



AN OCEAN OF POTENTIAL
Recommendations for Offshore Wind
Development in India

March 2023

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Development in India

 **GWEC INDIA**
GLOBAL WIND ENERGY COUNCIL

 **UK Government**

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BACKGROUND

In recent years, uncertainties arising from the pandemic, war, and trade disruptions around the world have reinvigorated the need for resilient growth. This includes strengthening political priorities at home and internationally for a future that is sustainable and yet ensures economic growth and shared prosperity. As per the International Monetary Fund Managing Director, the theme of India's G20 Presidency: One Earth, One Family, One Future reflects these aspirations. Earlier, in this spirit, at COP26, the Indian Prime Minister announced the "Panchamrit" of India's climate action¹. This includes five pledges – 500 GW of non-fossil fuel energy capacity by 2030; 50 percent of its energy requirements from renewable energy by 2030; reduction of total projected carbon emissions by one billion tonnes from now to 2030; reduction of the carbon intensity of the economy by 45 percent by 2030, over 2005 levels and achieving the target of net zero emissions by 2070. The attainment of the country's COP26 commitments ushers a pool of tangible and non-tangible benefits for the country, region and the world through jobs creation, climate change mitigation, environmental benefits, economic growth, and energy security. The International Energy Agency (IEA), in its Advanced Pledges Scenario (APS) has estimated over 75 percent rise in the country's power demand between 2021 and 2050.

To meet its COP commitments as well as growing power demand, India aims to exploit a basket of its rich and abundantly available renewable energy resources including offshore wind. Offshore wind deployment eradicates the need for land for generating power from ultra-MW power plants. It also improves the availability of round-the-clock (RTC) green power which is essential for decarbonization in the industrial sector as well as in the commercial sector. Additionally, meeting the emerging demand for clean power from data centers, electric mobility and green hydrogen production. As per the National Institute of Wind Energy, an autonomous institute under the Indian Ministry of New and Renewable Energy (MNRE), over 70 GW of commercially viable offshore wind potential exists off the coast of Gujarat and Tamil Nadu. In June 2022, the MNRE notified a cumulative 37 GW offshore wind seabed lease tender trajectory for 2022-2030 and aims to add 30 GW of offshore wind installed capacity in the times ahead².

¹ <https://pib.gov.in/PressReleasePage.aspx?PRID=1795071>

² <https://coe-osw.org/strategy-paper-for-establishment-of-offshore-wind-energy-projects/>

NURTURING AN OFFSHORE WIND ECOSYSTEM: PROGRESS SINCE 2021

In April 2021, GWEC published a statement of recommendations for offshore wind development in India³.

POLICY AND TENDER

- Indicative auction trajectory for a total 37 GW offshore wind capacity allocation by 2022-2030:
 - In March 2022, the MNRE released its discussion paper entitled 'Establishment of offshore wind energy projects to achieve a target of 30 GW by 2030' which outlined two models for the development of OSW projects in eight demarcated zones each off the coast of Gujarat and Tamil Nadu. This was based on the earlier FOWIND studies.
 - In July 2022, the MNRE held consultations with a range of stakeholders and later published the 'Strategy paper for establishment of offshore wind energy projects'⁴. This document comprised an indicative auction trajectory for a total of 37 GW OSW seabed lease capacity and pronounced three business models.
- In November 2022, the MNRE also notified the "Draft Tender Document for Seabed leasing for offshore wind energy projects". It comprised tender terms for seabed leasing and for undertaking studies/surveys and development of OSW offshore wind projects under Open Access/Captive/Third Party Sale model in Zones B1, B2, B3, B4 and G1 off the coast of Tamil Nadu.
- As per the Ministry of Power, the transmission system for evacuation of 10 GW offshore wind located in Gujarat and Tamil Nadu would be developed in two phases at an estimated cost of 0.28 lakh crore by 2030⁵.
- The Government of Gujarat and Government of Tamil Nadu have agreed to purchase OSW power generated off their respective coasts at a tariff of INR 4 per unit for initial projects.
- Tenders by National Institute of Wind Energy (NIWE): (1) An e-tender for supply, installation and commissioning of an integrated floating buoy for mounting LiDAR at three locations in the Gulf of Mannar, off the Tamil Nadu coast floated 2-3 times since December 2021, remains un-awarded. (2) NIWE proposed a test centre site in Dhanuskodi, Tamil Nadu, and an invitation for service providers was opened in August 2022 to conduct offshore rapid environmental impact assessment studies at the proposed 20 MW wind farm at Dhanushkodi.

³ <https://gwec.net/an-ocean-of-potential-recommendations-for-offshore-wind-development-in-india/>

⁴ https://mnre.gov.in/img/documents/uploads/file_f-1657882722533.pdf

⁵ <https://cea.nic.in/wp>

content/uploads/notification/2022/12/CEA_Tx_Plan_for_500GW_Non_fossil_capacity_by_2030.pdf



INTERNATIONAL STRATEGIC ALLIANCE

- Before 2020, two pre-feasibility studies were carried out under Facilitating Offshore Wind in India (FOWIND) 2013-18 project, conducted by a GWEC-led consortium and supported by the EU, focused on Gujarat and Tamil Nadu. Also, the First Offshore Wind Project of India (FOWPI) 2016-19 project, conducted by a COWI-led consortium and supported by the EU, assisted up to the pre-FID (Financial Investment Decision) stage for Gujarat EoI and provided capacity-building for Indian stakeholders.
- The UK and India signed a Memorandum of Understanding (MoU) on Cooperation in the Energy Sector in November 2015, after which a regular Ministerial Energy Dialogue was instituted in April 2017. The MoU was automatically renewed in 2020. Both countries have strengthened their bilateral partnership for advancing climate resilience and clean energy deployment. Climate is one of the pillars of the India-UK 2030 Roadmap. OSW is one of the key priorities as part of the “Smart Power, Renewable Energy and Storage Programme”, a joint initiative of UK and India.
- Indo-Danish Energy Partnership: A Centre of Excellence for Offshore Wind and Renewable energy has been established which has four work group projects. Under those, various reports have been published viz. Financial Modelling of Offshore Wind Farms in India (FIMOI) part 2⁶ report bundled with LCOE and VGF calculation tools, Offshore Wind Port Infrastructure study for India, Maritime Spatial Planning for Gujarat and Tamil Nadu, Conceptual plan for 15 Indian offshore wind parks⁷.

⁶ Report published in May 2022 estimated the lowest possible LCOE by 2025 and 2030 could be in the range of 11.2-7.4 INR/kWh and 7.8-5.2 INR/kWh, respectively.

⁷ <https://coe-osw.org/>;