Utilities & Power Equipment

Transition Tracker #21

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Energy consumption/ peak demand in Feb'25 stood at 131BU (3%YoY)/ 238GW (7%YoY). Power generation (conventional) was 121BU in Feb'25 (2% YoY) as demand was supported by hydropower (6.9 BU in Feb'25) which grew 17% YoY. Maintaining the momentum 3,998 MW of new RE tenders were issued. Upto Feb'25, 20,752MW of Solar capacity and 2,702MW of Wind capacity were added, taking the cumulative RE capacity to 168 GW (excl. large hydro). Utilisation (PLF) of coal-fired and gas-fired plants stood at 73% and 9% during Feb'25 vs. 71% and 13% during Feb'24. Wind / Solar capacity addition in Feb'25 was 223MW/ 2236MW (21%/ 1.8x YoY). Net thermal capacity addition during YTDFY25 stood at 4.4GW with addition of 1.3GW/1.5GW/1.7GW thermal capacity in Dec'24/ Jan'25/ Feb'25 respectively. Here, we present a collection of 52 charts/exhibits representing important data points that help us track energy transition in India.

- **Power demand:** Energy/ peak power demand in Feb'25 stood at 131BU (3% YoY)/ 238GW (7% YoY). With this, YTDFY25 Energy/ Peak demand stands at 1,548 BU/ 250 GW, 3.4%/2.7% YoY. However, in first three weeks of Mar'25 weekly energy demand/ peak demand was up ~7%/ ~5% indicating a likely rebound in ensuing months.
- **Generation:** Total power generation (conventional) was 121 BU in Feb'25 (2% YoY). Hydro generation during Feb'25 was 6.9BU (+17% YoY) due to better hydrology as compared to last year but was down -6% MoM. RE generated 19BU (-12% MoM/ 3% YoY) with increase in solar and decrease in wind generation by +1%/-28% MoM.
- **Renewables momentum continues:** In Feb'25, a total of 3,998 MW of RE tenders were issued. SECI floated a 500 MW utility-scale solar project, while NGEL invited bids for a 110 MW wind project in Gujarat. In the battery energy storage system (BESS), multiple tenders were floated: 500 MW/1000 MWh NHPC in Andhra Pradesh, 500 MW/1000 MWh NVVN in Rajasthan, 250 MW/1000 MWh NVVN Pan India, and 375 MW/1500 MWh SJVN in Uttar Pradesh. A total of 1,286 MW of RE capacity was allocated to various developers. SJVN auctioned its 1,200 MW ISTS-connected FDRE tender, with 448 MW awarded to five developers at the tariff of INR 4.82/kWh. SECI's 125 MW/500 MWh standalone BESS tender was awarded to JSW Energy.
- **Capacity addition:** In YTDFY25, about 20,752 MW of Solar capacity and 2,702MW of Wind capacity were added, taking the cumulative RE capacity to 167.7 GW (excl. large hydro). Wind capacity addition in Feb'25 was at 223MW vs. 185MW in Feb'24 due to challenges related to land and connectivity. Solar capacity addition is gaining traction with addition of 2,236MW (1.8x) capacity in Feb'25. YTDFY25 net thermal capacity addition stood at 4.4GW with addition of 1.3GW/1.5GW/1.7GW Thermal capacity in Dec'24/ Jan'25/ Feb'25 respectively. There was no hydro capacity addition for YTDFY25.
- **Merchant tariff moderated:** WAvg Market Clearing Price (MCP) on the exchange stood at INR 4.38/kWh in Feb'25 (purchase/ sell/ cleared volume 9678/10335/5409GWh) vs. INR 4.9/kWh in Feb'24 (purchase/ sell/ cleared volume 7773/8776/4742GWh) due to subdued power demand in Feb'25.
- **Utilisation (PLF) remained subdued:** The PLF of coal-fired and gas-fired plants stood at 73% and 9% during Feb'25 vs. 71% and 13% during Feb'24.
- **Coal production growth:** Coal production in Feb'25 was 98MT, 4% YoY taking YTDFY25 production to 929MT, 5% YoY. Coal dispatches in Feb'25 was 86MT, 5% YoY taking YTDFY25 dispatches to 929MT, 5% YoY.
- **Solar input material cost mostly stabilized:** Price for global mono PERC modules are at USD 0.08/Wp (-30% YoY) in Feb'25. Prices for domestic modules for Mono PERC 500Wp/ Bifacial Modules/ Topcon Modules stood at INR 17.5/Wp / INR 17.5/Wp / INR 18.5/Wp showing signs of traction after hitting low of INR 13.5/Wp / INR 14.2/Wp / INR 15.5/Wp in Sep'24.

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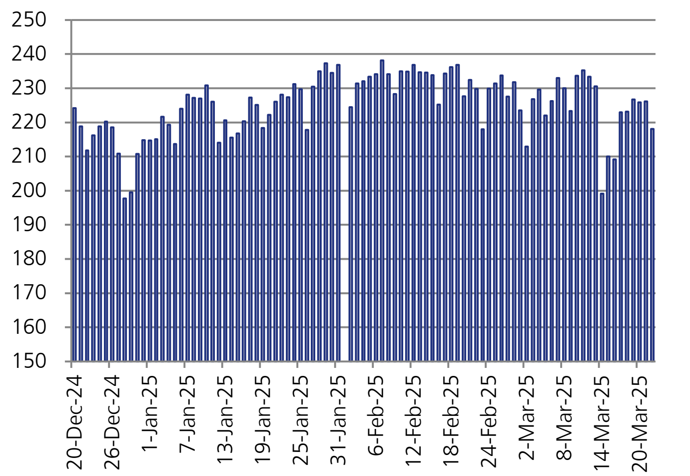
Power Demand

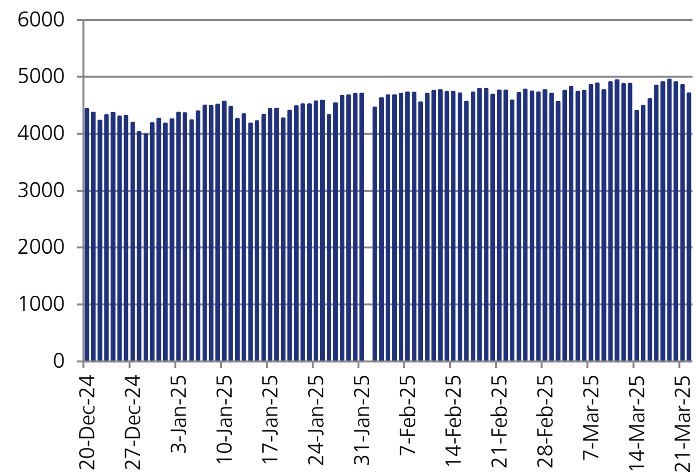
- The power consumption in Feb'25 was 131BU, 3% YoY. The peak demand met reached 238GW; higher than 237GW recorded in Jan'25.

