

# Electric Utilities

India

Sector View: **Attractive** NIFTY-50: **20,990**

December 11, 2023

## Renewable forum: Entering the mega investment cycle

We hosted Mr Vinay Rustagi (Global Head of renewables, CRISIL), Mr Kailash Vaswani (CFO, Renew Power) and Mr Kapil Maheshwari (CEO, Welspun New Energy) at our renewable forum. Emphasizing the importance of renewable energy, panelists acknowledged the need for an accelerated pace of investment. The improved pace of auctioning (50 GW in FY2024E) and falling module prices were the key positives, while the absence of cost-effective storage solutions was considered a key impediment to the rapid adoption of renewable power.

### 500 GW renewable capacity target by 2030; storage solutions paramount

India has steadily improved its renewable capacity to 179 GW as of October 2023 (including 47 GW of large hydro capacities), although the pace of addition has been slow in recent years. The government is targeting 500 GW of renewable capacity by FY2030E—while the key players have lined up impressive plans to set up renewable capacities, execution has been patchy so far. The government has improved renewable auctioning from ~15 GW annual run-rate to 20GW for YTD FY2024, with plans to achieve 50 GW of annual auctions for FY2024. One of the panelists highlighted the historically poor conversion ratio (40%) from auction to commissioning. Storage solutions (PSP) for renewable power are in the implementation stage, but completion could be 5-6 years away—an important missing piece that is needed to ensure a higher share of generation from renewable sources.

### Improving tariffs and falling module costs may attract new players

Renewable tariffs have gradually improved over the quarters and are now trending around ~Rs2.75/unit. Steady realizations, coupled with lower module costs following the spike in 2022 (due to the geopolitical challenges), imply an improving profitability profile. Most renewable projects currently operate at 70-80% leverage and offer equity IRRs of 12-14%. Improving return profiles mean that the sector could attract new competition from new entrants, implying that the tariffs could see some downward pressure in the future. India currently has 6.6 GW/38 GW of cell/module capacity, which it plans to increase to ~60 GW/110 GW by 2026E, while also adding 38GW/56 GW of polysilicon/wafer capacity. Module prices have moderated to ~US\$0.25/watt recently (domestic manufacturing), while imported modules/cells cost 10-20% higher due to the imposition of duties.

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**Higher investments needed for renewable ambitions**

Renewable capacity addition in India has been slow in recent years (~15 GW annually), which needs to pick up to 40-50GW annual run-rate. This, along with storage and cell/module facilities, would entail large investments to spur growth in the sector. While key players have large plans to set up new capacities, the implementation would be key given the slow track-record in the past. The upcoming investment cycle keeps us positive on the sector.

**Improved auction volumes, including higher share for hybrid auctions with lower competition/higher tariffs**

**Exhibit 1: Renewable energy auction volumes and target (GW)**

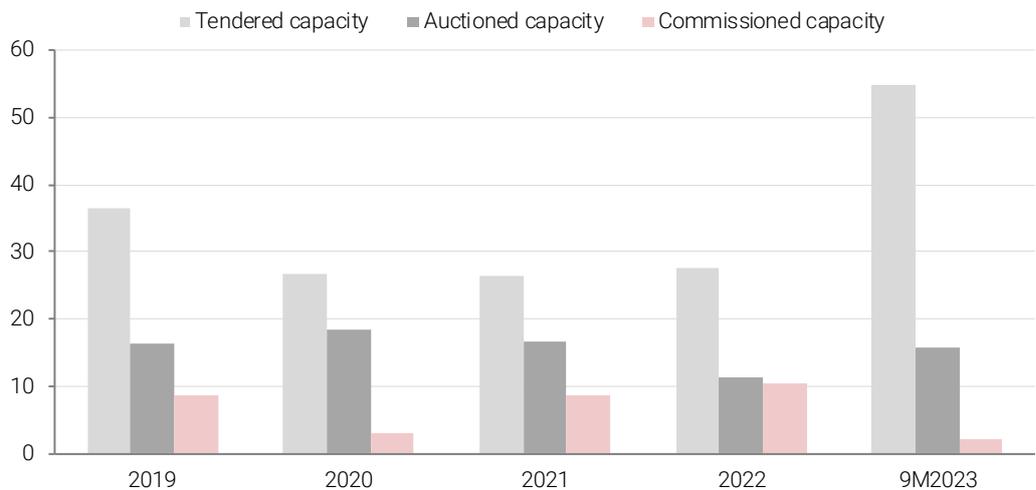


Note:  
(a) CY data until 2021, FY data from 2022.

