



# Indian Renewable Energy Sector

---

**Bidding pipeline remains strong with focus on FDRE and energy storage projects**

**SEPTEMBER 2024**



## 1 Highlights



## 2 Outlook



## 3 Capacity Addition Trends & Key Demand Drivers



## 4 RE Capacity Requirement and National Electricity Plan (NEP)



## 5 Bidding Trends & Capacity Estimates



## 6 Module Pricing Trends



## 7 Tariff Trends & Viability



## 8 Analysis of FDRE Projects



## 9 Key Policy & Regulatory Updates



## 10 Counterparty Credit Risk



## 11 Performance of Key IPPs



## 12 Rating Trends in Renewable Energy Sector





## Highlights

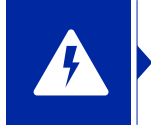
---



[Click to see full report](#)

*RE capacity addition improved to 9.0 GW in 5M FY2025 from 6.4 GW in 5M FY2024 led by a large project pipeline and low solar PV module prices.*

*The tendering pipeline remains strong driven by FDRE / RTC projects in line with the 50-GW annual bidding trajectory, with tendering activity expected to pick-up in the standalone storage segment.*



- **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, including land and transmission infrastructure, exposure to equipment prices and availability and distribution utility finances.



- **The sector saw a capacity addition of 9.0 GW in 5M FY2025**, which was higher by 42% than the 6.4-GW added in the corresponding period of previous year. Earlier in FY2024, the capacity addition improved to 18.5 GW from 15.3 GW in FY2023, driven by the large addition of 7.1 GW in March 2024. 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 the 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 84 GW as per the latest status report from the 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 increase in RE capacity.



- **The tendering pipeline in the RE sector remains large** with 19.3 GW auctioned in H1 FY2025 so far and another 26 GW under tendering by Central nodal agencies and state utilities as of September 2024. Within these tenders, the nodal agencies have issued tenders for 11.3-GW capacity for firm and dispatchable RE (FDRE) supply, which necessitates oversizing the RE capacity by 2.5-3.5x, along with a component of storage, taking the overall capacity under tendering to over 45 GW.



- **The prices of the mono PERC modules continue to remain low at 10 cents/watt since June 2024** from the high of 27-28 cents/watt seen in Q4 FY2022 and lower than 23-24 cents/watt seen in December 2022. **Also, the cell prices have declined to 4 cents/watt since June 2024** 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.

*The ALMM order has been reinstated from April 1, 2024, requiring sourcing of modules from domestic OEMs. Solar PV cells are proposed to be included in the ALMM from April 1, 2026*

*Bid tariffs under the FDRE / RTC projects remain competitive compared to conventional sources. This has been supported by low module prices and decline in BESS costs.*



- **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 prices will enable developers to achieve adequate debt coverage metrics. Further, the Government has proposed to include solar PV cells under the ALMM, with effect from April 1, 2026, which necessitates a significant scale-up in solar PV cell manufacturing capacity.
- **Solar and wind bid tariffs remain highly competitive.** Moreover, the tariffs discovered in the bids for round-the-clock (RTC) and firm and dispatchable supply from RE (FDRE) projects remain highly competitive in contrast to the cost of generation from conventional sources. The tariffs discovered in these FDRE tenders largely vary between Rs. 4.0/unit and Rs. 5.0/unit, depending on the conditions for supply.
- **Quoted bid tariffs for battery energy storage systems (BESS) witnessed a significant decline**, with the cost reducing 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. 3.81 lakh/MW/month in September 2024. The recent decline in battery prices has improved the cost economics for the BESS projects, which is likely to aid the scale-up in tendering activity for standalone storage projects and improve their adoption.
- **The SECI issued the first tender in September 2024 for the 500 MW offshore wind power project in Gujarat** as per the guidelines issued for implementation of the Viability Gap Funding (VGF) scheme for 1 GW offshore wind power projects in Gujarat & Tamil Nadu with an outlay of Rs. 6853 crore. Also, the Government issued draft tariff-based competitive bidding norms for procurement of storage capacity from pumped storage plants (PSP) in August 2024. This will help promote PSP projects, which is a key source for longer duration energy storage.
- **The ratio of upgrades to downgrades remains high** in the RE sector led by solar power IPPs. In 5M FY2025, the sector witnessed 15 upgrades and six downgrades. The upgrades were led by successful project commissioning, favourable change in ownership, healthy generation performance, reduction in receivable position and improvement in parent credit profile.



ICRA

# Analytical Contact Details

Name	Designation	Email	Contact Number
Girishkumar Kadam	Senior Vice-President & Group Head	<a href="mailto:girishkumar@icraindia.com">girishkumar@icraindia.com</a>	022 – 6114 3441
Vikram V	Vice-President & Co-Group Head	<a href="mailto:vikram.v@icraindia.com">vikram.v@icraindia.com</a>	040 – 6939 6410
Rachit Mehta	Vice-President & Sector Head	<a href="mailto:rachit.mehta2@icraindia.com">rachit.mehta2@icraindia.com</a>	022 – 6169 3328





ICRA

# Business Development/Media Contact Details

Name	Designation	Email	Contact Number
L Shivakumar	Chief Business Officer	<a href="mailto:shivakumar@icraindia.com">shivakumar@icraindia.com</a>	022-61693304
Neha Agarwal	Head – Research Sales	<a href="mailto:neha.agarwal@icraindia.com">neha.agarwal@icraindia.com</a>	022-61693338
Rohit Gupta	Head Business Development – Infrastructure Sector	<a href="mailto:rohitg@icraindia.com">rohitg@icraindia.com</a>	0124-4545340
Vivek Bhalla	Head Business Development – Financial Sector	<a href="mailto:vivek.bhalla@icraindia.com">vivek.bhalla@icraindia.com</a>	022-61693372
Vinita Baid	Head Business Development – Corporate Sector - West & East	<a href="mailto:vinita.baid@icraindia.com">vinita.baid@icraindia.com</a>	033-71501131
Shivam Bhatia	Head Business Development – Corporate Sector - North & South	<a href="mailto:shivam.bhatia@icraindia.com">shivam.bhatia@icraindia.com</a>	0124-4545803
Naznin Prodhani	Head – Group Corporate Communications & Media Relations	<a href="mailto:communications@icraindia.com">communications@icraindia.com</a>	0124-4545860







***© Copyright, 2024 ICRA Limited. All Rights Reserved.***

All information contained herein has been obtained by ICRA from sources believed by it to be accurate and reliable. Although reasonable care has been taken to ensure that the information herein is true, such information is provided 'as is' without any warranty of any kind, and ICRA in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness or completeness of any such information. Also, ICRA or any of its group companies, while publishing or otherwise disseminating other reports may have presented data, analyses and/or opinions that may be inconsistent with the data, analyses and/or opinions in this publication. All information contained herein must be construed solely as statements of opinion, and ICRA shall not be liable for any losses incurred by users from any use of this publication or its contents.



ICRA

**Thank You!**