Exhibit 1. Peak demand (GW), daily



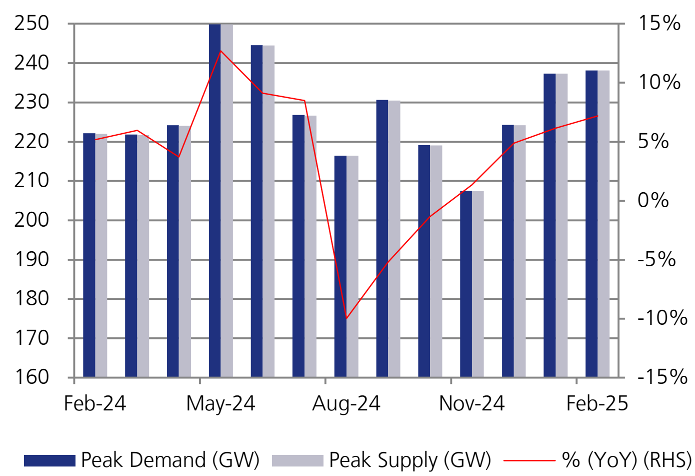
Source: CMIE, JM Financial

Exhibit 2. Energy demand (MU), daily



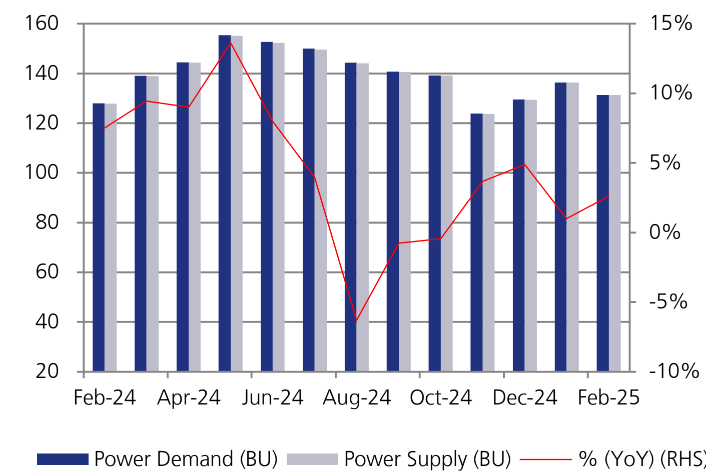
Source: CMIE, JM Financial

Exhibit 3. Peak power demand and supply, monthly



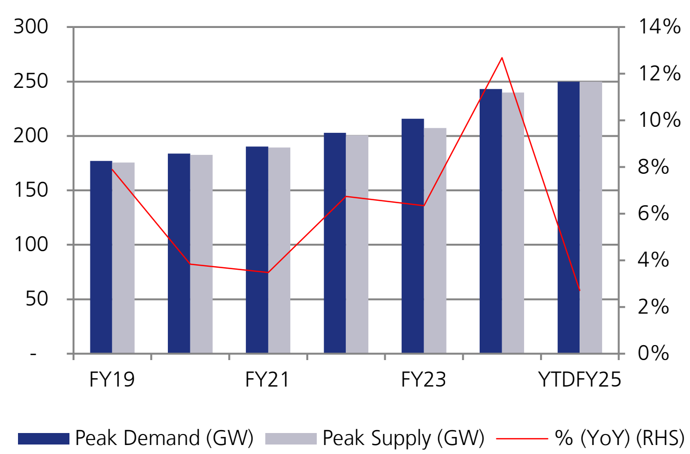
Source: CEA, CMIE, JM Financial

Exhibit 4. Energy demand and supply, monthly



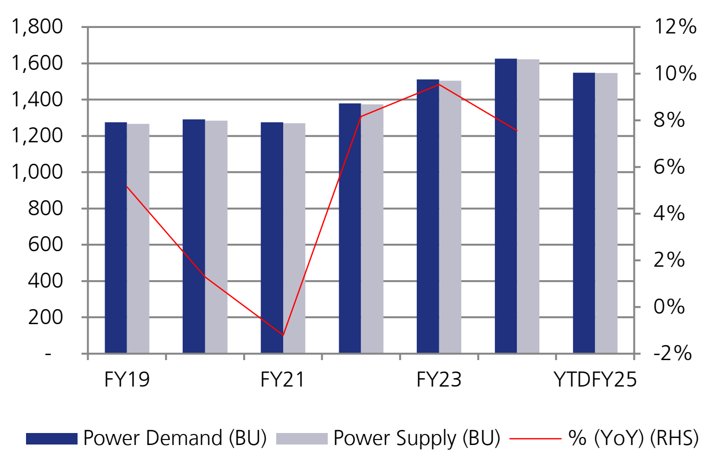
Source: CEA, CMIE, JM Financial

Exhibit 5. Peak power demand and supply, annual



Source: CEA, CMIE, JM Financial

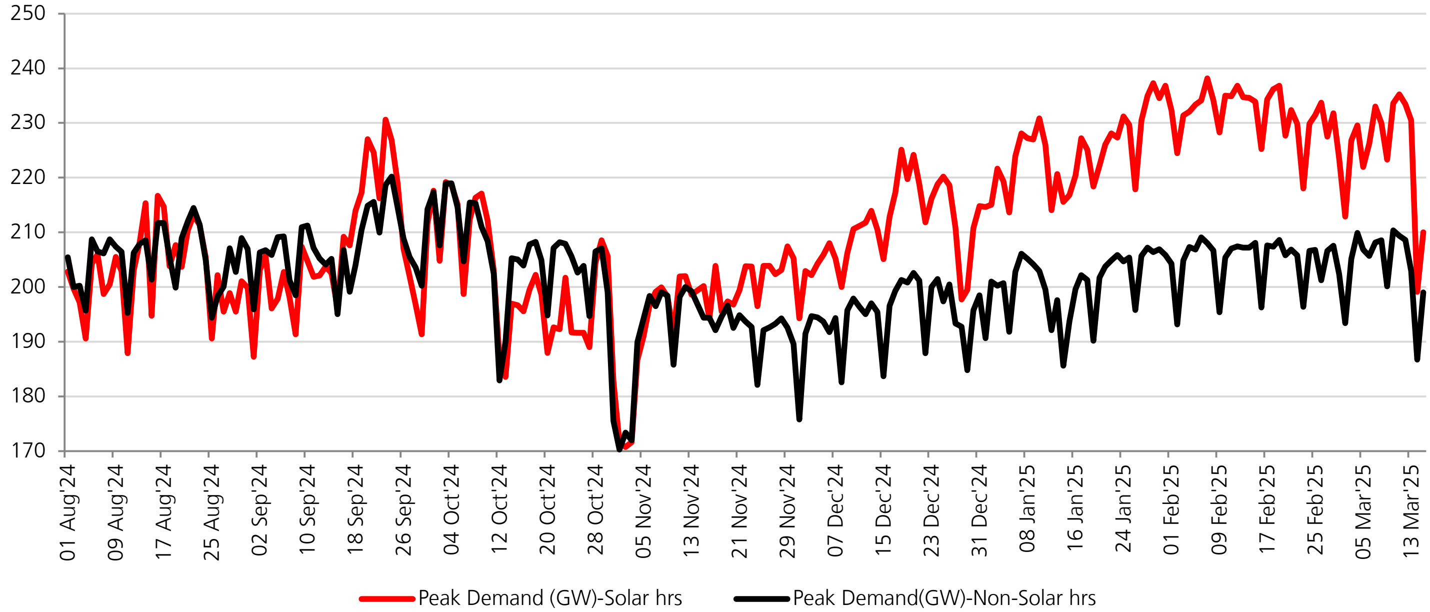
Exhibit 6. Energy demand and supply, annual



Source: CEA, CMIE, JM Financial

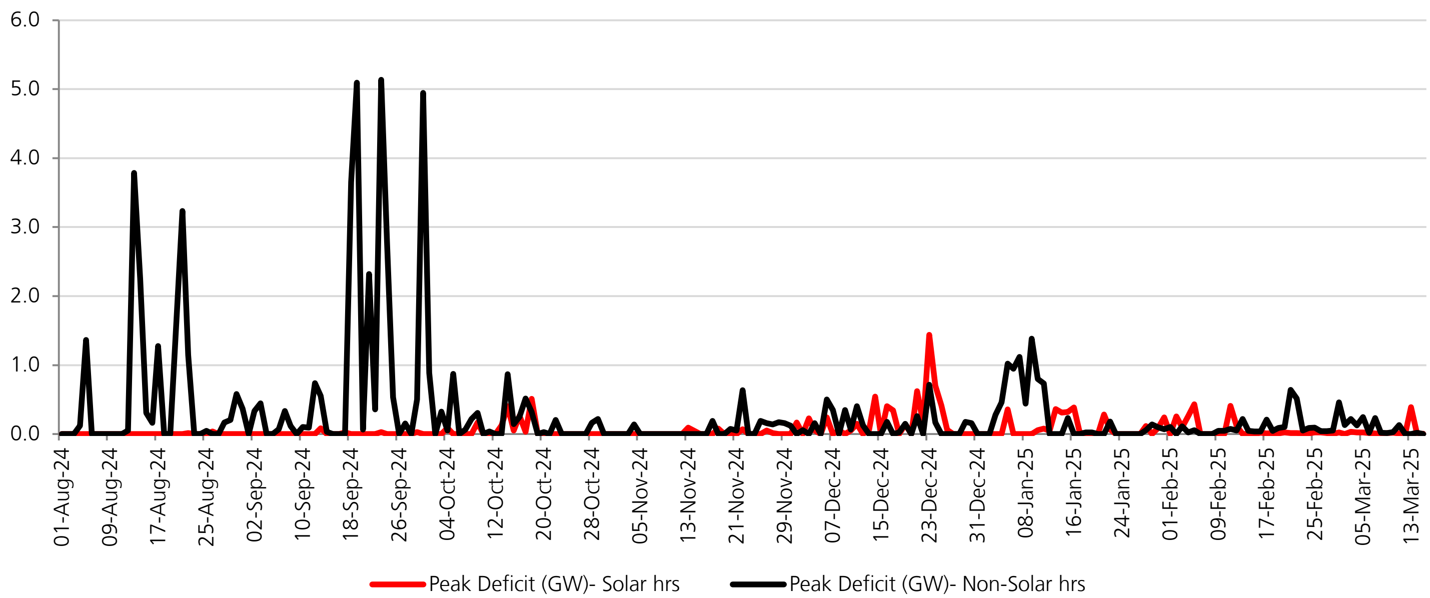
- During Feb'25, peak power demand during solar hours is growing faster than that during non-solar hours.

Exhibit 7. Peak Demand Solar and Non-Solar hrs (GW)



Source: Grid controller of India Ltd, JM Financial

Exhibit 8. Peak Deficit Solar and Non Solar hrs (GW)



Source: Grid controller of India Ltd, JM Financial

Installed Generation Capacity & additions

- Share of non-fossil/ renewables in total installed capacity has increased from 29% in FY15 to 47.4% in YTDFY25.

Exhibit 9. Installed generation capacity (MW)

Fuel Type	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	YTDFY25
Coal	164,636	185,173	192,163	197,172	194,445	198,735	202,675	204,080	205,236	210,970	215,193
Diesel	1,200	994	838	838	638	510	510	510	589	589	589
Gas	23,062	24,509	25,329	24,897	24,937	24,955	24,924	24,900	24,824	25,038	25,188
Total Fossil	**188,898**	**210,675**	**218,330**	**222,907**	**226,279**	**230,810**	**234,728**	**236,109**	**237,269**	**243,217**	**247,590**
Nuclear	5,780	5,780	6,780	6,780	6,780	6,780	6,780	6,780	6,780	8,180	8,180
Hydro (> 25MW)	41,267	42,783	44,478	45,293	45,399	45,699	46,209	46,723	46,850	46,928	46,968
Small hydro (<= 25 MW)	3,804	4,177	4,380	4,486	4,593	4,683	4,787	4,849	4,944	5,003	5,101
Wind	21,136	25,088	32,280	34,046	35,626	37,669	39,247	40,358	42,633	45,887	48,589
Biomass	4,014	4,551	8,182	8,701	9,104	9,861	10,146	10,206	10,248	10,355	10,743
Urban & industrial waste	107	127	130	138	138	140	169	477	554	586	711
Solar	2,632	4,879	12,289	21,652	28,181	34,406	40,085	53,997	66,780	81,814	102,566
Total Non-Fossil	**78,740**	**87,385**	**108,519**	**121,096**	**129,821**	**139,239**	**147,423**	**163,388**	**178,790**	**198,759**	**222,858**
Total Installed capacity	**267,637**	**298,060**	**326,849**	**344,002**	**356,100**	**370,048**	**382,151**	**399,497**	**416,059**	**441,970**	**470,448**

Source: CEA, CMIE, JM Financial

- Share of RE in total annual generation increased from 5.6% in FY16 to 13.7% in YTDFY25.

Exhibit 10. Break-up of Generation (MU)

Fuel Type	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	YTDFY25
Thermal	994,230	1,037,059	1,072,224	1,042,748	1,032,514	1,114,715	1,206,211	1,326,286	1,240,793
Hydro	122,378	126,123	134,894	155,769	150,300	151,627	162,099	134,054	139,757
Nuclear	37,916	38,346	37,813	46,473	43,029	47,112	45,861	47,937	51.937
RE	81,548	101,840	126,759	138,337	147,248	170,912	203,552	225,835	229.212
Others	5,617	4,778	4,407	5,794	8,766	7,493	6,742	4,716	5,363
Total	**1,241,689**	**1,308,146**	**1,376,096**	**1,389,121**	**1,381,855**	**1,491,859**	**1,624,465**	**1,738,828**	**1,667,062**

Source: CMIE, JM Financial

- India added RE capacity of 24.1GW in YTDFY25

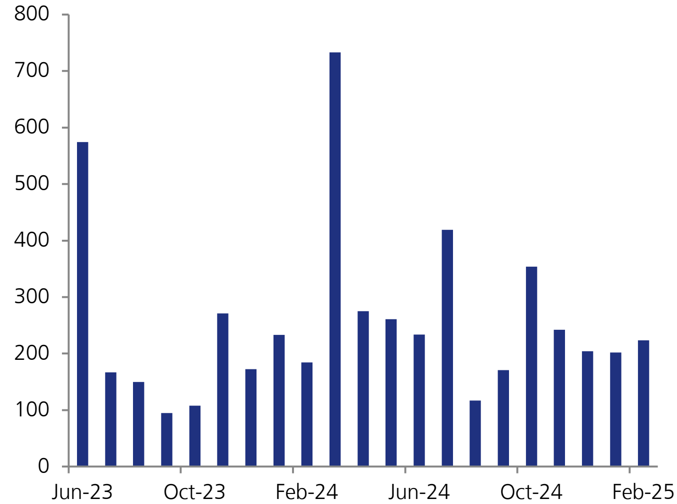
Exhibit 11. Capacity addition (MW), Annual

Fuel Type	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	YTDFY25
Thermal	21,777	7,655	4,577	3,373	4,530	3,919	1,381	1,160	5,948	4,374
Nuclear	-	1,000	-	-	-	-	-	-	1400	-
Hydro	1,516	1,695	815	106	300	510	513	128	78	40
Renewables										
Solar	2,247	7,410	9,363	6,529	6,225	5,680	13,911	12,784	15,033	20,752
Wind	3,952	7,192	1,766	1,580	2,043	1,578	1,111	2,276	3,253	2,702
Others	931	3,837	633	510	849	417	430	215	198	611
Total Renewables	**7,129**	**18,439**	**11,762**	**8,619**	**9,118**	**7,675**	**15,452**	**15,274**	**18,485**	**24,065**
Total Capacity addition	**30,423**	**28,789**	**17,154**	**12,098**	**13,948**	**12,103**	**17,345**	**16,562**	**25,911**	**28,479**

Source: CMIE, JM Financial; *Net addition

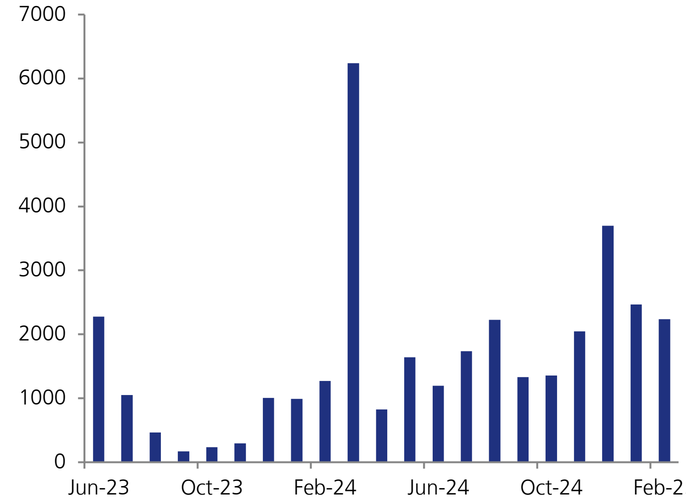
- Wind/ Solar capacity addition in Feb'25 was 223MW/ 2236MW (21% YoY/ 1.8x YoY).
- There has been thermal capacity addition of 4374MW in YTDFY25.