Source: Renew Power, Tata Power, BNEF- India's Renewable Energy Auctions 2022 Roundup, BTI RE Navigator, Kotak Institutional Equities

**Low tender conversion into commissioned capacities**

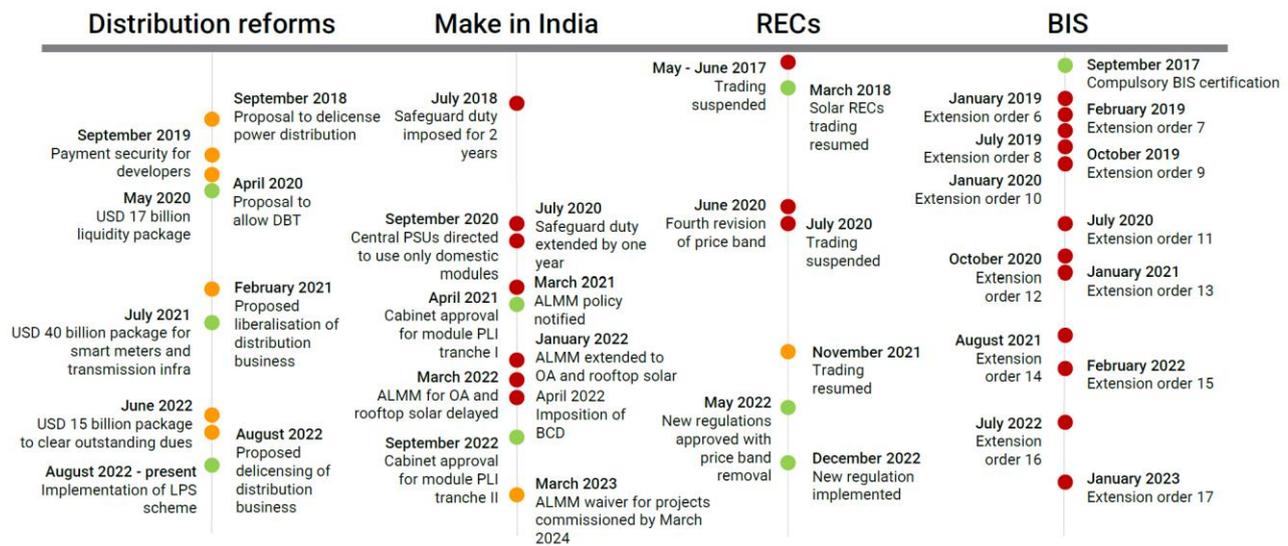
**Exhibit 2: Tendered, auctioned and commissioned capacity, Calendar year-ends, 2019-9M23 (GW)**



Source: Bridge to India, Kotak Institutional Equities

**Multiple policy measures introduced in the power sector over the years, although there has been a lack of stability & visibility**

