Indian Renewable Energy Sector

Large project pipeline and favourable module pricing to improve capacity addition to 25 GW in FY2025

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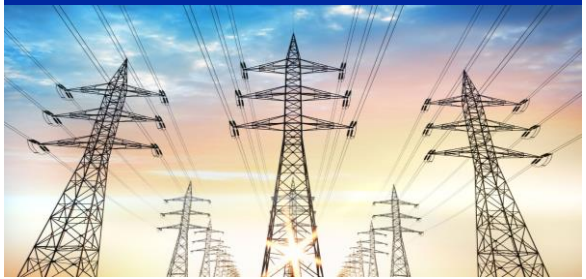

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Highlights - I

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RE capacity addition improved to 18.5 GW in FY2024 from 15.3 GW in FY2023 led by decline in solar PV module prices and ALMM exemption

Tendering pipeline remains strong in line with the 50-GW annual bidding trajectory

- **ICRA's outlook for the renewable energy (RE) sector remains Stable**, led by strong policy support from the Government of India, superior tariff competitiveness and sustainability initiatives by large commercial and industrial (C&I) customers. However, challenges remain on the execution front, distribution utility finances, exposure to equipment prices, supply chain concerns on equipment availability and cost of capital.
- **The sector witnessed a capacity addition of 18.5 GW in FY2024**, improving from 15.3 GW added in the previous year. While the capacity addition was lower in 11M FY2024, March 2024 saw a significant jump with 7.1 GW being added. This was led by the solar power segment, supported by the sharp decline in solar photovoltaic (PV) cell and module prices and the exemption from the order on Approved List of Models & Manufacturers (ALMM) available till March 31, 2024.
- **RE capacity addition is likely to scale up to 25 GW in FY2025 from 18.5 GW in FY2024**, supported by the large project pipeline of 89 GW as per the latest status report from Central Electricity Authority (CEA), favourable module pricing and the impending expiry of waiver on inter-state transmission system (ISTS) charges in June 2025. Apart from the scale-up in tendering, timely signing of the power purchase agreements (PPAs) and their execution thereafter remain important to achieve the scale-up in RE capacity.
- **The tendering pipeline in the RE sector remains large** with 6.2 GW auctioned in Q1 FY2025 so far and another 20 GW under tendering by central nodal agencies and state utilities as of June 2024. Within these tenders, the Central nodal agencies have issued tenders for 4.6-GW capacity for firm and dispatchable RE (FDRE) supply, which necessitates oversizing the RE capacity by 3-4x along with a component of storage, taking the overall capacity under tendering to over 30 GW.
- **The prices of the mono PERC modules remain low,** declining to 10-11 cents/watt in June 2024 from 11-12 cents/watt in March 2024, which reduced from the high of 27-28 cents/watt seen in Q4 FY2022. Also, the cell prices have declined to 4 cents/watt in June 2024 from 5-6 cents/watt in Q4 FY2024, which declined from the peak of 16-17 cents/watt in December 2022. This has been led by improved supplies across the value chain, moderation in demand from Europe and restriction on Chinese imports by the US.

Highlights - II

ALMM order has been reinstated from April 1, 2024, requiring sourcing of modules from domestic OEMs

Bid tariffs for BESS projects witnessed a significant decline in recent bids led by the decline in battery prices; this remains positive for discoms looking to adopt storage systems

- **The Government has reinstated the order on the ALMM from April 1, 2024,** requiring sourcing of modules from domestic original equipment manufacturers (OEMs), thereby increasing the cost of module sourcing for developers in relation to direct imports. Nonetheless, the significant increase in domestic module manufacturing capacity and favourable solar PV cell prices are expected to enable developers to source modules at a competitive rate. Moreover, solar power projects with prevailing bid tariffs are expected to achieve adequate debt coverage metrics based on the module sourcing cost from domestic OEMs.
- **Solar and wind bid tariffs remain highly competitive**. Moreover, the tariffs discovered in the bids for round-the-clock (RTC) supply from RE projects remain highly competitive against the cost of generation from conventional sources. While the tariffs discovered in the first FDRE tender by SECI were high at Rs. 5.6/unit owing to the stringent bid conditions and low participation, this subsequently reduced to Rs. 4.7/unit in the FDRE tender by NTPC.
- **Quoted bid tariffs for battery energy storage systems (BESS) witnessed a significant decline,** with the tariff coming down from Rs. 10.84 lakh/MW/month in the first SECI tender in August 2022 to Rs. 4.49 lakh/MW/month in March 2024 and further to Rs. 3.73 lakh/MW/month in June 2024. The last two tenders were issued by Gujarat utilities. This was led by the decline in battery prices globally. The same remains positive for discoms looking to adopt storage systems.
- **Tariff competitiveness of energy storage using BESS has shown a significant improvement in the recent past,** driven by the decline in battery prices. While this would improve the adoption of BESS for short term storage, pumped storage hydro projects (PSP) would remain the key source for longer duration storage. While the execution risks and gestation period for BESS projects remain lower than PSP hydro, the PSP projects have the advantage of a much longer life and suitability for longer duration storage.
- **The ratio of upgrades to downgrades remains high** in the RE sector led by solar power IPPs. In FY2024, the sector witnessed 20 upgrades and three downgrades. The upgrades were led by change in parent credit profile, change in rating approach with the presence of a surplus cash-sharing arrangement, project commissioning, demonstration of generation performance, and favourable debt refinancing.

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