Exhibit 12. Wind capacity addition monthly (MW)



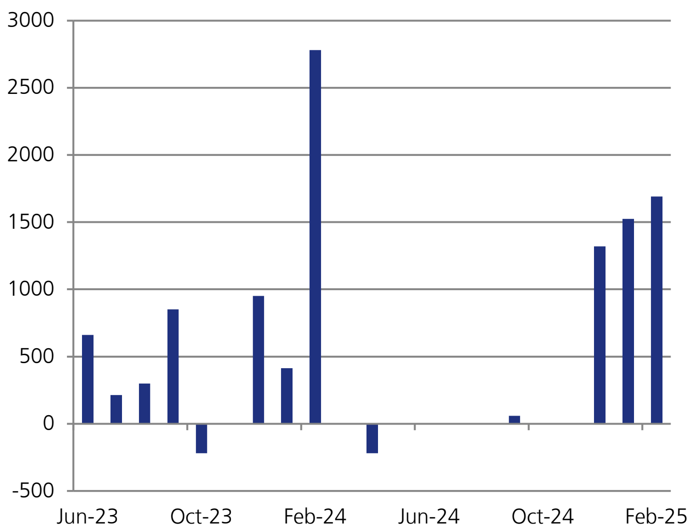
Source: CMIE, JM Financial

Exhibit 13. Solar capacity addition monthly (MW)



Source: CMIE, JM Financial

Exhibit 14. Thermal capacity addition monthly (Commissioning / Decommissioning, MW)

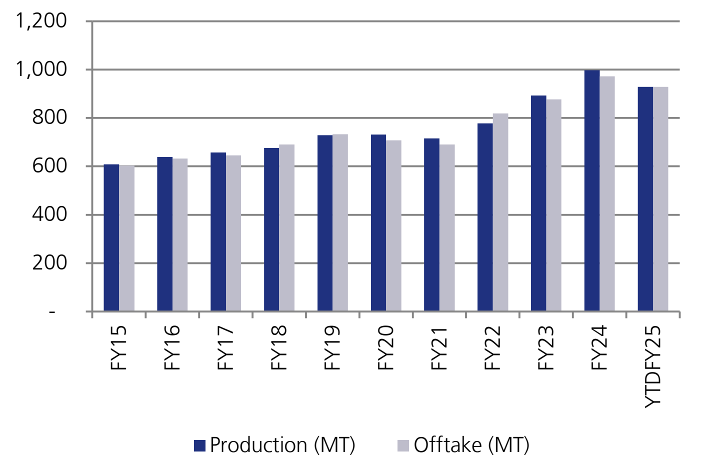


Source: CMIE, JM Financial

Coal production, supply and prices

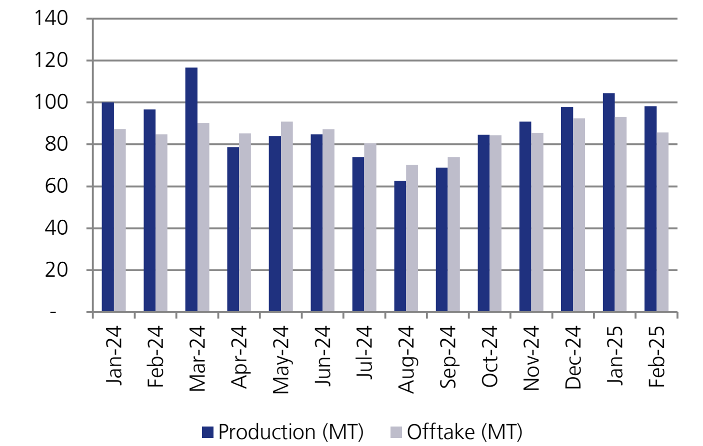
- Coal production was 98MT in Feb'25, higher than 97MT in Feb'24 (2% YoY). Similarly, coal dispatch in Feb'25, was 86MT v/s 85MT in Feb'24 (1% YoY). Indonesian coal prices (5,900kcal/kg) stood at $86.2/MT in Feb'25 (-3% MoM).
- Coal stock at power plants stood at 50.4mnt as of Feb'25.

Exhibit 15. Coal production and offtake (MT), annual



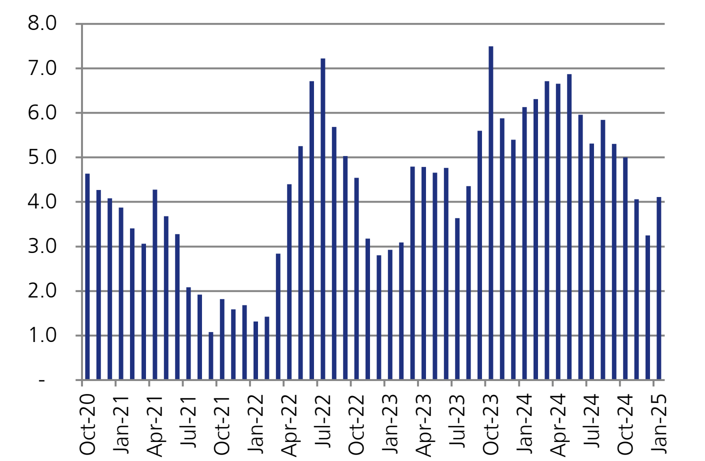
Source: CMIE, JM Financial

Exhibit 16. Coal production and offtake (MT), monthly



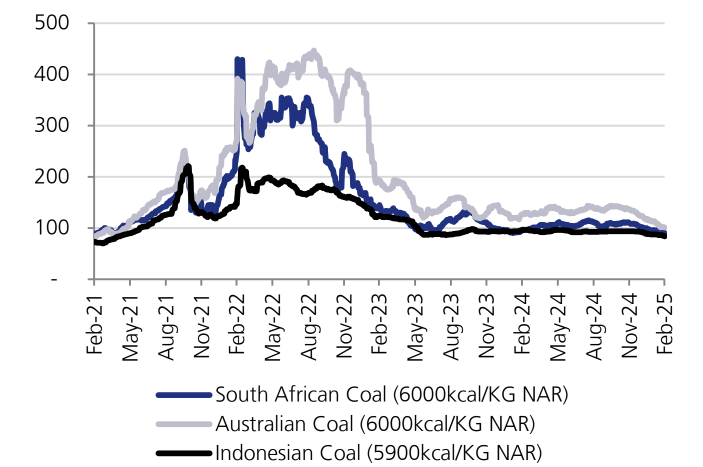
Source: CMIE, JM Financial

Exhibit 17. Coal imports (MT), monthly



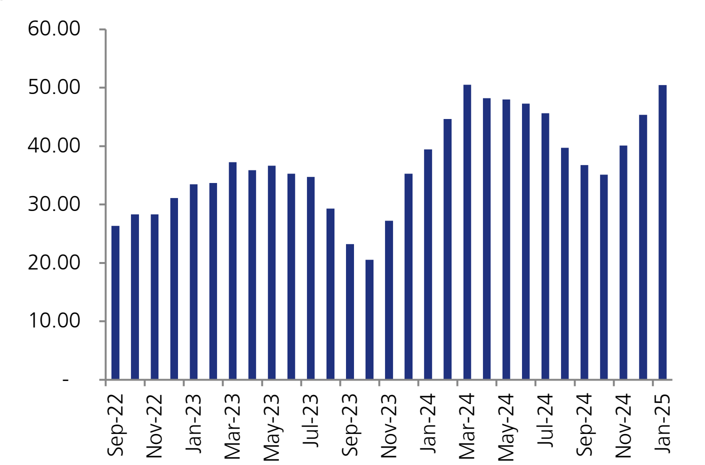
Source: CMIE, JM Financial

Exhibit 18. Imported coal price trend ($/ton)



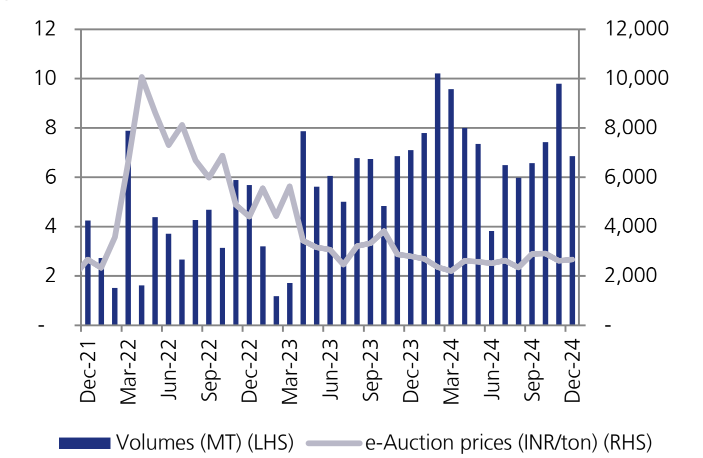
Source: Elekore, JM Financial

Exhibit 19. Coal stock at power plants, MT



Source: CMIE, JM Financial

Exhibit 20. Coal e-auction volume and price, monthly

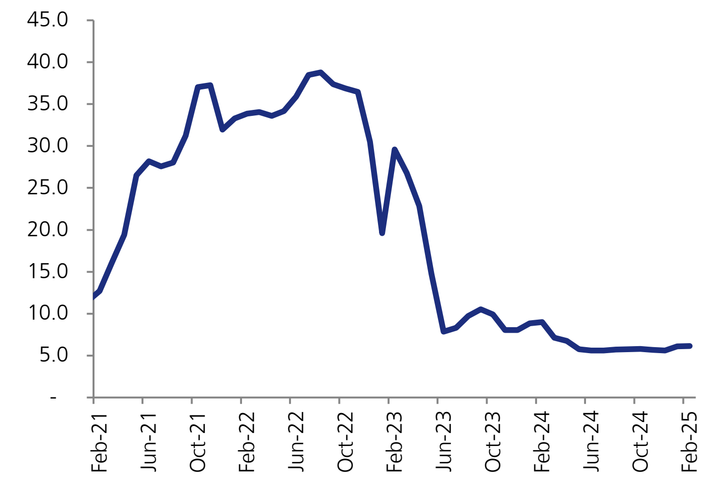


Source: Elekore, JM Financial *e-auction data pertains to power sector

Solar components prices

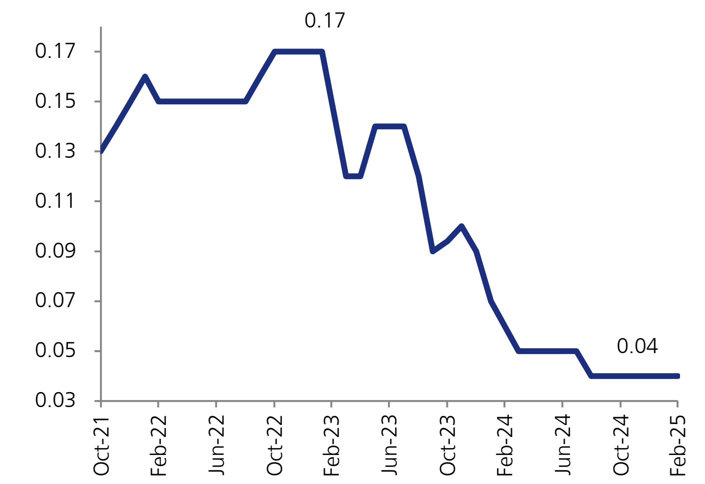
- The prices of solar components, viz., polysilicon, wafers and, cells remain stable.