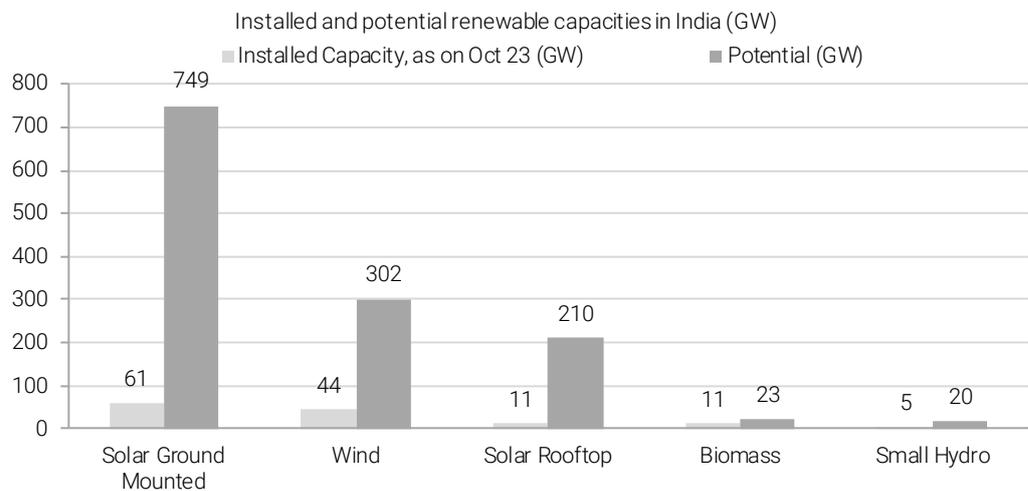
Exhibit 3: Policy measures/reforms in the power sector



Source: Bridge to India, Kotak Institutional Equities

**Large potential for renewable capacities in India**

Exhibit 4: Installed and potential renewable capacities in India, October 2023 (GW)



Source: MNRE, Tata Power, Kotak Institutional Equities

**Grand plans to add renewable capacities, execution would be key to watch**

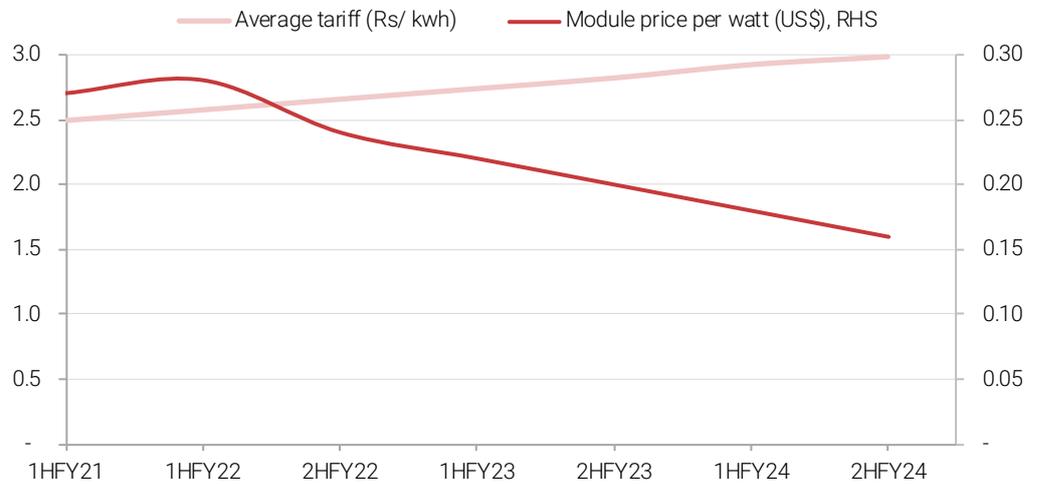
**Exhibit 5: Current, under-construction/pipeline and future capacity across key players (MW)**

(MW)	Current capacity			Under-construction / pipeline capacity (4-5 years)				Future plans			
	Thermal	Hydro	Renewable	Thermal	Hydro	Renewable	Comments	Thermal	Hydro	Renewable	Comments
NTPC	66,785	3,725	3,314	8,500	2,255	16,708		11,200		40,000	By 2032
NHPC		6,971	126		9,314	1,135	2800 MW by FY2026 (Subansiri + Parbati II), longer timelines for balance hydro		8,802		Within next 10-15 years
Tata Power	8,860	880	4,641			3,760				10,719	By 2030 (5,719 MW by 2027)
JSW Energy	3,158	1,391	2,222	700	240	2,081				10,208	By 2030
CESC	2,143									3,000	Enabling resolution passed
Adani Power	15,250			1,600			By June 2027	4,300			
Adani Green			8,300			12,000				25,000	By 2030
SJVN		1,912	180	1,320	1,618	1,500		660	11,452	37,173	Pre-construction + projects under S&I + projects under allotment. Targets: 12 GW by 2026, 25 GW by 2030, 50 GW by 2040
Reliance Power	9,720		185	3,960	3,438		All stranded				
Renew Power			8,295			5,461					

