, such as ocean energy technologies used in applications such as seawater desalination, cooling applications and aquaculture.

Together with its Member States, IRENA is working to establish an **Offshore Renewables Collaborative Framework**. By involving Governments from countries around the globe and numerous key stakeholders in offshore renewables and beyond, the platform aims at advancing in the deployment of offshore renewables by providing a global hub for international collaboration.

IRENA stands further ready to:

- Provide a **common vision on offshore renewable energy potential** and expected changes in the market.
- Help to **disseminate the offshore renewable energy project cases**
- Help facilitate international cooperation by identifying **decarbonisation synergies between marine sectors**
- Give guidance on understanding **the right supply chain for renewable offshore technologies**
- Create an **offshore renewable energy portfolio** for SIDS
- Assist countries in harnessing the **socio-economic benefits** of offshore renewable energy, particularly in terms of creation of new jobs and local economic value.

[2] https://www.irena.org/publications/2019/Sep/Navigating-the-way-to-a-renewable-future
[3] https://www.irena.org/events/2019/Sep/Unlocking-the-potential-of-ocean-energy
[4] https://irena.org/events/2019/Oct/Coupling-ocean-energy-with-other-sectors