Exhibit 21. Polysilicon prices (USD/kg)



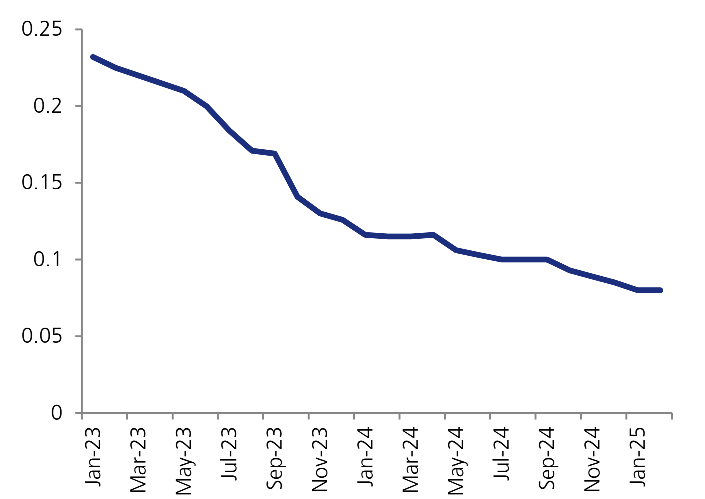
Source: Bloomberg, JM Financial

Exhibit 22. Solar cell prices (USD/watt)



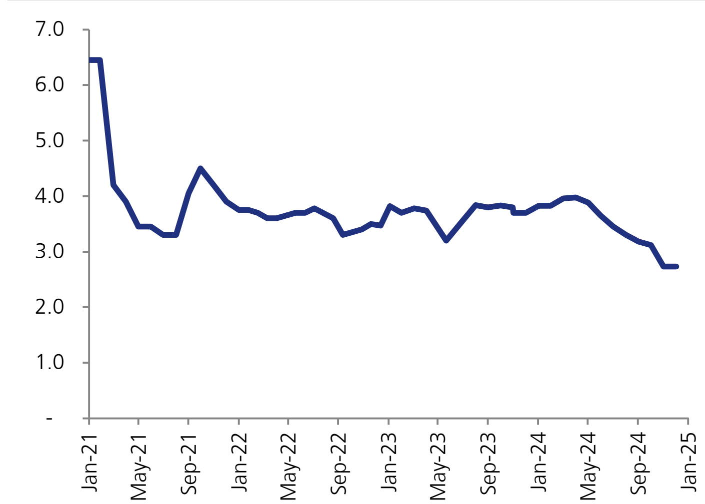
Source: Bloomberg, JM Financial=

Exhibit 23. Solar module prices (USD/watt)*



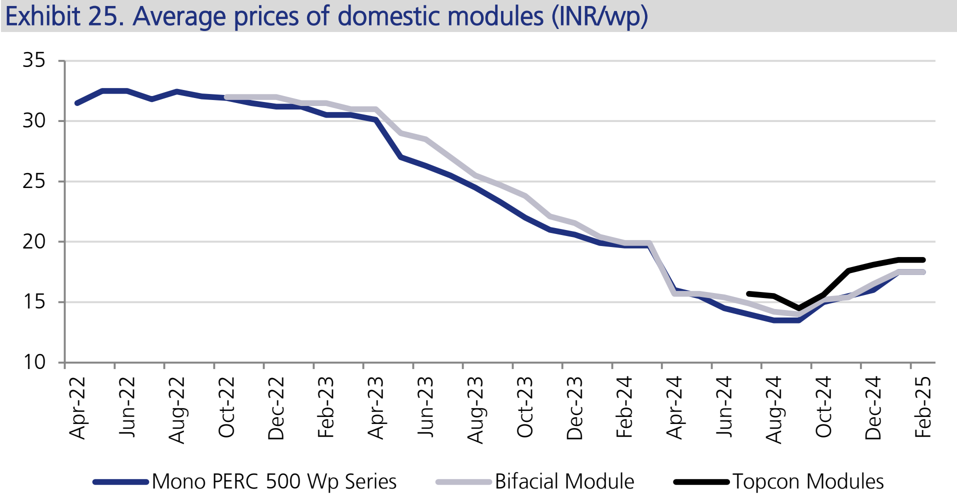
Source: JMK Research; * Mono PERC module prices

Exhibit 24. Prices of PV cell coating glass (USD/m2)



* The top of a traditional silicon monofacial module is rolled glass with a thickness of 3.2mm, and the back of a polymer layer, or backsheet. Bifacial modules are increasingly common and usually consist of two pieces of glass.
Source: Bloomberg, JM Financial

Exhibit 25. Average prices of domestic modules (INR/wp)

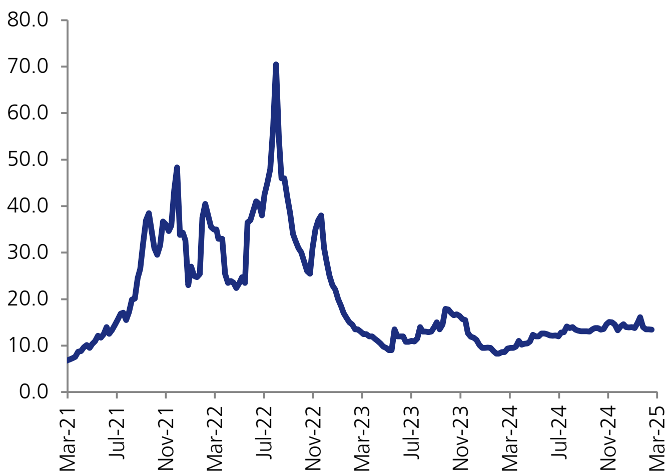


Source: JMK Research, JM Financial

Raw material prices

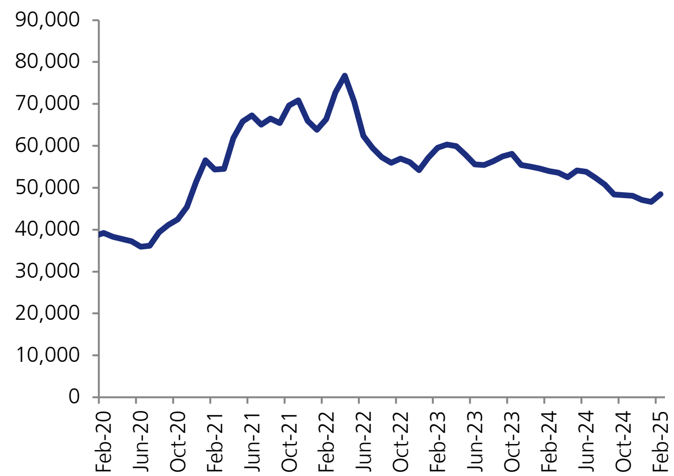
- Prices of key raw materials such as LNG, steel, silver and aluminium have moderated sharply, which bodes well for the entire Solar PV value chain.
- LNG prices moderated from USD 70/mmBtu in Aug'22 to USD 11/mmBtu in May'23 before increasing to USD 17.75/mmBtu in Nov'23, prices now has declined to USD 14.7/mmBtu in Feb'25.
- Domestic HRC steel prices declined from a high of INR 76K/t in Apr'22 to INR 47k/t in Dec'24 and are currently at INR 53.6K/t in Mar'25.

Exhibit 26. Asia spot LNG weekly prices (USD/mmBtu)



Source: Bloomberg, JM Financial

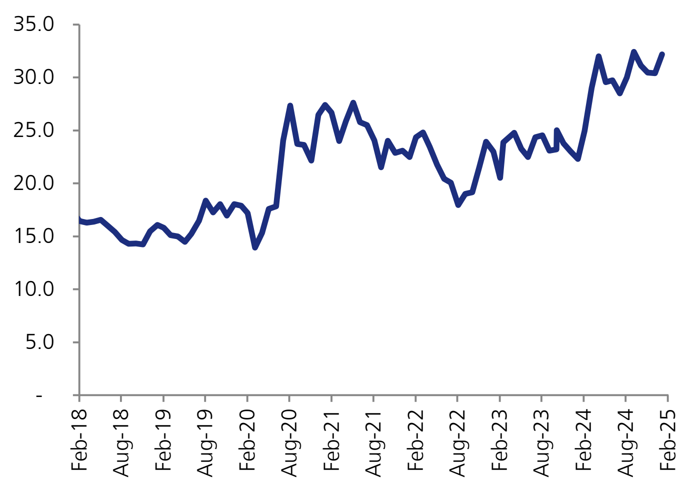
Exhibit 27. Domestic HRC steel prices (INR/ton)



Source: Bloomberg, JM Financial

- After reaching a high of USD 27.40/troy ounce in Aug'20, silver prices dropped to USD 17.90/troy ounce in Aug'22. Post climbing a high of USD 32/troy ounce in May'24, Silver has touched fresh high of USD 32.4/troy ounce in Oct'24 and is currently at INR 32.2/troy ounce in Feb'25.
- Aluminium prices have declined from USD 3,369/MT in Feb'22 to USD 2,152/MT in Jun'23. In Feb'25 Aluminium prices are at ~ USD 2,630/MT.

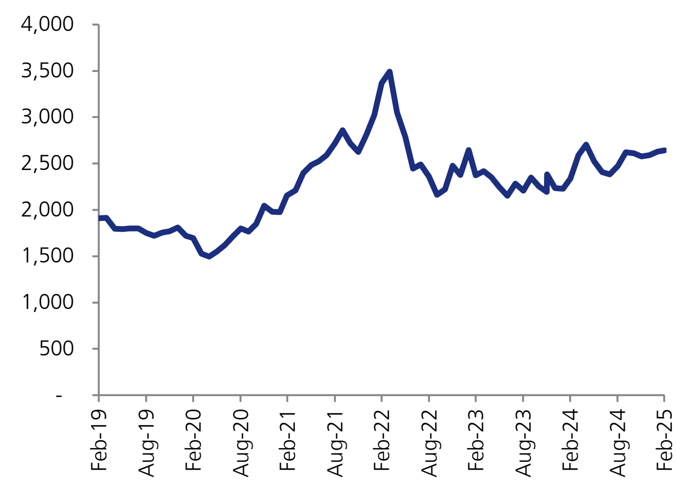
Exhibit 28. Silver prices (USD/troy ounce)



Source: Bloomberg, JM Financial

* Silver paste is the biggest cost component of making wafers into cells and accounts for about 6-7% of the cost for integrated module production. The avg. use of silver in silicon PV modules was 18.5 milligrams per watt in 2020.; 1 troy ounce= 31.1 g

Exhibit 29. Aluminium prices (USD/MT)



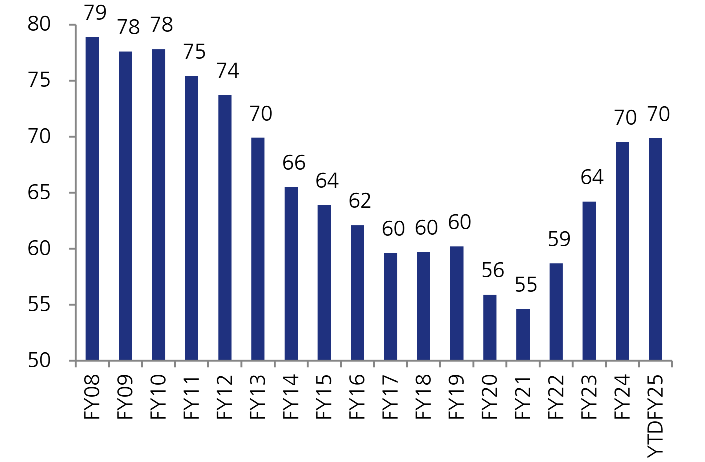
Source: Bloomberg, JM Financial

* Module frames are made of aluminium, making it one of the major cost components of module assembly. Typical consumption of aluminium in silicon PV modules is 5-6 grams per watt.

Plant Load Factor (PLF)

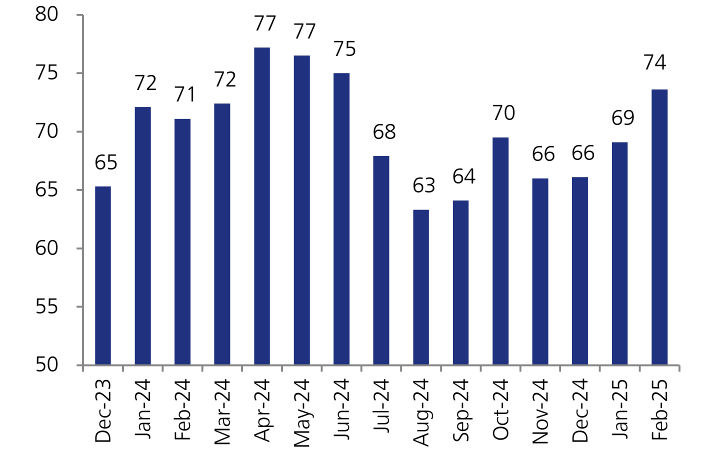
- Monthly Coal PLF/ Gas PLF stood at 74%/15% in Feb'25 vs. 71%/13% in Feb'24.