Source: Bridge to India, Kotak Institutional Equities

**Gradually improving tariffs, along with declining module prices, to support margin improvement**

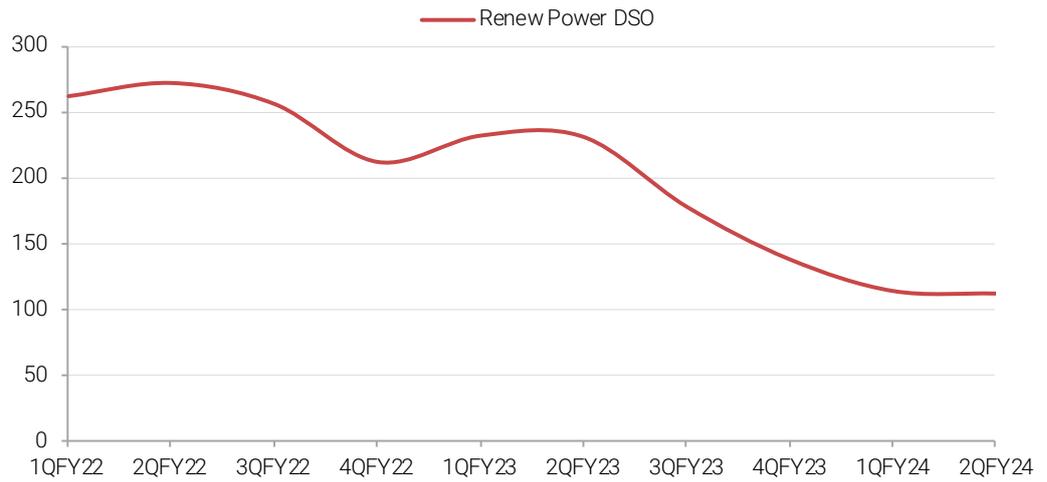
**Exhibit 6: Average renewable tariff and module price per watt, March fiscal year-ends, 1HFY21-2HFY24E (Rs/ kwh, US\$/ watt)**



Source: Kotak Institutional Equities

**A higher share of offtake by the Central Government has implied steady reduction in DSO for generating companies**

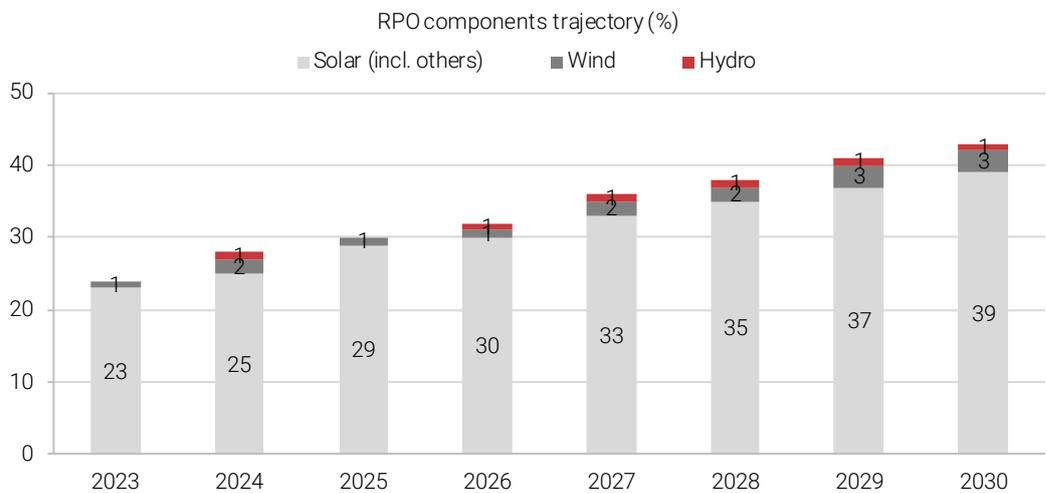
**Exhibit 7: Days Sales Outstanding for Renew Power, March fiscal year-ends, 1QFY22-2QFY24**



