

Standing Committee Report Summary

Evaluation of Wind Energy in India

- The Standing Committee on Energy (Chair: Mr. Rajiv Ranjan Singh) submitted its report on the 'Evaluation of Wind Energy in India' on August 2, 2022. Key observations and recommendations of the Committee are:
- **Potential of wind energy:** The Committee observed that only a fraction of the country's wind potential has been tapped. The commercially exploitable potential of wind energy in India is estimated to be more than 200 gigawatt (GW). As of May 2022, the total installed capacity of wind power was 41 GW, i.e., about 20% of the commercially exploitable potential. Reasons for slow capacity addition include: (i) shift in tariff system from feed-in-tariff (guaranteed above-market price for producers) to tariff determination by competitive bidding, and (ii) aggressive bidding by developers. The Committee observed that solar energy has been prioritised over wind energy, despite import dependence in the solar sector. From March 2014 to May 2022, the installed capacity of wind power has increased by 93% as compared to a 2064% increase in solar power. It noted that India has strong domestic manufacturing in the wind energy sector.
- **Repowering old turbines:** The Committee noted that most of the wind energy potential of India is available in eight states which include Andhra Pradesh, Gujarat, Karnataka, and Madhya Pradesh. A majority of states with wind energy potential have been exploited. The Committee recommended: (i) replacing old and less efficient turbines with advanced turbines, and (ii) formulating a policy for repowering of old turbines and issuing guidelines for recycling old turbines.
- **Change in tariff system:** Till 2017, wind energy capacity addition was through a feed-in tariff mechanism (guaranteed above-market price for producers) and subsequently, it changed to tariff determination through competitive bidding. This shift has disrupted installation of projects. There has been a transition from a relatively high tariff of Rs 4-5/unit to a more competitive tariff of Rs 2.5-3/unit. This has reduced the profitability of wind power projects. The Committee observed that under the bidding mechanism, the size of wind power projects has increased and they are awarded to large independent power producers/developers. Some developers resort to aggressive bidding, thus decreasing prices to unsustainable levels and eventually back out of the project. The Committee recommended provisions for a heavy penalty on developers backing out unilaterally and blacklisting persistent defaulters.
- **Solar-wind hybrid projects:** The National Wind Solar Hybrid Policy, 2018 provides for promoting large grid-connected wind-solar energy projects. Wind-solar hybrid projects with a capacity of 4,250 megawatt (MW) have been awarded, of which 201 MW have been commissioned as of February 2022. The Committee noted that wind and solar energy are complementary to each other as solar power is harnessed during the day and wind power projects are productive during the night. It recommended promoting setting up of wind-solar hybrid projects to harness the installable potential of more than 50 GW.
- **Non-payment by distribution companies:** As of November 2021, the Indian Renewable Energy Development Agency had disbursed loans worth Rs 18,620 crore for 746 wind power projects, with non-performing assets (NPAs) of about Rs 600 crore. The Committee observed that one of the reasons for the NPAs is the non-payment of dues by distribution companies (discoms). As of March 2022, a payment of Rs 14,247 crore to wind energy developers was overdue.
- **Renewable Purchase Obligation (RPO):** The Tariff Policy, 2016 requires discoms to purchase a certain percentage of electricity from renewable energy (RE) sources. A discom can meet the RPO target by setting up its own RE plant, purchasing power from any RE generator, or purchasing renewable energy certificates. The Committee observed that only four states- Himachal Pradesh, Karnataka, Andhra Pradesh, and Tamil Nadu have fulfilled the RPO target of 19% as per the National RPO trajectory for 2020-21. It recommended the ensuring RPO compliance by all states and enforcing penalties against defaulting entities.
- **Offshore wind power:** The Committee noted that offshore wind energy (wind energy projects in water bodies) potential was estimated to be about 70 GW off the coast of Gujarat and Tamil Nadu. However, no project has been established in these states. Offshore wind energy has higher capacity utilisation factor than onshore projects and its cost decreases with increase in installed capacity. The Committee recommended exploring offshore wind potential in different coastal areas of India.

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