Exhibit 30. Annual PLF for coal-fired power plants (%)



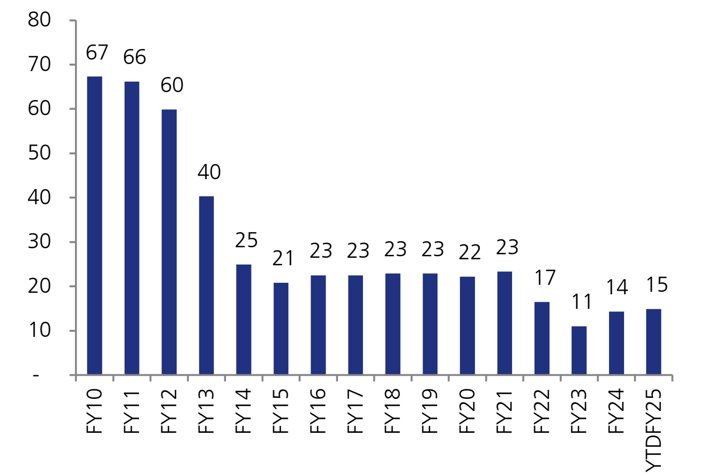
Source: CMIE, JM Financial

Exhibit 31. Monthly PLF for coal-fired power plants (%)



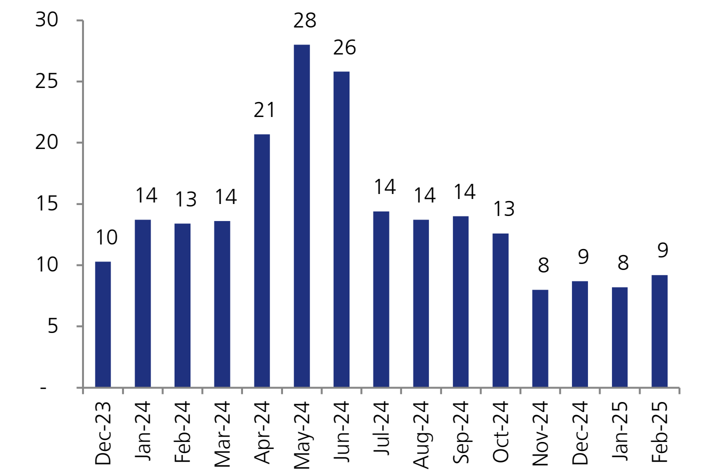
Source: CMIE, JM Financial

Exhibit 32. Annual PLF for gas-fired power plants (%)



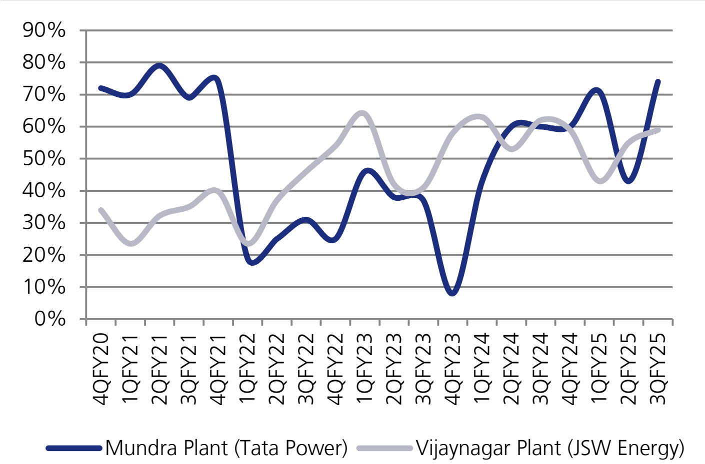
Source: CMIE, JM Financial

Exhibit 33. Monthly PLF for gas-fired power plants (%)



Source: CMIE, JM Financial

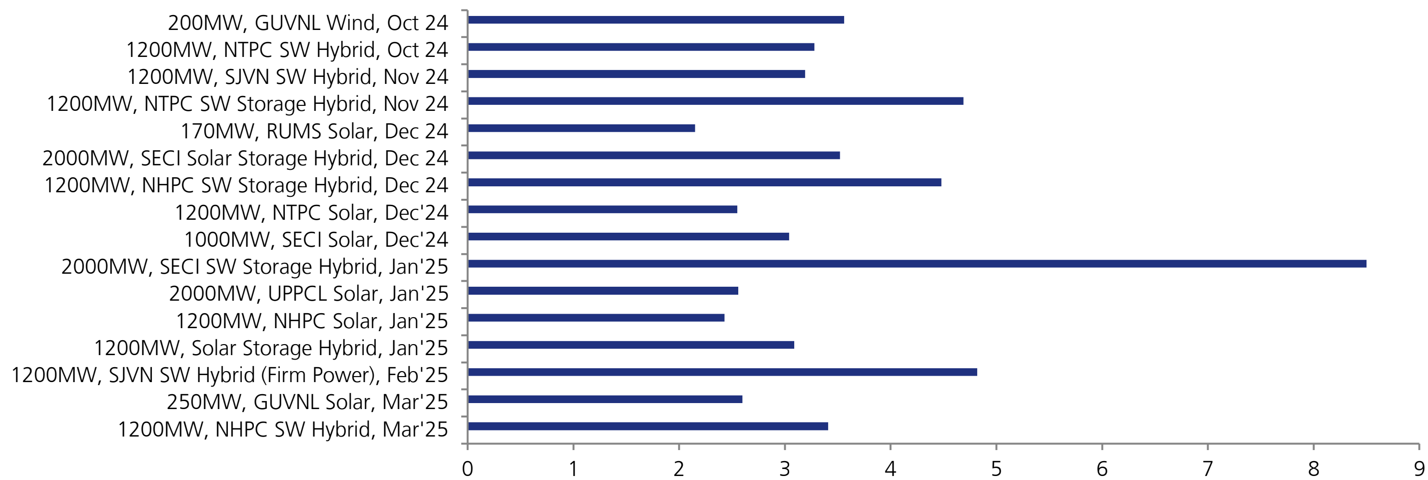
Exhibit 34. Imported coal-based plants, PLF (%)



Source: Company, NPP, JM Financial

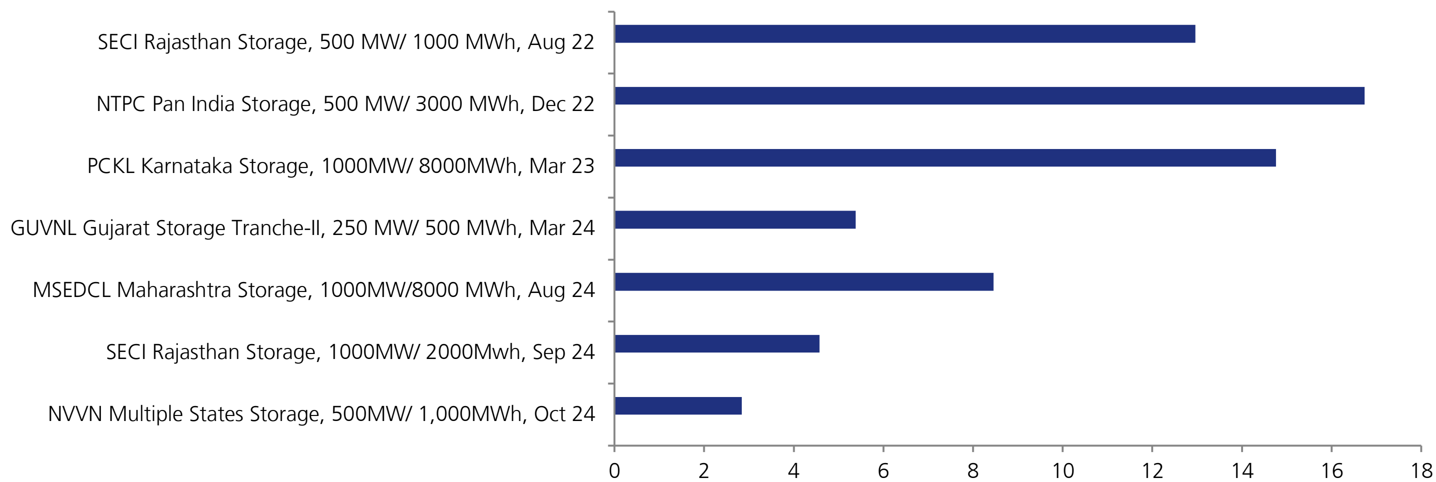
Renewable tariff bidding trend

Exhibit 35. Renewable tariff bidding trend (INR/kWh)



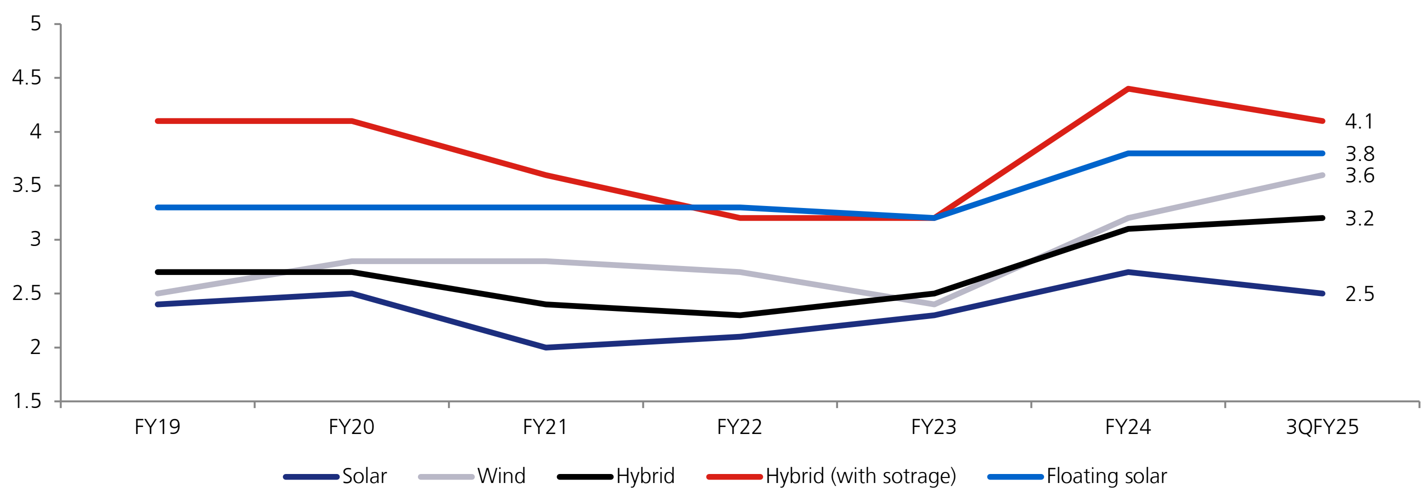
Source: Bridge to India, JM Financial

Exhibit 36. Storage bidding trend (INR Mn/ MW/ Year)



Source: Bridge to India, JM Financial

Exhibit 37. Renewable projects – annual weighted average tariff bidding trend (INR/kWh)

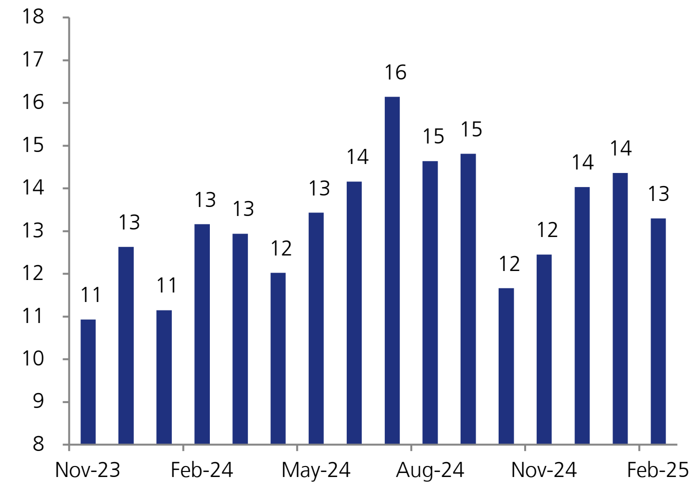


Source: Elekore, JM Financial

Share of renewables in total generation

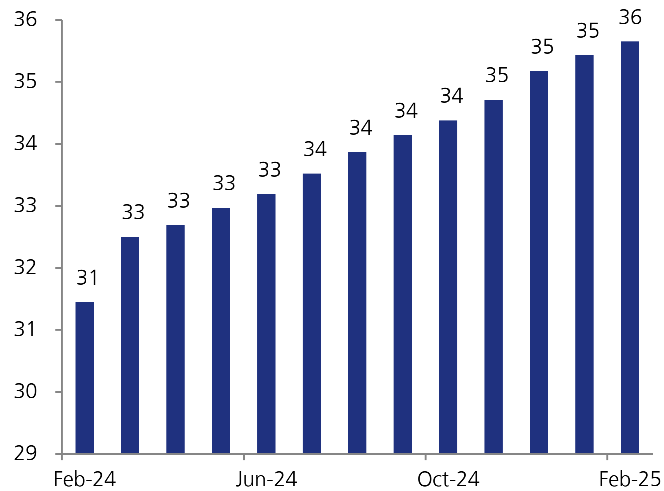
- Share of RE in total annual generation increased from 5.6% in FY16 to 14% in YTDFY25.
- Share of RE in total installed capacity increased from 12% in FY14 to 36% in YTDFY25.