Source: Renew Power, Tata Power, BNEF- India's Renewable Energy Auctions 2022 Roundup, BTI RE Navigator, Kotak Institutional Equities

**The Electricity Amendment Bill has mandated RPOs; monetary penalties for non-compliance**

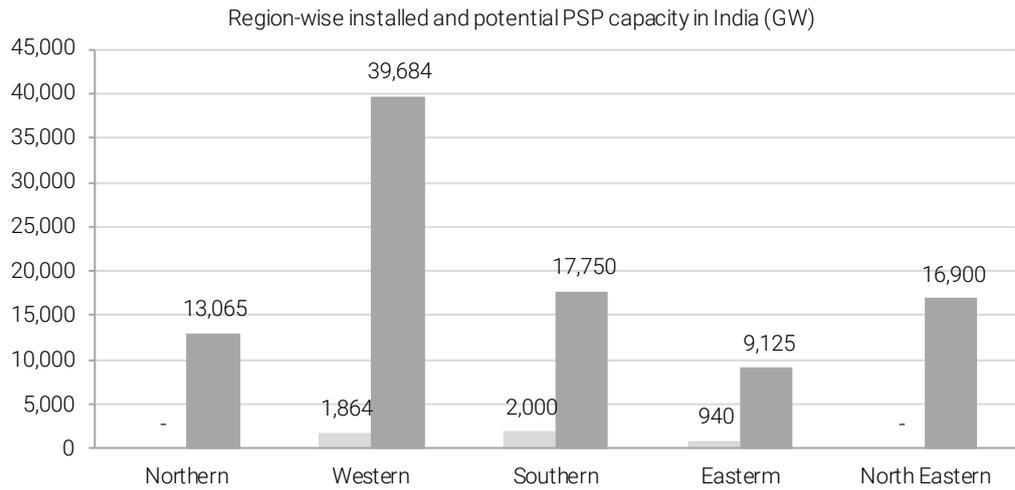
**Exhibit 8: RPO component trajectory, March fiscal year-ends, 2023-30E (%)**



Source: Ministry of Power, Tata Power, Kotak Institutional Equities

**Large potential for setting up PSP projects in India**

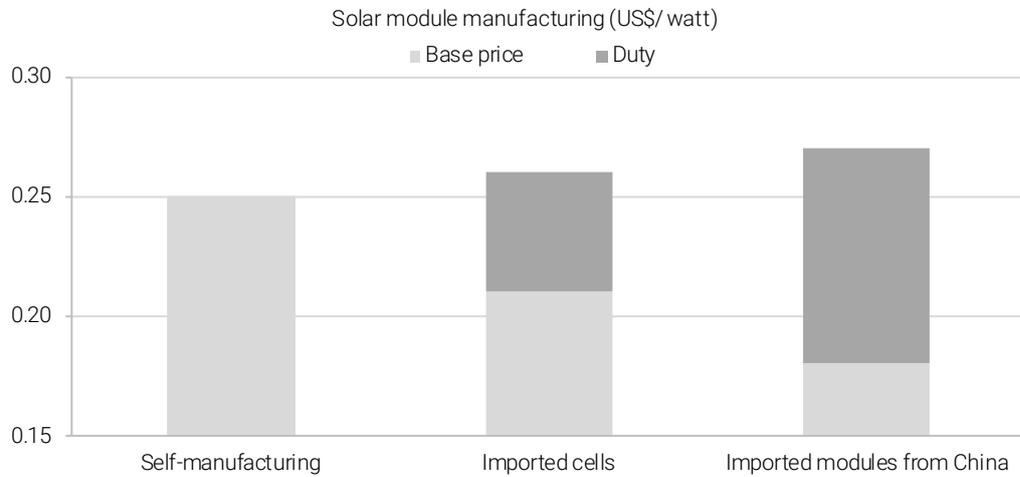
**Exhibit 9: Region-wise installed and potential PSP capacity in India (GW)**



