PRESS RELEASE

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Grid and storage readiness to drive the next phase of renewable energy growth; aggressive BESS bidding to keep project economics under check: ICRA

- Project pipeline remains strong with more than 150 GW of projects under construction as on June 30, 2026 even as bidding activity slows; however, curtailment concerns underscore the need for expansion in transmission network and storage capacity

Rating agency ICRA estimates the share of generation from the renewable energy (RE) capacity, including large hydro, to cross 35% by 2029-30 from 22% in 2024-25. While the bidding activity has witnessed a slowdown amid challenges in the signing of the power purchase agreements (PPA) and power sale agreements (PSA), as well as delays in ramp-up of the transmission capacity, the renewable power pipeline remains healthy with more than 150 GW of projects under construction as on June 30, 2026, which are likely to drive the capacity additions in the near-to-medium term. As the transmission infrastructure has lagged the growth in generation capacity, there have been issues pertaining to curtailments, especially for projects running on temporary general network access (T-GNA). Thus, timely completion of the transmission projects and scale-up of the storage capacity remain critical to sustain the pace of capacity addition.

Scaling up the share of generation from the RE capacity is contingent on the extent of implementation of the ongoing project pipeline (where the projects are bid out and the PPAs are signed), development of adequate transmission connectivity infrastructure and timely bidding for new RE projects, along with signing of the PPAs by central nodal agencies. Following the award of a sizeable RE capacity of 40.6 GW in 2024-25, the bidding activity slumped with only 14.7 GW capacity awarded in 2025-26 and the same continued in the current year with 4.7 GW awards till August 10, 2026. Further, the unsigned PPA capacity remained sizeable at 40-45 GW as of April 2026.

Commenting on these bidding trends and grid adequacy, **Girishkumar Kadam, Senior Vice President & Group Head - Corporate Ratings, ICRA**, said: *"While the bidding activity has moderated, a notable feature is decline in the bids for normal solar and wind and more focus on firm and dispatchable renewable energy (FDRE) and round the clock (RTC) power. Moreover, the latest tender by the Solar Energy Corporation of India (SECI) stands out, as it follows the trend of thermal power to deliver a demand-based supply. The discovered tariff of Rs. 5.25/unit for this tender is lower than most of the new thermal plants (above Rs. 6.00/unit, exposed to fuel cost escalation). Further, the RE capacity addition is impacted by concerns over transmission connectivity infrastructure as increasing episodes of grid curtailments affect project returns. Around 37% of the capacity at the impacted substations in North, West and South operates under T-GNA and faces curtailment of 30-50% during solar hours. Hence, timely execution of intra-state and inter-state transmission infrastructure and enhancement of storage capacity will be critical to protect project economics and sustain the pace of capacity addition, as the ramp up in the share of renewables in the generation mix."*

Storage is likely to emerge as an important enabler for grid stability. Decline in battery costs over the past decade has helped reduce the cost of energy storage, which coupled with the availability of

viability gap funding and extended transmission charge waivers till June 2028, have given an impetus to battery energy storage system (BESS) adoption in India. With a significant increase in project awards in the last 12-18 months, the total capacity awarded, including under construction and operational capacity stood at around 90 GWh as of June 2026. Based on the prevailing battery costs, ICRA estimates that the levelised cost of storage using BESS for 2-4 hours of storage is relatively higher, in the range of Rs. 4.0-7.0 per unit, compared to Rs. 5.0 per unit for pumped storage hydropower (PSP) projects. While BESS costs for four hours of storage remain higher than PSP, the execution risks and gestation period for the BESS projects are relatively lower.

Commenting further on the competitiveness of standalone BESS projects, **Kadam** said: *"The viability of the BESS projects remains critically linked to their capital cost. Based on the average battery cost of ~$70-75/KWh seen in the recent past, along with associated taxes/duties and cost of the balance of plant, the capital cost is estimated in the range of $110-130/KWh. However, expectations of a further decline in battery prices has led to aggressive bidding activity in the standalone storage tenders. Nevertheless, the reversal in price trends coupled with rupee depreciation against the dollar impacted the economics of some of these projects. At prevailing capital costs and interest rates, the cumulative debt service coverage ratio (DSCR) for some of the previously bid standalone BESS projects appears to be under pressure, with values in the range of 0.80-1.20 times. While there has been some restoration of pricing power in the recent tenders, the ability of BESS projects to adhere to performance parameters such as availability, round trip efficiency, depth of discharge and degradation remain key monitorables, given the limited track record."*

ICRA's outlook for the RE sector remains **Stable**, led by strong policy support, superior tariff competitiveness and sustainability initiatives by large commercial and industrial customers. Further, the new tenders are aimed at providing firm power round the clock, which also mitigates the intermittency associated with plain solar or wind assets. However, execution challenges remain, including land acquisition, transmission infrastructure availability, delays in PPA signing, and the financial health of distribution utilities.

The ratio of credit rating upgrades to downgrades remains high in the RE sector. In 2025-26, the sector witnessed 72 upgrades and 21 downgrades while in Q1 2026-27, the sector saw four upgrades and no downgrades. The upgrades were primarily led by successful project commissioning along with demonstration of sustained generation performance, favourable change in ownership and improvement in the credit profile of the parent. The downgrades were led by weaker-than-expected generation performance, delays in project commissioning and increase in leverage levels for a holding company to fund its equity component, adversely impacting its ratings and consequently its subsidiaries.

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