Exhibit 38. Share of RE in total generation, monthly (%)



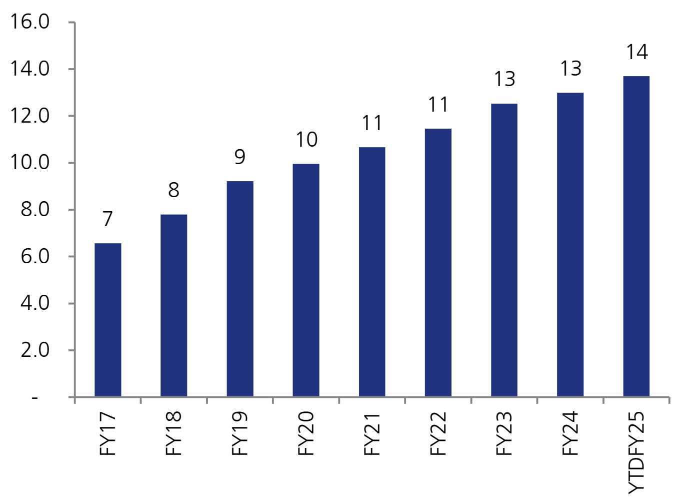
Source: CMIE, JM Financial

Exhibit 39. Share of RE in total installed capacity, monthly (%)



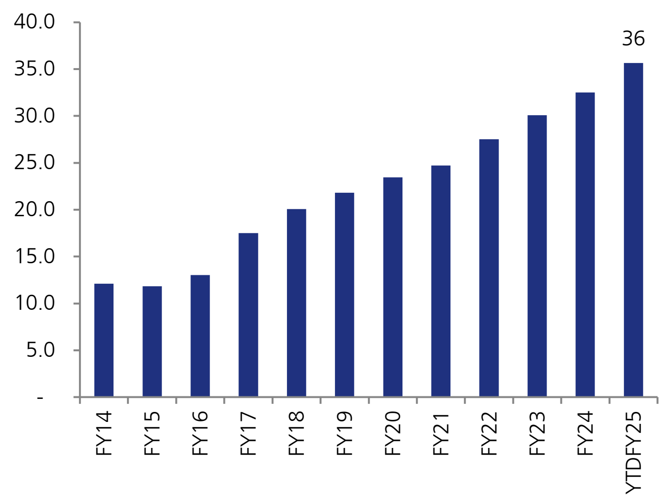
Source: CMIE, JM Financial

Exhibit 40. Share of RE in total generation, annual (%)



Source: CMIE, JM Financial

Exhibit 41. Share of RE in total installed capacity, annual (%)

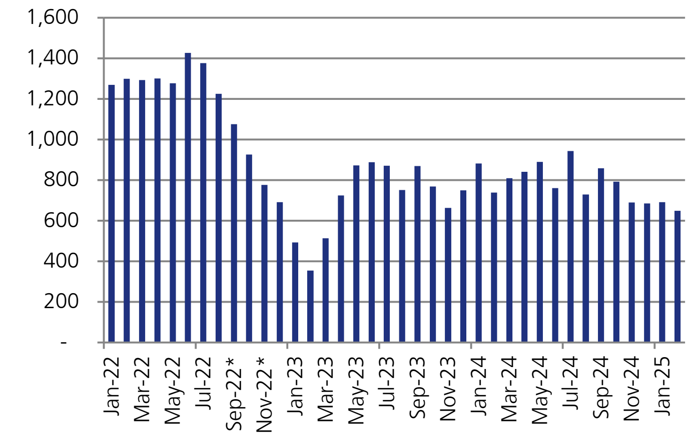


Source: CMIE, JM Financial

Outstanding dues of discoms and other parameters

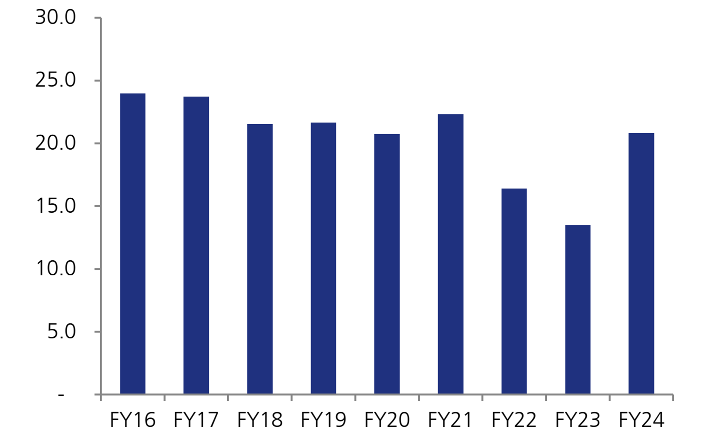
- Outstanding dues of discoms declined sharply from INR 1,426bn in Jun'22 to INR 649bn in Feb'25.
- AT&C losses are seen rising again in FY24 to 19% after having moderated to 13.5% in FY23 from 24% in FY16.
- Annual per capita consumption of electricity has witnessed a healthy growth from 1,075kWh in FY16 to 1,395kWh in FY24.

Exhibit 42. Discoms' current o/s dues to gencos (INR bn)



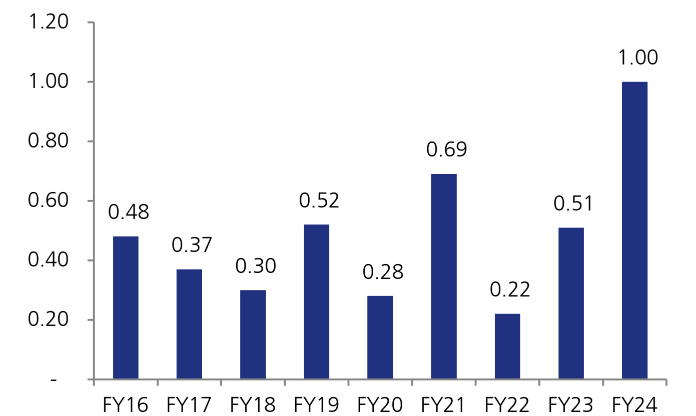
Source: Elekore, JM Financial; * O/s dues for Aug-Nov'22 are estimated

Exhibit 43. Trend in AT&C losses (%)



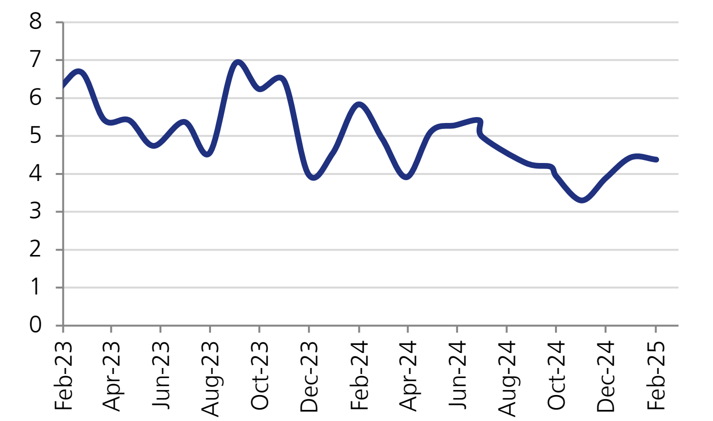
Source: CEA, MoP, UDAY, JM Financial

Exhibit 44. ACS-ARR gap (INR/kWh)



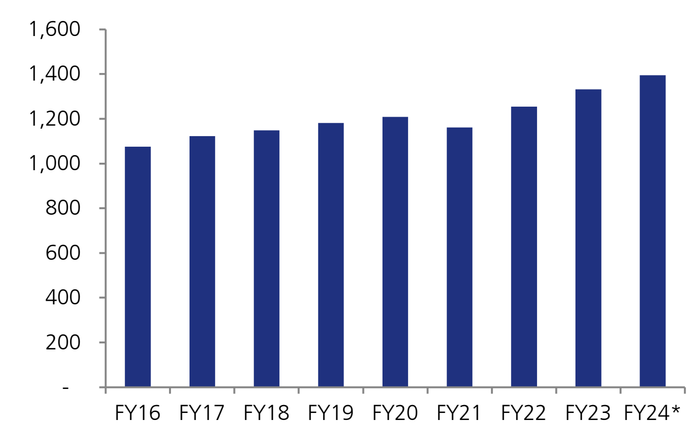
Source: MoP, UDAY; #ACS – Average Cost of Supply; ARR – Average Realizable Revenue *estimated

Exhibit 45. Short-term market prices (INR/kWh)



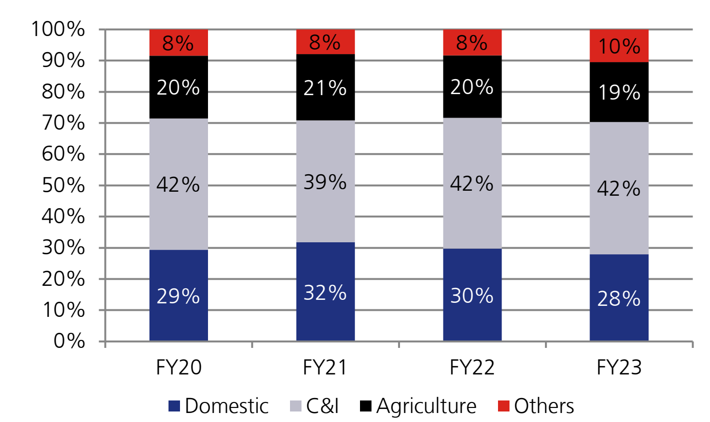
Source: IEX, JM Financial

Exhibit 46. Annual per capita consumption of electricity (kWh)



Source: MoP, CEA, JM Financial; *Provisional

Exhibit 47. Consumer-wise electricity consumption



Source: CMIE, Power Line, JM Financial

Projects under construction

Exhibit 48. Generation capacities under construction (MW)

Technology type	Total capacities under construction (MW)
Renewable*	142,667
Nuclear	6,600
Hydro	21,967
Thermal (coal)	28,020
Total	**199,254**