Source: CEA, Tata Power, Kotak Institutional Equities

**Domestic module manufacturing a more economical alternative to importing**

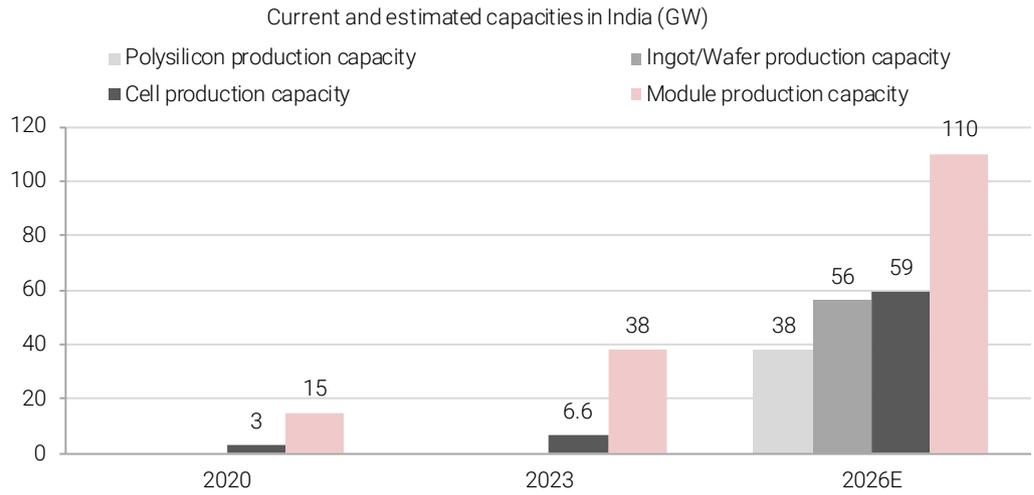
**Exhibit 10: Economics of manufacturing Solar modules as of June 2023 (US\$/watt)**



Source: CEA, Renew Power, Kotak Institutional Equities

**110 GW of module production capacity expected by 2026E**

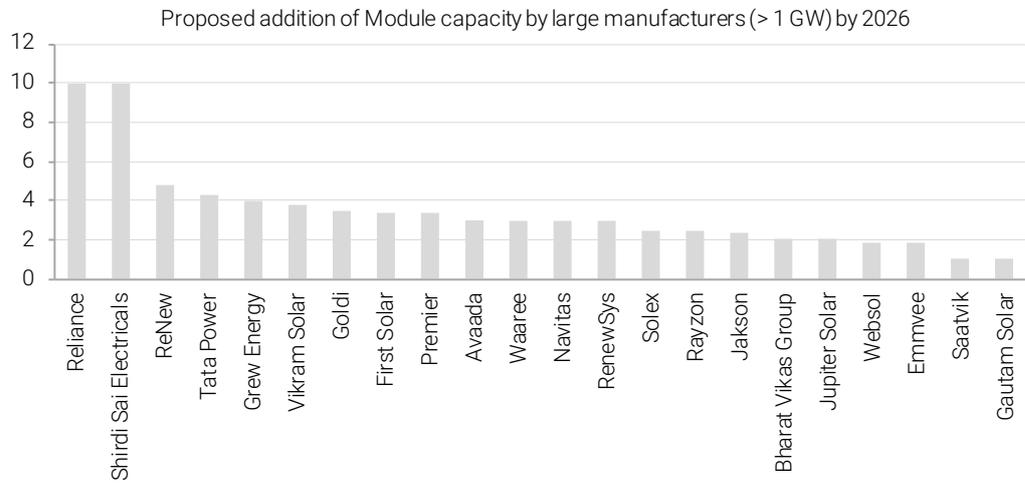
**Exhibit 11: Current and estimated capacities in India (GW)**