Source: CEA, DAE, Bridge to India, JM Financial: *As on Dec'24

Status of Nuclear power projects

Exhibit 49. Status of nuclear power projects

State	Location	Project	Capacity (MW)	Expected Completion	Physical Progress (as of Oct-2022) /Status
Projects Under Construction					
Rajasthan	Rawatbhata	RAPP-8	1 X 700	2025	-
Tamilnadu	Kudankulam	KKNPP-3&4	2 X 1000	2025	Construction of various buildings is in advanced stage. Progressive manufacturing, delivery, erection & testing of various equipment & components are in progress. In Unit-3, Major milestone like construction of Inner Containment (IC) dome, Concreting of Outer Containment (OC) dome and Main Coolant Pipeline welding are completed. In Unit-4, construction of Inner Containment Dome is in progress. Erection of Nuclear Steam Supply system (NSSS) is completed.
		KKNPP-5&6	2 X 1000	2027	Tendering/Procurement/Manufacturing and progressive delivery of various equipment and components are in progress. Civil works are in progress.
	Kalpakkam	PFBR	1 x 500	NA	-
Haryana	Gorakhpur	GHAVP-1&2	2 X 700	2029	Construction of various civil structures like Fire Water Pump House, Safety Related Pump House, Fuel Oil Storage Area, D2O Upgrading Building, Switchyard Control Building, Fire and Industrial Safety House, Tunnels, Emergency Makeup Water Pond Area, Retaining wall, etc. are in progress. Construction of Fuel Oil Storage Area (FOSA) is completed. Purchase Orders for various major equipment/components are placed and manufacturing and supply of these are in progress. EPC Contracts for Turbine Island package, Main Plant Electrical Systems & Switchyard Package, Nuclear Island Package, etc have been placed and further activities are in progress.
Projects Accorded Administrative Approval & Financial Sanction					
Karnataka	Kaiga	Kaiga-5&6	2 X 700	Progressively by 2031	Pre-project activities at sites and bulk procurement of long manufacturing cycle equipment are underway. Excavation has commenced in Kaiga-5&6.
Haryana	Gorakhpur	GHAVP–3&4	2 X 700		
Madhya Pradesh	Chutka	Chutka-1&2	2 X 700		
Rajasthan	Mahi Banswara	Mahi Banswara-1&2	2 X 700		
		Mahi Banswara-3&4	2 X 700		

Source: DAE, JM Financial

Status of Hydropower projects

Exhibit 50. Status of hydroelectric projects (above 25MW) under implementation

Sl. No.	Name of Scheme (Executing Agency)	State / UT	District	I.C. (No.XMW)	Cap. Under Execution(MW)	River/Basin	Date of finish/ commissioning
	Central Sector						
1	Subansiri Lower (NHPC)	Arunachal Pradesh	Lower Subansiri Ar. Pradesh / Dhemaji, Assam	8x250	2,000	Subansiri/ Brahmaputra	2025-27 (May'26)
2	Parbati St. II (NHPC)	Himachal Pradesh	Kullu	4x200	800	Parbati/Beas/Indus	2024-25 (Mar'25)
3	Luhri-I (SJVN)	Himachal Pradesh	Kullu/Shimla	2x80+2x25	210	Satluj/Indus	2027-28 (Dec'28)
4	Dhaulasidh (SJVN)	Himachal Pradesh	Hamirpur/ Kangra	2x33	66	Beas/Indus	2026-27 (Mar'27)
5	Pakal Dul (CVPPL)	UT of Jammu & Kashmir	Kishtwar	4x250	1,000	Marusadar/ Chenab / Indus	2026-27 (Sept'26)
6	Kiru (CVPPL)	UT of Jammu & Kashmir	Kishtwar	4x156	624	Chenab/ Indus	2026-27 (Sept'26)
7	Teesta St. VI NHPC	Sikkim	South Sikkim	4x125	500	Teesta/Brahmaputra	2027-28 (Dec'27)
8	Vishnugad Pipalkoti (THDC)	Uttarakhand	Chamoli	4x111	444	Alaknanda/Ganga	2026-27 (Dec'26)
9	Tapovan Vishnugad (NTPC)	Uttarakhand	Chamoli	4x130	520	Dhauliganga / Alaknanada & /Ganga	2028-29 (Mar'29)
10	Rammam-III (NTPC)	West Bengal	Darjeeling	3x40	120	Rammam/ Rangit/Teesta Brahmaputra	2028-29 (Mar'29)
11	Rangit-IV (NHPC)	Sikkim	West Sikkim	3x40	120	Rangit/ Teesta/ Brahmaputra	2025-26 (Dec'25)
12	Ratle (RHEPPL / NHPC)	UT of Jammu & Kashmir	Kishtwar	4x205 + 1x30	850	Chenab/Indus	2028-29 (Nov'28)
13	Kwar (CVPPPL)	UT of Jammu & Kashmir	Kishtwar	4x135	540	Chenab/Indus	2027-28 (Dec'27)
14	Sunni Dam (SJVN)	Himachal Pradesh	Shimla/Mandi	4x73+1x73+1x17	382	Satluj/Indus	2028-29 (Dec'28)
15	Tehri PSS (THDC)	Uttarakhand	Tehri Garhwal	4x250	1000	Bhilangna/Bhagirathi/Ganga	2025-26 (Oct'25)
16	Dibang Multipurpose Project (NHPC)	Arunachal Pradesh	Lower Dibang Valley	12x240	2,880	Dibang/Brahmaputra	2031-32 (Feb'32)
	Sub-Total: Central Sector				12,056		
	State Sector						
17	Polavaram (APGENCO)	Andhra Pradesh	East & West Godavari	12x80	960	Godavari/EFR	2027-28 (Sep'27)
18	Lower Kopli (APGCL)	Assam	Dima Hasao & Karbi Anglong	2x55+2x2.5+1x5	120	Kopili/Brahmaputra	2025-26 (Sept'25)
19	Uhl-III (BVPCL)	Himachal Pradesh	Mandi	3x33.33	100	Uhl/Beas/ Indus	2024-25 (Mar'25)
20	Shongtong Karcham (HPPCL)	Himachal Pradesh	Kinnaur	3x150	450	Satluj/ Indus	2026-27 (Feb'27)
21	Parnai (JKSPDC)	UT of Jammu & Kashmir	Poonch	3x12.5	37.5	Jhelum/ Indus	2027-28 (Jul'27)
22	Pallivasal (KSEB)	Kerala	Idukki	2x30	60	Mudirapuzha/ Periyar/ Baypore Periyar/ WFR	2024-25 (Feb'25)
23	Shahpurkandi (PSPCL/ Irrigation Deptt., Pb.)	Punjab	Pathankot	3x33+3x33+1x8	206	Ravi/ Indus	2026-27 (Apr'26)
24	Kundah Pumped Storage Phase-I,II&III)	Tamil Nadu	Nilgiris	4x125	500	Kundah/Bhavani/ Cauvery/EFR	2025-26 (Dec'25)
25	Chanju-III (HPPCL)	Himachal Pradesh	Chamba	3x16	48	Chanju Nallah	2027-28 (Jul'27)
26	Mankulam (KSEB)	Kerala	Idukki	2x20	40	Melachery	2026-27 (Dec'26)
27	Lakhwar Multipurpose Project (UJVNL)	Uttarakhand	Dehradun & Tehri Garhwal	3x100	300	Yamuna	2028-29 (Oct'28)
28	Lower Sileru Extension (APGENCO)	Andhra Pradesh	Alluri Sitharamaraju	2x115	230	Sileru/Godavari	2025-26 (Oct'25)
29	Sharavathy PSP (APGENCO)	Andhra Pradesh	Shivamonga	8x250	2000	Shimoga/Uttar Kannada	2029-30 (Dec'29)
30	Upper Sileru PSP (APGENCO)	Andhra Pradesh	Alluri Sitharamaraju	9x150	1350	Sileru/Godavari	2028-29 (Feb'29)
	Sub-Total: State Sector				6401.5		

Exhibit 50. Status of hydroelectric projects (above 25MW) under implementation (Contd…)

Sl. No.	Name of Scheme (Executing Agency)	State / UT	District	I.C. (No.XMW)	Cap. Under Execution(MW)	River/Basin	Date of finish/ commissioning
	Private Sector						
31	Tidong-I (Statkraft IPL)	Himachal Pradesh	Kinnaur	3x50	150	Tidong/Satluj/Indus	2026-27 (Jun'26)
32	Kutehr (JSW Energy Ltd)	Himachal Pradesh	Chamba	3x80	240	Ravi/ Indus	2025-26 (Jul'25)
33	Pinnapuram (Greenko AP01 IREP Private Limited)	Andhra Pradesh	Kurnool	4x240+2x120	1200	Pennar Basin	2025-26 (Jul'25)
34	MP30 Gandhi Sagar Pumped Storage Project (Greenko MP01 IREP Pvt. Ltd.)	Madhya Pradesh	Neemuch	7x240+2x120	1920	Off stream	2028-29 (Jun'28)
Sub-Total: Private Sector					3510		
	Total				21,967.5		

Source: CEA as on Feb'25, JM Financial,
Note:- Presently 28 no. of hydroelectric project (above 25 MW) totalling to 13,997.5 MW and 6 no. of Pumped Storage project (above 25 MW) totalling to 7,970 MW are under active construction.

Status of thermal (coal) capacities

Currently, there are 21 thermal projects under construction. 1600MW Singrauli STPP, ST-III is the new addition to the list. This project is expected to be commissioned in 2029/2030.

Exhibit 51. Thermal (coal) capacities under construction

Sr. No	Project Name	State Implementing Agency Boiler Turbine	LOA Date	Unit No	Cap. (MW)	Original Trial Run	Anticipated Trial Run (as per CEA)	Physical Progress %
	Central Sector							
1	Barh STPP, St-I	BR NTPC Doosan Power M/c, Russia	Mar'05	U-3	660	Oct'11	Mar'25	94%
2	Buxar TPP	BR SJVN L&T L&T	Jun'19	U-1	660	May'23	Mar'25	96%
				U-2	660	Sep'23	Sep'25	88%
3	North Karanpura STPP	JH NTPC BHEL BHEL	Feb'14	U-3	660	Jun'19	Mar'25	95%
4	Patratu STPP	JH PVUNL BHEL BHEL	Mar'18	U-1	800	Jan'22	Mar'25	77%
				U-2	800	Jul'22	Dec'25	70%
				U-3	800	Jan'23	Mar'26	57%
5	Talcher TPP, St-III	OR NTPC BHEL BHEL	Sep'22	U-1	660	Nov'26	Sep'27	33%
				U-2	660	May'27	Dec'27	29%
6	Lara STPP St-II	CH NTPC BHEL BHEL	Aug'23	U-1	800	Dec'27	Dec'27	5%
				U-2	800	Jun'28	Jun'28	2%
7	Ghatampur TPP	UP L&T MHPS GE Power NUPPL	Aug'16	U-2	660	Nov'20	May'25	88%
				U-3	660	May'21	Oct'25	80%
8	NLC TALABIRA TPP	Odisha NLC BHEL BHEL	Jan'24	U-1	800	May'28	Mar'29	0%
				U-2	800	Nov'28	Sep'29	0%
				U-3	800	May'29	Mar'30	0%
9	Sipat STPP, St-III	Chhattisgarh NTPC BHEL BHEL	Sep'24	U-6	800	Sep'29	Sep'29	0%
10	Khurja SCTPP	UP L&T MHI THDC BHEL	Aug'19	U-2	660	Jan'24	Jun'25	84%
11	Singrauli STPP, St-III	MP NTPC BHEL BHEL	Mar'24	U-1	800	May'29	May'29	0%
				U-2	800	Feb'30	Nov'29	0%
	State Sector							
1	Obra-C STPP	UP UPRVUNL Doosan India Doosan India (GE)	Dec-16	U-2	660	Apr'21	Mar'25	88%
2	Panki TPS Extn.	UP UPRVUNL BHEL BHEL	Mar'18	U-1	660	Sep'21	Feb'25	82%
3	Ennore SCTPP	TN TANGEDCO BHEL BHEL	Sep'14	U-1	660	Jan'18	Sep'26	77%
				U-2	660	Mar'18	Nov'26	74%
4	North Chennai TPP, St-III	TN TANGEDCO BHEL BHEL	Jan'16	U-1	800	Oct'19	Mar'25	96%

Source: CEA as on Jan'25, JM Financial

Exhibit 51. Thermal (coal) capacities under construction (Contd…)

Sr. No	Project Name	State Implementing Agency Boiler Turbine	LOA Date	Unit No	Cap. (MW)	Original Trial Run	Anticipated Trial Run (as per CEA)	Physical Progress %
5	Udangudi STPP, St-I	TN TANGEDCO BHEL BHEL	Dec'17	U-1	660	Jan'21	Mar'25	88%
				U-2	660	Mar'21	Aug'25	87%
6	Bhusawal TPS	MH MAHAGENCO BHEL BHEL	Jan'18	U-6	660	May'22	Feb'25	97%
7	Sagardighi TPP St-III	WB WBPDCL BHEL BHEL	Dec'18	U-5	660	Jan'24	May'25	87%
8	Yadadri TPS	TEL TSGENCO BHEL BHEL	Oct'17	U-1	800	Oct'21	Mar'25	92%
				U-3	800	Jun'22	May'25	90%
				U-4	800	Jun'22	Apr'25	91%
				U-5	800	Oct'22	Jun'25	87%
9	DCRTPP Extn	HR HPCGL BHEL BHEL	Feb'24	U-3	800	Sep'29	Sep'29	0%
	Private Sector							
1	Mahan STPP	MP Mahan Energen Ltd BHEL (Supply) BHEL (Supply)	Aug'23	U-1	800	Nov'26	Dec'26	30%
				U-2	800	May'27	May'27	25%
2	Raipur Ext TPP, Ph-II	CH Adani Power BHEL (Supply) BHEL (Supply)	Jun'24	U-1	800	Jan'28	Jan'28	
				U-2	800	Jul'28	Jul'28	
					28,020			

Source: CEA as on Jan'25, JM Financial

Status of stressed power projects

- Total of 26 power projects having capacity of 23,555MW remain stressed as of Jan'25.