Source: Tata Power, Kotak Institutional Equities

**Over 70 GW of module capacity to be added by key players in India**

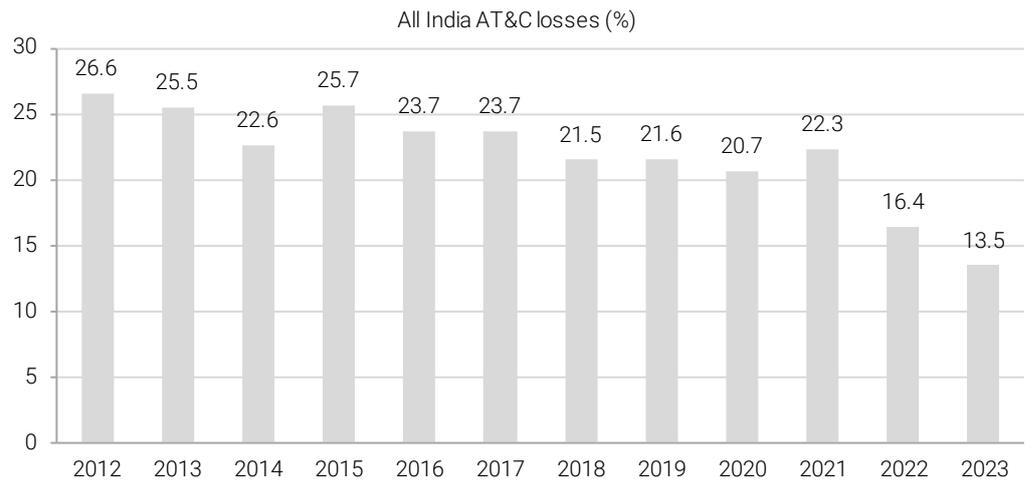
**Exhibit 12: Proposed addition of Module capacity by large manufacturers (> 1 GW) by 2026, (GW)**



Source: Renew Power, Tata Power, BNEF- India's Renewable Energy Auctions 2022 Roundup, BTI RE Navigator, Kotak Institutional Equities

**Multiple reforms such as LSP and smart meters have led to a steady reduction in AT&C losses, though the scope for further reduction is still large**

**Exhibit 13: Trend in all India AT&C losses, March fiscal year-ends, 2012-23 (%)**



Source: CEA, Tata Power, Kotak Institutional Equities

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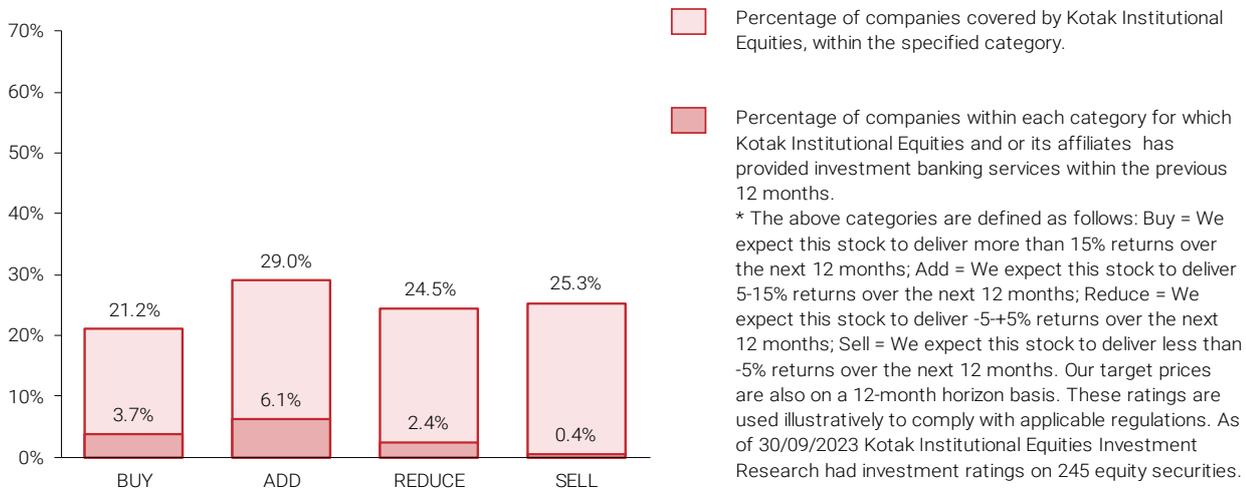
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Source: Kotak Institutional Equities

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