Exhibit 52. Status of stressed power projects

Sr No	State	Project Name / Implementation Agency/ EPC or BTG	LOA/ Date/ ordered date	Unit No	Capacity MW	Original Commissioning Schedule	Present Status/Remarks
CENTRAL SECTOR							
1	Rajasthan	Barsingar TPP ext/ NLC/ Reliance Infra/ Chinese	Nov'16	U-1	250	May'20	Project was held up due to withdrawal of PPA by DISCOM (Rajasthan), due to land issue in linked mines and consequently higher tariff. On 04-08-2022, a meeting was held (Additional Secretary-Coal, GoI along with NLCIL Directors met Chief Secretary-GoR and Principal Secretary-Energy) and it was jointly decided not to pursue with the Barsingsar TPS Extension project (1X250 MW) along with Hadla Mine.
2	Rajasthan	Bithnok TPP/ NLC/ Reliance Infra/ Chinese	Nov'16	U-1	250	May'20	Project was held up due to withdrawal of PPA by DISCOM (Rajasthan) due to increased project cost and time over run. On 04-08-2022 a meeting was held (Additional Secretary-Coal, GoI along with NLCIL Directors met Chief Secretary-GoR and Principal Secretary-Energy) to revive the Bithnok TPS. Based on the decision, a consultant was appointed to prepare feasibility. Further, as per the discussions held with Rajasthan government officials, it has been agreed that NLC and GoR will jointly work to revive the Bithnok Thermal Power Project along with Bithnok Mines. The consultant has prepared the feasibility report for revival of the project and the same is under "scrutiny and approval"
PRIVATE SECTOR							
1	Andhra Pradesh	Bhavanapadu TPP Ph-I / East Coast Energy Ltd. / BTG DEC china	Sep'09	U-1	660	Oct'13	Liquidation Order date 22/04/2019. Liquidator has partially sold the assets (P&M) of the company on a standalone basis through e-auction. Further, the liquidator has also sold the Land including buildings at the Plant Site on 9th Feb 2023.
			Sep'09	U-2	660	Mar'14	
2	Andhra Pradesh	Thamminapatnam TPP stage–II / Meenakshi Energy Pvt. Ltd. SG-Cether vessels TG- Chinese	Dec'09	U-3	350	May'12	Vedanta Ltd. Has bought this plant under NCLT route. The project is likely to be commissioned during 2024-25. (U#3: Feb'25, U#4: Mar'25)
			Dec'09	U-4	350	Aug'12	
3	Bihar	Siriya TPP (Jas Infra. TPP) / JICPL BTG- DEC China	Mar'11	U-1	660	Aug'14	Liquidation Order date 17.07.2020; The Enforcement directorate has attached the assets of the corporate debtor and as a result of which the auction of the assets are kept on hold.
			Mar'11	U-2	660	Dec'14	
			Mar'11	U-3	660	Apr'15	
			Mar'11	U-4	660	Aug'15	
4	Chhattisgarh	Akaltara TPP (Naiyara) / KSK Mahandi Power Co. Ltd./ Boiler- SEPCO CHINA/ TG- SEPCO (Dongfong China)	Apr'09	U-4	600	Apr'13	CIRP commenced on 3rd October 2019 & currently under NCLT. Resolution Plans were opened on 05-06-2024. M/s JSW Energy has been declared as successful Resolution applicant. Units are likely to be revived by CY2030.
			Apr'09	U-5	600	Aug'13	
			Apr'09	U-6	600	Dec'13	
5	Chhattisgarh	Binjkote TPP/ SKS Power Generation (Chhattisgarh) Ltd. Boiler-Cethar Vessels /Turbine-Harbin China	Mar'11	U-3	300	Mar'14	Reworked bids (seven) received from the Resolution Applicants. Voting is completed. Plan submitted by Sarda Energy & Minerals has been approved by NCLT on 13-08-2024. The Unit#3&4 are likely to be revived by CY 2031.
			Mar'11	U-4	300	Jun'14	
6	Chhattisgarh	Lanco Amarkantak TPP- II/ LAP Pvt. Ltd. BTG-DEC china	Nov'09	U-3	660	Jan'12	Adani Power Limited resolution plan submitted for NCLT approval on 10.03.2024 (e-filing). NCLT approved the resolution plan on 21-08-2024.
			Nov'09	U-4	660	Mar'12	
7	Chhattisgarh	Singhitarai TPP/ Athena CG Power Ltd. BTG–DEC china	Dec'09	U-1	600	Nov'14	Vedanta Ltd. has bought the power plant under liquidation. Plant is likely to be revived by CY-2025
			Dec'09	U-2	600	Feb'15	
8	Chhattisgarh	Salora TPP / Vandana Vidyut/ Boiler- Cether Vessles / TG Harbin China	Sep'09	U-2	135	Sep'11	The liquidator successfully sold the assets of corporate debtor as per provision of IBC, 2016.
9	Chhattisgarh	Deveri (Visa) TPP / Visa Power Ltd. BTG-BHEL	Jun'10	U-1	600	Aug'13	The liquidator has started the process of liquidating the company by selling the assets of the Corporate Debtor on piecemeal basis. BHEL claims certain unpaid lien on the assets available at the site of the Corporate Debtor and in this regard matter is still pending before the Supreme Court of India.

Source: CEA, Jan'25, JM Financial

Exhibit 52. Status of stressed power projects (Contd…)

Sr No	State	Project Name / Implementation Agency/ EPC or BTG	LOA/ Date/ ordered date	Unit No	Capacity MW	Original Commissioning Schedule	Present Status/Remarks
10	Jharkhand	Matrishri Usha TPP Ph-I / CorporatePower Ltd. EPC- BHEL	Dec'09	U-1	270	Apr'12	The liquidator is making endeavor to sell the company as per provision of IBC, 2016 and the regulation laid there in.
			Dec'09	U-2	270	May'12	
11	Jharkhand	Matrishri Usha TPP Ph-II / CorporatePower Ltd. EPC- BHEL	Mar'11	U-3	270	Oct'12	
			Mar'11	U-4	270	Jan'13	
12	Jharkhand	Tori TPP Ph-I / Essar Power Ltd. BTG- Harbin China	Aug'08	U-1	600	Jul'12	The Liquidator has initiated the e-auction process for realizing the assets of the Corporate Debtor and till date has sold around 15,000 MT of Fabricated Steel Structure from the power plant
			Aug'08	U-2	600	Sep'12	
13	Jharkhand	Tori TPP Ph-II / Essar Power Ltd./ BTG- Harbin China	Feb'10	U-3	600	Dec'15	
14	Maharashtra	Amravati TPP Ph-II / Ratan India Power Pvt. Ltd. BTG- BHEL	Oct-10	U-1	270	Jul-14	Company has decided to drop Phase II due to following reasons: a) no new Bids for Long Term PPAs have been coming up in the Market since the last 5 years. b) the revised emission norms under the Environment (Protection) Amendment Rules, 2015 revising, inter alia, emission norms for thermal power plants., drastic changes in the design and equipment of Phase II was required to be carried out.
			Oct'10	U-2	270	Sep'14	
			Oct'10	U-3	270	Nov'14	
			Oct'10	U-4	270	Jan'15	
			Oct'10	U-5	270	Mar'15	
15	Maharashtra	Nasik TPP Ph-II / Ratan India Nasik Power Pvt. Ltd. BTG- BHEL	Nov'09	U-1	270	Apr'13	
			Nov'09	U-2	270	Jun'13	
			Nov'09	U-3	270	Aug'13	
			Nov'09	U-4	270	Oct'13	
			Nov'09	U-5	270	Dec'13	
16	Maharashtra	Lanco Vidarbha TPP / LVP Pvt. Ltd. EPC-LANCO/ Boiler- Dongfong China / Turbine- Harbin china	Nov'09	U-1	660	Jul'14	Majority of Plant material has been auctioned and removed from site. 706 Acres of Land and approx. 4000 MT of material is yet to be auctioned as they were under Litigation.
			Nov'09	U-2	660	Nov'14	
17	Maharashtra	Bijora Ghanmukh TPP / Jinbhuvish Power Generation Pvt. Ltd.	Sep'11	U-1	300	Dec'16	The coal linkage matter for this project is sub judice and once it is resolved, developer will be looking for funding options and further process.
			Sep'11	U-2	300	Mar'17	
18	Madhya Pradesh	Gorgi TPP / D.B. Power (MP) Ltd. BTG- BHEL	Mar'11	U-1	660	Jun'13	The company has requested a COD extension with GoMP, and a revival will be planned accordingly on the final permission.
19	Odisha	Utkal TPP (Odisha)/ Ind Barath/ BTG-Cethar Vessels	May'09	U-2	350	Dec'11	JSW Energy has bought the plant under NCLT route. U#2 is likely to be commissioned in Mar'25.
20	Odisha	KVK Nilanchal TPP/ KVK Nilanchal/ BTG-Harbin China	Nov'09	U-1	350	Dec'11	Project sold to successful bidder M/s Padmaprabhu Commodity Trading Pvt Ltd in the E-auction held on 26th August 2022
			Nov'09	U-2	350	Feb'12	
			Nov'09	U-3	350	Feb'12	
21	Odisha	Lanco Babandh TPP / LBP Ltd./ BTG- DEC Chinese	Nov'09	U-1	660	Apr'13	The Liquidator has partially sold the assets of the company on a standalone basis through e-auction dated 27.08.2021
			Nov'09	U-2	660	Aug'13	
22	Odisha	Malibrahmani TPP / MPCL/ BTG-BHEL	Jun'10	U-1	525	Dec'12	Jindal Steel & Power has acquired the asset under liquidation; Plant is likely to be revived by CY2025
			Jun'10	U-2	525	Feb'13	
23	Tamil Nadu	Tuticorin TPP (Ind- Barath) / IBPIL / BTG- Shangdong China	May'10	U-1	660	May'12	Successful bidder has been identified. However, the Liquidation process has been stayed by the Hon'ble NCLAT.
24	West Bengal	Hiranmaye Energy Ltd (India Power corporation (Haldia) TPP / Haldia Energy Ltd/ EPC- MEIL / BTG- BHEL.	Sep'10	U-3	150	May'16	Project is currently under hold.
		TOTAL [No. of Projects:26, No. of Units:53]			23,555		

Source: CEA, Jan'25, JM Financial

APPENDIX I

JM Financial Institutional Securities Limited

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Hold	Price expected to move in the range of 10% downside to 10% upside from the current market price for stocks with market capitalisation in excess of INR 200 billion and REITs* and in the range of 10% downside to 15% upside from the current market price for all other stocks, over the next twelve months.
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